

2015

Challenges in the conservation of high seas biodiversity in the Southeast Pacific

Carole Claire Durussel

University of Wollongong

Recommended Citation

Durussel, Carole Claire, Challenges in the conservation of high seas biodiversity in the Southeast Pacific, Doctor of Philosophy thesis, Australian National Centre for Ocean Resources and Security (ANCORS) - Faculty of Law, Humanities and the Arts, University of Wollongong, 2015. <http://ro.uow.edu.au/theses/4415>

UNIVERSITY OF WOLLONGONG

COPYRIGHT WARNING

You may print or download ONE copy of this document for the purpose of your own research or study. The University does not authorise you to copy, communicate or otherwise make available electronically to any other person any copyright material contained on this site. You are reminded of the following:

Copyright owners are entitled to take legal action against persons who infringe their copyright. A reproduction of material that is protected by copyright may be a copyright infringement. A court may impose penalties and award damages in relation to offences and infringements relating to copyright material. Higher penalties may apply, and higher damages may be awarded, for offences and infringements involving the conversion of material into digital or electronic form.



Challenges in the Conservation of High Seas Biodiversity in the Southeast Pacific

A thesis submitted in fulfilment of the
requirements for the award of the degree

Doctor of Philosophy
from
University of Wollongong

by

Carole Claire Durussel
Diplom Marine Umweltwissenschaften
(*Carl von Ossietzky Universität Oldenburg*)

Australian National Centre for Ocean Resources and Security (ANCORS)
Faculty of Law, Humanities and the Arts
University of Wollongong

March 2015

CERTIFICATION

I, **Carole C. Durussel**, declare that this thesis, submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the Australian National Centre for Ocean Resources and Security (ANCORS), Faculty of Law, Humanities and the Arts, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

Carole C. Durussel

20 March 2015

ABSTRACT

The conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction (ABNJ) is a global challenge. The loss of marine biodiversity has been attributed to intensifying human activities on and in the oceans, and the non-participation in and non-compliance by States with international and regional fisheries instruments. The special legal status of the high seas as a global commons also contributes to the difficulties in achieving the conservation and sustainable use of marine biodiversity in ABNJ. With no legal instruments adequately addressing the conservation and sustainable use of marine biodiversity in ABNJ, there is a pressing need to find ways to address obstacles to marine biodiversity conservation in ABNJ. The strengthening of the legal and institutional framework at the regional level provides such an option.

This thesis examines the conservation and sustainable use of marine biodiversity in the high seas from a fisheries-threat perspective, focusing on the ecologically important and productive Southeast Pacific region. Regional cooperation, mainly across sectors, is a key requirement for successful high seas management and the conservation and sustainable use of high seas biodiversity. Regional fisheries management organisations (RFMOs) are key players in this endeavour as they provide a platform for States to cooperate regionally and develop management principles and procedures.

The Southeast Pacific encompasses an area of 30.02 million km² extending from northern Colombia to southern Chile and is the second most productive fisheries region in the world. This thesis examines the adequacy of the regional legal and institutional framework of the Southeast Pacific to address the conservation of high seas biodiversity. In a first step, it critically assesses the level of interaction and cooperation between the three regional fisheries organisations in the region: Inter-American Tropical Tuna Commission (IATTC), South Pacific Regional Fisheries Management Organisation (SPRFMO) and Comisión Permanente del Pacífico Sur (CPPS; Permanent Commission for the South Pacific). It then analyses the extent to which these regional fisheries organisations have incorporated global legal provisions and measures pertinent to the conservation of high seas biodiversity into their conventions and implemented them.

Whilst emphasising the importance of the regional level for the conservation of high seas biodiversity, this thesis identifies key challenges and shortcomings faced by the Southeast Pacific region in inter-institutional cooperation and in the implementation of globally agreed biodiversity conservation measures.

This is the first study of its kind with a focus on RFMO governance from a high seas biodiversity conservation perspective. It is also the first comprehensive regional study focusing on evaluating institutional interplay management, cooperation between RFMOs and regional seas organisations (RSOs) and the incorporation of biodiversity obligations in RFMOs within one region.

This thesis concludes that, although this region has several opportunities to strengthen the conservation and sustainable use of high seas biodiversity, it still has to overcome a range of institutional, cooperative and management challenges. It proposes options to improve the conservation and sustainable use of high seas biodiversity in the Southeast Pacific, ranging from legal, scientific and institutional cooperative mechanisms to the strengthening of conservation and management and compliance and enforcement measures.

RESUMEN

La conservación y utilización sostenible de la biodiversidad en las zonas marinas situadas fuera de los límites de la jurisdicción nacional (ABNJ, por sus siglas en inglés) es un desafío mundial. La pérdida de la biodiversidad marina está atribuida a la intensificación de las actividades humanas en los océanos y a la falta de participación e incumplimiento de los Estados con los instrumentos pesqueros internacionales y regionales. El estado jurídico especial de la alta mar como patrimonio común también contribuye a las dificultades para lograr la conservación y la utilización sostenible de la biodiversidad marina en ABNJ. Sin instrumentos jurídicos que aborden adecuadamente la conservación y la utilización sostenible de la biodiversidad marina en ABNJ se da una urgente necesidad de encontrar medios para hacer frente a los obstáculos de la conservación de la biodiversidad marina en ABNJ. El fortalecimiento del marco legal e institucional a nivel regional ofrece esa opción.

Esta tesis investiga la conservación y la utilización sostenible de la biodiversidad marina en alta mar usando el punto de vista de la pesca como amenaza, centrándose en una región ecológicamente importante y de gran productividad como la del Pacífico Sudeste. La cooperación regional, sobre todo entre los diferentes sectores, es un requisito clave para la gestión exitosa de la alta mar y la conservación y la utilización sostenible de la biodiversidad en alta mar. Las organizaciones regionales de ordenación pesquera (OROP) son actores clave en este esfuerzo porque ofrecen una plataforma de cooperación regional para los Estados, facilitando así el desarrollo de principios y procedimientos de gestión.

El Pacífico Sudeste tiene una superficie de 30.020.000 km² que abarca desde el norte de Colombia hasta el sur de Chile y es la segunda región de pesca más productiva del mundo. Esta tesis examina la adecuación del marco regional jurídico e institucional del Pacífico Sudeste para conservar la biodiversidad en alta mar. Primeramente, esta tesis evalúa críticamente el nivel de interacción y cooperación entre las tres organizaciones regionales de pesca en esta región: la Comisión Interamericana del Atún Tropical (CIAT), la Organización Regional de Ordenación Pesquera del Pacífico Sur (OROP-PS) y la Comisión Permanente del Pacífico Sur (CPPS). Posteriormente, analiza hasta qué punto estas organizaciones regionales de pesca han incorporado en sus convenciones

disposiciones y medidas legales globales adecuadas para la conservación de la biodiversidad en alta mar y si las han implementado. Teniendo en cuenta la importancia del nivel regional para la conservación de la biodiversidad en alta mar, esta tesis identifica los principales retos y debilidades en cooperación interinstitucional y en la implementación de medidas globales por conservar la biodiversidad marina enfrentados por la región del Pacífico Sudeste.

Este es el primer estudio de su tipo con un enfoque en la gobernanza de las OROP desde la perspectiva de la conservación de la biodiversidad en alta mar. También es el primer estudio regional extenso realizado dentro de una región que evalúa la gestión de las interacciones institucionales, la cooperación entre las OROP y los mares regionales del Programa de las Naciones Unidas para el Medio Ambiente (PNUMA), así como la incorporación de obligaciones legales para conservar la biodiversidad marina en las convenciones de las OROP.

Esta tesis concluye que, aunque esta región tiene varias oportunidades para fortalecer la conservación y la utilización sostenible de la biodiversidad en alta mar, todavía tiene que superar una serie de desafíos institucionales, de cooperación y de gestión. Esta tesis propone opciones para mejorar la conservación y la utilización sostenible de la biodiversidad en alta mar en el Pacífico Sudeste. Estas incluyen mecanismos de cooperación jurídica, científica e institucional y el fortalecimiento de las medidas de conservación y gestión, así como las medidas de cumplimiento y ejecución.

ACKNOWLEDGEMENTS

Looking back at my PhD journey, I can say that it has been a challenging one, and even sometimes an emotional roller coaster. But this experience has also been a very enriching and rewarding one. Having the opportunity to dedicate a couple of years to researching my area of interest and, hopefully, to contribute to the knowledge in this field, is something that I am very grateful for. It is my hope that high seas biodiversity conservation will be better integrated within the marine law and policy framework in the future. This is a small contribution towards this step.

I am very grateful to many people who have made this PhD journey an unforgettable experience. I would particularly like to deeply thank my supervisor, *Professor Robin Warner*, for her continued support, guidance, encouragement and help during my PhD candidature. I am very grateful to her for accepting to be my supervisor and guiding me with her expertise through this PhD journey. I am also very thankful to *Dr Pia Winberg* for her guidance and support during the first two years of my candidature.

ANCORS has been a wonderful place to study and I am honoured to have been one of its students. With its multidisciplinary and multicultural environment and the expertise of ANCORS staff, it has provided the perfect setting for me to make the transition from marine science to marine policy. Thank you to all my ANCORS staff colleagues for this. Especially, a big thank you goes to *Ms Myree Mitchell* for taking such good care of us students and for spoiling us. I would also like to thank the *University of Wollongong* for providing me with financial support throughout my PhD studies.

To my fellow students – both those who have already graduated and those who are in the writing process: *Dr Kamal Deen Ali, Mr Ahmad Almaududy (Dudy) Amri, Dr I Made Andi Arsana, Dr Lowell Bautista, Ms Huey-Shian (Elly) Chung, Ms Harriet Harden-Davies, Dr Joytishna Jit, Ms Pakjuta Khemakorn, Dr Wayne Kuo, Mr Shaun Lin, Ms Yu-Ting (Tiff) Lin, Dr Filimon Manoni, Dr Jane Mbendo, Ms Katie O’Neal, Dr Mary Ann Palma-Robles, Ms Genevieve Quirk, Ms Karen Raubenheimer, Dr Mohd Hazmi Bin Mohd Rusli, Dr Yubing Shi, Ms Peta Smith, Dr Josie Tamate, Mr Anh Ton, Ms Candice Visser, and Ms Dazhen (Daisy) Zhang*. Thank you for your support,

encouragement, for making me feel welcome at ANCORS and for all the good times we had together.

I would like to deeply thank *Ms Brooke Campbell* and *Dr Quentin Hanich* for taking the time to discuss my thesis and for their valuable comments on my thesis draft. I would also like to thank *Ms Jacinda Forster* for editing my thesis and *Mr Arturo Mora* for making sure that my Spanish abstract is understandable.

To *Ms Kristina Gjerde* for her passion and dedication to marine conservation, who has inspired me to continue working on high seas biodiversity conservation.

I would like to extend my particular appreciation to *Ms Pauline Cook*, *Ms Erika Haemmig* and *Mr Adolph Hanich* for their invaluable support throughout the PhD process. Thanks also to the *URAC team* for organising such fun bootcamps.

To my Australian family, *Doug, Wyn, Lewis, Meagan and Grandma Cox*, a big thank you from the bottom of my heart! For welcoming me into your family, making me feel at home in Australia, for your continuous support, kindness, generosity and encouragement, and for always being there for me in difficult times.

To all my friends, in Wollongong and abroad, and my host families in Germany and Costa Rica, thank you – *merci* – *danke* – *gracias* – for your continued friendship, messages of support and encouragement, and for making my stay in Australia an unforgettable one.

Finally, and most importantly, I would like to thank my family from the bottom of my heart for their love, support, and encouragement throughout this PhD journey, and for always being there for me. To *Ernest, Cécile and Valérie*, thanks so much for believing in me and allowing me to pursue my dream so far away from home. This means the world to me, *merci*. I am dedicating this work to you.

TABLE OF CONTENTS

Certification	iii
Abstract	v
Resumen	vii
Acknowledgements	ix
Table of Contents	xi
List of Figures	xix
List of Tables	xxi
List of Acronyms	xxv
List of Treaties	xxxix
Chapter 1: Introduction	1
1.1 Biodiversity Loss as an International Concern	1
1.2 Biodiversity Conservation as a Legal Duty	2
1.3 Main Challenges to High Seas Biodiversity Conservation	3
1.4 Regional Approach to High Seas Conservation	4
1.5 Institutionalisation of Conservation and Cooperation Duties	6
1.6 Institutional Interplay Management	7
1.7 Focal Region: The Southeast Pacific	8
1.8 Thesis Scope and Significance of the Research	11
1.9 Thesis Objectives	15
1.10 Area of Focus	15
1.11 Methodology	17
1.12 Thesis Structure	19
Chapter 2: Conservation of High Seas Biodiversity: A Review	25
2.1 Introduction	25
2.2 Oceans and the High Seas	25
2.3 Marine Biodiversity	27
2.3.1 Threats to Marine Biodiversity and Biodiversity Loss	27
2.3.2 Marine Biodiversity in the Southeast Pacific	34

2.3.3 Main Threats to High Seas Biodiversity in the Southeast Pacific	34
2.3.4 Fisheries in the Southeast Pacific	39
2.4 Conservation of High Seas Biodiversity	46
2.4.1 Short Historical Background on Marine Conservation	46
2.4.2 Rapprochement between Fisheries and Biodiversity Governance Streams	48
2.4.3 Definition of Biodiversity Conservation	51
2.5 Challenges to the Conservation of High Seas Biodiversity	54
2.5.1 Fragmented and Sector-based Management of the Oceans	55
2.5.2 Lack of a Comprehensive Legal Framework	57
2.5.3 Lack of Cooperation and Coordination	57
2.5.4 Lack of Implementation, Compliance and Enforcement	58
2.6 Proposed Measures for the Conservation of High Seas Biodiversity	59
2.6.1 Implementing Agreement under the LOSC	59
2.6.2 Strengthening the Institutional Framework	63
2.6.3 Implementation of and Compliance with the Legal Framework	64
2.6.4 Area-based Management Measures	65
2.6.5 Identification of Important Marine Areas	67
2.6.6 Precautionary and Ecosystem Approaches and Environmental Impact Assessments	69
2.6.7 Science, Monitoring, Technology Transfer and Capacity Building	70
2.7 Regional Approach to High Seas Biodiversity Conservation	70
2.7.1 North-East Atlantic	73
2.8 Conclusion	78
 Chapter 3: International Law and Policy Framework for Marine Biodiversity Conservation in ABNJ	 81
3.1 Introduction	81
3.2 Status of ABNJ and its Resources	81
3.3 Global Legal Framework for Marine Biodiversity in ABNJ	87
3.3.1 Legal Framework for the Governance of the High Seas	87
3.3.2 Legal Framework for the Management of Marine Living Resources in ABNJ	92
3.3.2.1 Conservation of Biodiversity as a Common Concern of Humankind	92

3.3.2.2 Protection of the Marine Environment	95
3.3.2.3 Conservation of Living Resources on the High Seas	106
3.3.2.4 Duty to Cooperate	113
3.3.2.5 Further Principles for High Seas Governance	118
3.3.2.6 Enforcement of the Legal Framework	120
3.4 Conclusion	125
 Chapter 4: The Regional Institutional Framework for the Conservation of High Seas Biodiversity of the Southeast Pacific	 127
4.1 Introduction	127
4.2 Regional Institutionalisation of the Cooperation and Conservation Duties	128
4.2.1 Regional Seas Organisations	131
4.2.2 Regional Fisheries Management Organisations	134
4.2.2.1 Rights and Duties of Members of RFMOs	140
4.2.2.2 Rights and Duties of Non-Members to RFMOs	142
4.2.2.3 Cooperation among and between Regional Institutions and other International Bodies	145
4.3 Regional Institutional Framework of the Southeast Pacific	146
4.3.1 Inter-American Tropical Tuna Commission (IATTC)	146
4.3.2 Comisión Permanente del Pacífico Sur (CPPS)	150
4.3.3 South Pacific Regional Fisheries Management Organisation (SPRFMO)	158
4.4 Role and Appropriateness of RFMOs to Conserve High Seas Biodiversity	161
4.5 Regional Institutional Interplay	163
4.5.1 Stages and Pathways of Institutional Interplay	166
4.5.2 Cooperative Mechanisms for Institutional Interplay Management	167
4.5.3 Risks Linked to Institutional Interplay Management	170
4.5.4 Example of Institutional Interplay: North-East Atlantic	172
4.6 Interplay between the three Regional Institutions of the Southeast Pacific	173
4.6.1 Geographical Scope	174
4.6.2 Mandate and Objectives	176
4.6.3 Membership	177
4.6.4 Decision-Making	180
4.6.5 Cooperation between Regional Institutions of the Southeast Pacific	184

4.6.5.1 Meeting Attendance	185
4.6.5.2 Memoranda of Understanding and Memoranda of Cooperation	186
4.6.5.3 Information and Data Exchanges	189
4.7 Conclusion	189

Chapter 5: Methodological Background to the Regional Institutional Analysis on the Duty to Conserve 191

5.1 Introduction	191
5.2 Studies on RFMO Performance and Practice	191
5.3 Uniqueness and Particularities of this Thesis	194
5.4 Analysis Methodology	195
5.5 Global Legal Provisions: Scientific Data	200
5.6 Global Legal Provisions: Fisheries Measures	201
5.6.1 Conservation Measures for Fisheries	203
5.6.2 Impact Minimisation Measures for Fisheries	204
5.6.3 Enforcement and Compliance Measures for Fisheries	208
5.7 Global Legal Provisions: Biodiversity Measures	214
5.7.1 Conservation Measures for Biodiversity	216
5.7.2 Impact Minimisation Measures for Biodiversity	220
5.7.3 Monitoring Measures for Biodiversity	223
5.8 Global Legal Provisions: Marine Environmental Protection	223
5.9 Conclusion	225

Chapter 6: Challenges in the Regional Application of Global Measures for the Conservation of High Seas Biodiversity of the Southeast Pacific 227

6.1 Introduction	227
6.2 Analysis Details	227
6.2.1 Result Sections	227
6.2.2 RFMO Information	228
6.2.3 Traffic Light Methodology	228
6.2.4 Particularity of the Comisión Permanente del Pacífico Sur (CPPS)	230
6.3 General Legal Provisions for the Conservation of Biodiversity	232
6.3.1 General Legal Provisions under the LOSC	232

6.3.2 Fisheries Measures	236
6.3.3 Biodiversity Measures	245
6.3.4 Scientific Data	248
6.3.5 Marine Environmental Protection Measures	251
6.3.6 Discussion	252
6.4 Global Legal Provisions for the Conservation of Biodiversity aimed at Institutions	254
6.4.1 General Legal Provisions under the LOSC	254
6.4.2 Scientific Data	255
6.4.3 Fisheries Measures	257
6.4.4 Discussion	260
6.5 Implementation of Global Legal Provisions for the Conservation of Biodiversity	262
6.5.1 Inter-American Tropical Tuna Commission (IATTC)	262
6.5.1.1 General Legal Provisions under the LOSC	263
6.5.1.2 Fisheries Measures	264
6.5.1.3 Biodiversity Measures	271
6.5.1.4 Scientific Data	272
6.5.1.5 Marine Environmental Protection Measures	275
6.5.1.6 Compliance with IATTC measures	275
6.5.2 South Pacific Regional Fisheries Management Organisation (SPRFMO)	279
6.5.2.1 General Legal Provisions	279
6.5.2.2 Fisheries Measures	280
6.5.2.3 Biodiversity Measures	285
6.5.2.4 Scientific Data	287
6.5.2.5 Marine Environmental Protection Measures	289
6.5.2.6 Compliance with SPRFMO measures	290
6.6 Conclusion	291
Chapter 7: Options and Recommendations to Strengthen Institutional Cooperation and High Seas Biodiversity Conservation in the Southeast Pacific	293
7.1 Introduction	293

7.2 Cooperation, Coordination and Collaboration Challenges between the three Regional Institutions	294
7.3 Options and Recommendations for Improved Cooperation and Collaboration between the three Regional Institutions	299
7.3.1 Cooperation under Differing Membership	303
7.3.2 Cooperation through Agreement	304
7.3.3 Cooperation of a Scientific Nature	308
7.3.4 Cooperation of Institutional Nature	311
7.4 Challenges in the Adoption and Implementation of Conservation and Management Measures for High Seas Biodiversity Conservation	314
7.5 Options and Recommendations on Conservation and Management Measures	317
7.6 Challenges in Compliance with and Enforcement of Management Measures adopted by the three Regional Institutions	321
7.7 Options and Recommendations on Compliance and Enforcement Measures	323
7.8 Conclusion	324
Chapter 8: Conclusion	327
8.1 Study Background	327
8.2 Key Findings for the Southeast Pacific	328
8.2.1 General Key Findings	328
8.2.2 Specific Key Findings Relating to Cooperation	329
8.2.3 Specific Key Findings Relating to Conservation Measures	330
8.2.4 Specific Key Findings Relating to Compliance Measures	331
8.3 Proposed Options and Ways to Strengthen the Current Regional Framework of the Southeast Pacific	332
8.3.1 Recommendations on Strengthening Cooperation	332
8.3.2 Recommendations on Strengthening Conservation	334
8.3.3 Recommendations on Strengthening Compliance	334
8.4 Recommendations for Further Studies	335
8.5 Priorities for the Southeast Pacific	336
8.6 Conclusion	336

Bibliography	339
A. Books	339
B. Book Chapters	340
C. Journal Articles	346
D. Reports	362
E. Cases	368
F. Legislation	369
G. Declarations	370
H. IATTC Documents	371
I. CPPS Documents	379
J. SPRFMO Documents	380
K. United Nations Documents	382
L. Other Documents	393
M. Selected Websites	399
 Appendix A: List of States that are fishing in the Southeast Pacific with their Catch Data and RFMO Membership	 403
Appendix B: List of States that have fished in the Southeast Pacific with their Catch Data and RFMO Membership	407
Appendix C: List of States that are fishing in the Southeast Pacific with their Main Treaty Membership	413
Appendix D: List of States that have fished in the Southeast Pacific with their Main Treaty Membership	415
Appendix E: Summary Table of Identified Opportunities and Challenges in Collaboration for Inter-Institutional Cooperation	419
Appendix F: Summary Table of Identified Opportunities and Challenges in Conservation for Inter-Institutional Cooperation	423
Appendix G: Summary Table of Identified Opportunities and Challenges in Compliance for Inter-Institutional Cooperation	431
Appendix H: Comparative Table Summarising the Integration of Global Legal Measures Aimed at States into IATTC, CPPS and SPRFMO's Conventions	437
Appendix I: Comparative Table Summarising the Integration of Global Legal Measures Aimed at Institutions into IATTC, CPPS and SPRFMO's	439

Conventions

Appendix J: Comparative Table Summarising the Integration of Global Legal 441

Measures Aimed at States into IATTC's Convention and their Implementation
by IATTC

Appendix K: Comparative Table Summarising the Integration of Global Legal 443

Measures Aimed at Institutions into IATTC's Convention and their
Implementation by IATTC

Appendix L: Comparative Table Summarising the Integration of Global Legal 445

Measures Aimed at States into SPRFMO's Convention and their
Implementation by SPRFMO

Appendix M: Comparative Table Summarising the Integration of Global Legal 447

Measures Aimed at Institutions into SPRFMO's Convention and their
Implementation by SPRFMO

LIST OF FIGURES

Figure 1.1:	Extent of the FAO Major Fishing Area for Statistical Purposes No. 87.....	9
Figure 1.2:	Extent of Study Area in the Pacific Ocean.....	12
Figure 2.1:	The Extent of the High Seas.....	26
Figure 2.2:	Total Catch Trend for the Southeast Pacific Region (1950-2012)	35
Figure 2.3:	Catch Effort and Total Landings in Tonnes per Year for the Eastern Pacific.....	36
Figure 2.4:	Ports, Load Transferred and Intensity of Maritime Traffic in the Eastern Pacific.....	37
Figure 2.5:	Cumulative Impacts of Anthropogenic Activities in the Eastern Pacific.....	38
Figure 2.6:	Top Ten Marine Species caught in the FAO Statistical Area No. 87 in 2012 with their Respective Percentage Numbers.....	40
Figure 2.7:	Top Ten Oceanic Species caught in the FAO Statistical Area No. 87 in 2012 with their Respective Percentage Numbers.....	42
Figure 2.8:	Percentage of 2012 Catch for Key States fishing in the Southeast Pacific.....	44
Figure 2.9:	Percentage of 2012 Catch for DWFNs in the Southeast Pacific.....	45
Figure 2.10:	Summarised Schematic Diagram of International Ocean Governance.....	55
Figure 2.11:	Map showing the Extent of Current High Seas MPAs and Fisheries Closure Areas.....	66
Figure 3.1:	The Various Legally Defined Maritime Zones.....	82
Figure 4.1:	Overview of the Geographical Distribution of RSOs.....	132
Figure 4.2:	Geographical Coverage of RFMOs Responsible for the Management of Tuna and Tuna-like Species.....	139
Figure 4.3:	Geographical Coverage of RFMOs Responsible for the Management of Non-Tuna like Species.....	139
Figure 4.4:	IATTC Convention Area covers both Areas within and beyond National Jurisdiction.....	148
Figure 4.5:	CPPS Convention Area covers Areas within National Jurisdiction	151

Figure 4.6:	SPRFMO Convention Area covers ABNJ.....	160
Figure 4.7:	Geographical Scope of the Regional Institutions in the Southeast Pacific in comparison to the FAO Statistical Area No. 87.....	175
Figure 5.1:	Legal Provisions to be Implemented by States for the Conservation of High Seas Biodiversity.....	199
Figure 5.2:	General Legal Measures Regarding Scientific Data.....	201
Figure 5.3:	Subjective Categorisation of Fisheries Measures for the Purpose of the Analysis.....	202
Figure 5.4:	Categorisation of Conservation Measures for Fisheries.....	204
Figure 5.5:	Categorisation of Impact Minimisation Measures for Fisheries.....	205
Figure 5.6:	Categorisation of Enforcement and Compliance Measures for Fisheries.....	209
Figure 5.7:	Subjective Categorisation of Biodiversity Measures for the Purpose of the Analysis.....	216
Figure 5.8:	Categorisation of Conservation Measures for Biodiversity.....	216
Figure 5.9:	Categorisation of Impact Minimisation Measures for Biodiversity..	221

LIST OF TABLES

Table 1.1:	Main Line of Argument.....	20
Table 4.1:	Common Member States between IATTC and SPRFMO.....	180
Table 4.2:	List of IATTC and SPRFMO States and their Treaty Membership....	183
Table 5.1:	Categorisation of Fisheries Measures for Pollution, Waste, Discards and Bycatch Minimisation.....	206
Table 5.2:	Categorisation of Fisheries Measures for the Prevention and Elimination of Overfishing and Excess Fishing Capacity.....	207
Table 5.3:	Categorisation of Fisheries Measures for the Application of the Precautionary Approach.....	208
Table 5.4:	Categorisation of Fisheries Measures for the Promotion of the Effectiveness of Regional and Global Conservation and Management Measures.....	210
Table 5.5:	Categorisation of Fisheries Measures for Effective Monitoring, Control and Surveillance.....	211
Table 5.6:	Categorisation of Fisheries Measures for the Enforcement of Regional Conservation and Management Measures.....	212
Table 5.7:	Categorisation of Enforcement and Compliance Fisheries Measures.....	214
Table 5.8:	Categorisation of Biodiversity Measures for Area-Based Management.....	217
Table 5.9:	Categorisation of Biodiversity Measures for Endangered and Threatened Species.....	219
Table 5.10:	Categorisation of Biodiversity Measures for the Prevention of Impacts on the Use of Biological Resources.....	221
Table 5.11:	Categorisation of Biodiversity Measures for the Prevention of Significant Adverse Impacts.....	222
Table 5.12:	Categorisation of Biodiversity Measures for Alien Species.....	223
Table 5.13:	Categorisation of Biodiversity Measures for Identification and Monitoring.....	223
Table 5.14:	Categorisation of Marine Environmental Protection Measures.....	224

Table 6.1:	Summary of the General Global Legal Provisions described in Chapter 5 and To What Extent the three Institutions' Constitutions Fulfil Them.....	232
Table 6.2:	Summary of the Fisheries Measures described in Chapter 5 and To What Extent the three Institutions' Constitutions Fulfil Them.....	236
Table 6.3:	Summary of the Biodiversity Measures described in Chapter 5 and To What Extent the three Institutions' Constitutions Fulfil Them....	245
Table 6.4:	Summary of the Scientific Data Provisions described in Chapter 5 and To What Extent the three Institutions' Constitutions Fulfil Them.....	249
Table 6.5:	Summary of the Marine Environmental Protection Provisions described in Chapter 5 and To What Extent the three Institutions' Constitutions Fulfil Them.....	251
Table 6.6:	Score Recapitulative Table for Tables 6.1 to 6.5.....	252
Table 6.7:	Summary of the General Global Legal Provisions aimed at Institutions and To What Extent the three Institutions' Constitutions Fulfil Them.....	255
Table 6.8:	Summary of the Provisions on Scientific Data aimed at Institutions and To What Extent the three Institutions' Constitutions Fulfil Them.....	255
Table 6.9:	Summary of the Fisheries Measures aimed at Institutions and To What Extent the three Institutions' Constitutions Fulfil Them.....	257
Table 6.10:	Score Recapitulative Table for Tables 6.7 to 6.9.....	261
Table 6.11:	Implementation of General Measures by IATTC.....	263
Table 6.12:	Implementation of Fisheries Measures by IATTC.....	264
Table 6.13:	Implementation of Biodiversity Measures by IATTC.....	271
Table 6.14:	Implementation of Scientific Data Measures by IATTC.....	273
Table 6.15:	Implementation of Marine Environmental Protection Measures by IATTC.....	275
Table 6.16:	Implementation of General Measures by SPRFMO.....	279
Table 6.17:	Implementation of Fisheries Measures by SPRFMO.....	280
Table 6.18:	Implementation of Biodiversity Measures by SPRFMO.....	285
Table 6.19:	Implementation of Scientific Data Measures by SPRFMO.....	287

Table 6.20:	Implementation of Marine Environmental Protection Measures by SPRFMO.....	289
--------------------	--	-----

LIST OF ACRONYMS

ABNJ	Areas Beyond National Jurisdiction
ACAP	Agreement on the Conservation of Albatrosses and Petrels
AIDCP	Agreement on the International Dolphin Conservation Program
APFIC	Asia-Pacific Fishery Commission
BBNJ	Ad Hoc Open-ended Informal Working Group to Study Issues Relating to the Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction
BOBP-IGO	Bay of Bengal Programme Inter-Governmental Organisation
CBD	Convention on Biological Diversity
CCAMLR	Commission on the Conservation of Antarctic Marine Living Resources
CCBSP	Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
CECAF	Fishery Committee for the Eastern Central Atlantic
CI	Conservation International
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLCS	Commission on the Limits of the Continental Shelf
CMM	Conservation and Management Measure
CMS	Convention on the Conservation of Migratory Species of Wild Animals
COFI	FAO Committee on Fisheries

COMHAFAT-ATLAFCO	Ministerial Conference on Fisheries Cooperation among African States Bordering the Atlantic
COP	Conference of the Parties
COREP	Regional Fisheries Committee for the Gulf of Guinea
CPPS	Comisión Permanente del Pacífico Sur (Permanent Commission for the South Pacific)
CRFM	Caribbean Regional Fisheries Mechanism
CTC	Compliance and Technical Committee
CTMFM	Joint Technical Commission of the Maritime Front
DWFN	Distant Water Fishing Nation
EAF	Ecosystem Approach to Fisheries
EBSA	Ecologically or Biologically Significant Area
EC	European Community
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
ENSO	El Niño-Southern Oscillation
EPO	Eastern Pacific Ocean
ERFEN	Estudio Regional del Fenómeno El Niño
EU	European Union
FAD	Fish Aggregating Device
FAO	Food and Agriculture Organization
FCWC	Fishery Committee of the West Central Gulf of Guinea
FFA	Pacific Islands Forum Fisheries Agency
FMO	Fisheries Management Organisation
GEF	Global Environment Facility
GFCM	General Fisheries Commission for the Mediterranean
GOOS	Global Ocean Observing System
GRASP	GOOS Regional Alliance for the Southeast Pacific
IAC	Inter-American Convention for the Protection and Conservation of Sea Turtles
IATTC	Inter-American Tropical Tuna Commission

ICAO	International Civil Aviation Organization
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICES	International Council for the Exploration of the Sea
ICJ	International Court of Justice
IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Commission
IOTC	Indian Ocean Tuna Commission
IPHC	International Pacific Halibut Commission
IPOA	International Plan of Action
ISA	International Seabed Authority
ITLOS	International Tribunal for the Law of the Sea
IUCN	International Union for Conservation of Nature
IUU Fishing	Illegal, Unreported and Unregulated Fishing
IWC	International Whaling Commission
JointFish	Joint Norwegian-Russian Fisheries Commission
JPOI	Johannesburg Plan of Implementation
LOSC	United Nations Law of the Sea Convention
MCS	Monitoring, Control and Surveillance
MoC	Memorandum of Cooperation
MoU	Memorandum of Understanding
MPA	Marine Protected Area
MSC	Marine Stewardship Council
MSY	Maximum Sustainable Yield
NAFO	Northwest Atlantic Fisheries Organization
NAMMCO	North Atlantic Marine Mammal Commission
NASCO	North Atlantic Salmon Conservation Organization
NEAFC	North-East Atlantic Fisheries Commission
NEPA	US National Environmental Policy Act
NPAFC	North Pacific Anadromous Fish Commission
NPFC	North Pacific Fisheries Commission

OLDEPESCA	Organización Latinoamericana de Desarrollo Pesquero (Latin American Organization for Fisheries Development)
OSPAR	Commission for the Protection of the Marine Environment of the North-East Atlantic
OSPESCA	Organización del Sector Pesquero y Acuícola del Istmo Centroamericano (Central American Fisheries and Aquaculture Organization)
PERSGA	Regional Organisation for the Conservation of the Environment of the Red Sea and Gulf of Aden
PICES	North Pacific Marine Science Organization
PSC	Pacific Salmon Commission
PSSA	Particularly Sensitive Sea Area
RECOFI	Regional Commission for Fisheries
RFA	Regional Fisheries Arrangement
RFB	Regional Fisheries Body
RFMA	Regional Fisheries Management Arrangement
RFMO	Regional Fisheries Management Organisation
RFO	Regional Fisheries Organisation
RSN	Regional Fishery Body Secretariats Network
RSO	Regional Seas Organisation
RSP	Regional Seas Programme
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SEA	Strategic Environmental Assessment
SEAFDEC	Southeast Asian Fisheries Development Center
SEAFO	South East Atlantic Fisheries Organisation
SIOFA	South Indian Ocean Fisheries Agreement
SOFIA	FAO State of World Fisheries and Agriculture Report
SPC	Secretariat of the Pacific Community
SPREP	Secretariat of the South Pacific Regional Environment Programme

SPRFMO	South Pacific Regional Fisheries Management Organisation
SRFC	Subregional Fisheries Commission
SST	Sea Surface Temperature
SWIOFC	Southwest Indian Ocean Fisheries Commission
TAC	Total Allowable Catch
TEEB	The Economics of Ecosystems and Biodiversity
UK	United Kingdom of Great Britain and Northern Ireland
UN	United Nations
UNCLOS	United Nations Conference on the Law of the Sea
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFSA	United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks
UNGA	United Nations General Assembly
USA	United States of America
VME	Vulnerable Marine Ecosystem
VMS	Vessel Monitoring System
WCPFC	Western and Central Pacific Fisheries Commission
WECAFC	Western Central Atlantic Fishery Commission
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization
WWF	World Wide Fund for Nature

LIST OF TREATIES

Acuerdo Marco para la Conservación de los Recursos Vivos Marinos en la Alta Mar del Pacífico Sudeste [Framework Agreement for the Conservation of Living Marine Resources on the High Seas of the South Pacific], opened for signature 14 August 2000 (not yet in force)

Acuerdo sobre la Cooperación Regional para el Combate contra la Contaminación del Pacífico Sudeste por Hidrocarburos y otras Sustancias Nocivas en Casos de Emergencia [Agreement on Regional Cooperation in Combating Pollution of the Southeast Pacific by Hydrocarbons or other Harmful Substances in Cases of Emergency], opened for signature 12 November 1981 (entered into force 7 February 1988)

Agreement in the Form of an Exchange of Letters between the European Union and the Republic of Chile on the Provisional Application of the Understanding Concerning the Conservation of Swordfish Stocks in the South-Eastern Pacific Ocean, opened for signature 20 June 2010 (entered into force 20 June 2010)

Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, opened for signature 22 November 2009 (not yet in force)

Agreement on the Conservation of Albatrosses and Petrels, opened for signature 19 June 2001, ATS 5 (entered into force 1 February 2004)

Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, opened for signature 29 November 1993, ATS 26 (entered into force 24 April 2003)

Charter of the United Nations and Statute of the International Court of Justice, opened for signature 26 June 1945, ATS 1 (entered into force 24 October 1945)

Convención sobre Personalidad Jurídica Internacional de la Comisión Permanente del Pacífico Sur [Convention on International Legal Personality of the Permanent Commission for the South Pacific], opened for signature 14 January 1966

Convenio para la Protección del Medio Marino y la Zona Costera del Pacífico Sudeste [Convention for the Protection of the Marine Environment and Coastal Area of the Southeast Pacific], opened for signature 12 November 1981 (entered into force 19 May 1986)

Convenio sobre Medidas de Vigilancia y Control de las Zonas Marítimas de los Países Signatarios [Convention on Measures of Surveillance and Control of Maritime Zones of the Signatory Countries], opened for signature 4 December 1954

Convenio sobre Organización de la Comisión Permanente de la Conferencia sobre Explotación y Conservación de las Riquezas Marítimas del Pacífico Sur [Convention on the Organisation of the Permanent Commission of the Conference on Exploitation and Conservation of Marine Resources of the South Pacific], opened for signature 18 August 1952 (entered into force 6 May 1955)

Convenio sobre Otorgamiento de Permisos para la Explotación de las Riquezas del Pacífico Sur [Convention on the Licensing of Permits for the Exploitation of Resources of the South Pacific], opened for signature 4 December 1954 (entered into force 9 March 1956)

Convenio sobre Sistema de Sanciones [Convention on Sanctions Systems], opened for signature 4 December 1954

Convention for the Establishment of an Inter-American Tropical Tuna Commission, opened for signature 31 May 1949 (entered into force 3 March 1950)

Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft, opened for signature 15 February 1972 (entered into force 7 April 1974)

Convention for the Prevention of Marine Pollution from Land-Based Sources, opened for signature 4 June 1974, 13 ILM 352 (entered into force 6 May 1978)

Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, opened for signature 24 March 1983, 22 ILM 221 (entered into force 11 October 1986)

Convention for the Protection of the Marine Environment of the North-East Atlantic, opened for signature 22 September 1992, 32 ILM 1072 (entered into force 25 March 1998)

Convention for the Protection of the Mediterranean Sea against Pollution, opened for signature 16 February 1976, 15 ILM 290 (entered into force 12 February 1978)

Convention for the Protection of the Natural Resources and Environment of the South Pacific Region, opened for signature 24 November 1986, ATS 31 (entered into force 22 August 1990)

Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region, opened for signature 21 June 1985 (entered into force 30 May 1996)

Convention for the Strengthening of the Inter-American Tropical Tuna Commission established by the 1949 Convention between the United States of America and the Republic of Costa Rica, opened for signature 27 June 2003 (entered into force 27 August 2010)

Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, opened for signature 25 June 1998, 38 ILM 517 (entered into force 30 October 2001)

Convention on Biological Diversity, opened for signature 5 June 1992, ATS 32 (entered into force 29 December 1993)

Convention on Environmental Impact Assessment in a Transboundary Context, opened for signature 25 February 1991, 30 ILM 802 (entered into force 10 September 1997)

Convention on Fishing and Conservation of the Living Resources of the High Seas, opened for signature on 29 April 1958, ATS 12 (entered into force 20 March 1966)

Convention on Future Multilateral Cooperation in North East Atlantic Fisheries, opened for signature 18 November 1980, 2 SMTE (entered into force 17 March 1982)

Convention on International Trade in Endangered Species of Wild Fauna and Flora, opened for signature 3 March 1973, ATS 29 (entered into force 1 July 1975)

Convention on Long-range Transboundary Air Pollution, opened for signature 13 November 1979, 18 ILM 1442 (entered into force 16 March 1983)

Convention on the Conservation and Management of High Seas Fishery Resources in the South Pacific Ocean, opened for signature 14 November 2009, ATS 28 (entered into force 24 August 2012) corrected in 2010

Convention on the Conservation of Antarctic Marine Living Resources, opened for signature 20 May 1980, ATS 9 (entered into force 7 April 1982)

Convention on the Conservation of Migratory Species of Wild Animals, opened for signature on 23 June 1979, ATS 32 (entered into force 11 January 1983)

Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, opened for signature 22 March 1989, ATS 7 (entered into force 5 May 1992)

Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, opened for signature 13 November 1972, ATS 16 (entered into force 30 August 1975)

Eastern Pacific Ocean Tuna Fishing Agreement, opened for signature 15 March 1983 (not yet in force)

Inter-American Convention for the Protection and Conservation of Sea Turtles, opened for signature 1 December 1996, UNTS I-37791 (entered into force 2 May 2001)

International Convention for the Control and Management of Ships' Ballast Water and Sediments, opened for signature 13 February 2004 (not yet in force)

International Convention for the Prevention of Pollution from Ships, opened for signature 2 November 1973, 12 ILM 1319 (entered into force 2 October 1983)

International Convention for the Prevention of Pollution from Ships as modified by the Protocol of 1978, opened for signature 17 February 1978, ATS 9 (entered into force 2 October 1983)

International Convention for the Regulation of Whaling, opened for signature 2 December 1946, ATS 18 (entered into force 10 November 1948) amended in 1956

International Convention for the Safety of Life at Sea, opened for signature 1 November 1974, 1184 UNTS 2 (entered into force 25 May 1980)

International Convention on Oil Pollution Preparedness, Response and Co-operation, opened for signature 30 November 1990, ATS 12 (entered into force 13 May 1995)

La Jolla Agreement for the Reduction of Dolphin Mortality in the Eastern Pacific Ocean, opened for signature 21 April 1992 (entered into force 21 April 1992)

Protocol Concerning Protected Areas and Wild Fauna and Flora in the Eastern African Region, opened for signature 21 June 1985 (entered into force 30 May 1996)

Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean, opened for signature 10 June 1995, 6 YbIEL 887 (entered into force 12 December 1999)

Protocol Concerning Specially Protected Areas and Wildlife to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, opened for signature 18 January 1990, 19 EPL 224 (entered into force 18 June 2000)

Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships of 2 November 1973, as modified by the Protocol of 17 February 1978, opened for signature 26 September 1997, ATS 37 (entered into force 19 May 2005)

Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context, opened for signature 21 May 2003, UNTS 2685 (entered into force 11 July 2010)

Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, opened for signature 7 November 1996, 36 ILM 1 (entered into force 24 March 2006) amended in 2006

Protocolo Complementario del Acuerdo sobre Cooperación Regional para el Combate contra la Contaminación del Pacífico Sudeste por Hidrocarburos y otras Sustancias Nocivas [Supplementary Protocol to the Agreement on Regional Cooperation in Combating Pollution of the Southeast Pacific by Hydrocarbons or other Harmful Substances], opened for signature 22 July 1983 (entered into force 20 May 1987)

Protocolo Modificadorio del Acuerdo Marco para la Conservación de los Recursos Vivos Marinos en la Alta Mar del Pacífico Sudeste Acuerdo de Galápagos [Modificatory Protocol to the Framework Agreement for the Conservation of Living Marine Resources on the High Seas of the South Pacific], opened for signature 27 November 2003 (not yet in force)

Protocolo para la Conservación y Administracion de las Áreas Marinas y Costeras Protegidas del Pacífico Sudeste [Protocol for the Conservation and Management of Protected Marine and Coastal Areas of the Southeast Pacific], opened for signature 21 September 1989 (entered into force 24 January 1995)

Protocolo para la Protección del Pacífico Sudeste contra la Contaminación Radiactiva [Protocol for the Protection of the Southeast Pacific against Radioactive Pollution], opened for signature 21 September 1989 (entered into force 24 January 1995)

Protocolo para la Protección del Pacífico Sudeste contra la Contaminación Proveniente de Fuentes Terrestres [Protocol for the Protection of Southeast Pacific against Pollution from Land-Based Sources], opened for signature 22 July 1983 (entered into force 23 September 1986)

Protocolo Sobre el Programa Para el Estudio Regional del Fenómeno El Niño en el Pacífico Sudeste [Protocol Concerning the Regional Programme for the Study of El Niño in the Southeast Pacific], opened for signature 6 November 1992

United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, opened for signature 8 September 1995, ATS 8 (entered into force 11 December 2001)

United Nations Convention on the High Seas, opened for signature 29 April 1958, ATS 12 (entered into force 30 September 1962)

United Nations Convention on the Law of the Sea, opened for signature 10 December 1982, ATS 31 (entered into force 16 November 1994)

Vienna Convention on the Law of Treaties, opened for signature 23 May 1969, ATS 2 (entered into force 27 January 1980)

1 INTRODUCTION

1.1 Biodiversity Loss as an International Concern

Biodiversity, that is the variety of life at the genetic, species and ecosystem levels, underpins many key ecosystem functions and plays a vital role in sustaining life on Earth.¹ According to the most recent Global Biodiversity Outlook, biodiversity loss is increasing globally due to growing human pressures on the environment and has been shown to lead to a loss or reduction in the provision of ecosystem services.² Biodiversity loss has been highlighted as a great concern by the international community, which recognises the importance of and urgent need to conserve and sustainably use biodiversity.³

On the high seas, legally defined as the water column beyond the national jurisdiction of States and representing 64 per cent of the oceans' surface, biodiversity decline has been attributed to a number of factors.⁴ These include the continuous intensification of pressures resulting from an increasing number of human activities conducted in these waters but also in the deep seas and in coastal areas, and the relative slow recovery capacity of these areas. Other influencing factors include the non-compliance and non-participation of States in international and regional fisheries instruments.⁵

¹ See, eg: Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 30 June 2011 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/66/119, United Nations General Assembly, 66th sess, Item 77(a) of the preliminary list (30 June 2011) ('2011 BBNJ Report') para 8. See Section 3.3.2.1 of Chapter 3 for a detailed legal definition and explanation of biodiversity.

² Secretariat of the Convention on Biological Diversity, 'Global Biodiversity Outlook 4' (Report, CBD, 2014). See, eg: Aðalheiður Jóhannsdóttir, Ian Cresswell and Peter Bridgewater, 'The Current Framework for International Governance of Biodiversity: Is It Doing More Harm Than Good?' (2010) 19(2) *Reciel* 139; F Stuart Chapin III et al, 'Consequences of Changing Biodiversity' (2000) 405 *Nature* 234; Boris Worm et al, 'Impacts of Biodiversity Loss on Ocean Ecosystem Services' (2006) 314 *Science* 787; Enric Sala and Nancy Knowlton, 'Global Marine Biodiversity Trends' (2006) 31 *Annual Review of Environment and Resources* 93; Millennium Ecosystem Assessment, 'Ecosystems and Human Well-being: Biodiversity Synthesis' (Report, World Resources Institute, 2005); UNEP, 'Global Environment Outlook (GEO-5): Environment for the Future We Want' (Report, UNEP, 2012).

³ See, eg: Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 5 May 2014 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/69/82, United Nations General Assembly, 69th sess, Item 75(a) of the preliminary list (5 May 2014) ('2014a BBNJ Report') para 8 and para 9; Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 25 July 2014 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/69/177, United Nations General Assembly, 69th sess, Item 75(a) of the preliminary list (23 July 2014) ('2014b BBNJ Report') para 8; United Nations General Assembly, *The Future We Want*, GA Res 66/288, 66th sess, Agenda Item 19, A/RES/66/288 (11 September 2012) ('*The Future We Want*') para 158 and 163.

⁴ *United Nations Convention on the Law of the Sea*, opened for signature 10 December 1982, ATS 31 (entered into force 16 November 1994) ('*LOS*') art 86. In this provision, the high seas are legally defined as: 'all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State'.

⁵ See, eg: Global Ocean Commission, 'From Decline to Recovery: A Rescue Package for the Global Ocean' (Report, Global Ocean Commission, 2014) 4; Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 16 March 2010 from the Co-Chairpersons of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/65/68, United Nations General Assembly, 65th sess, Item 75(a) of the preliminary list (17 March 2010) ('2010 BBNJ Report') para 28. An extensive legal definition of the high seas and marine areas beyond national jurisdiction (ABNJ) is provided in Section 3.2 of Chapter 3.

Overfishing and destructive fishing practices are widely recognised as the main threat to marine biodiversity in areas beyond national jurisdiction (ABNJ).⁶ Destructive fishing practices include driftnet fishing and bottom trawling, and the conduct of illegal, unreported and unregulated (IUU) fishing is still widespread. Unsustainable and poorly managed fisheries lead to the destruction of important habitats and overexploitation and depletion of marine resources, hence impacting on the balance and sustainability of marine ecosystems with potentially large societal impact consequences. Other current and potential pressures on high seas ecosystems arise from the impacts of global climate change, marine debris, ship source pollution, noise pollution, land-based pollution, pollution from other sea-based activities, ocean fertilisation, CO₂ sequestration, offshore oil and gas exploitation, the laying of pipelines, seabed mining, bio-prospecting and marine scientific research.⁷ A global map of the cumulative impacts of human activities on the marine environment published by Halpern et al emphasises the interrelation between oceans and their ecosystems and shows that human impacts on the marine environment are global rather than localised.⁸

1.2 Biodiversity Conservation as a Legal Duty

The conservation and sustainable use of biodiversity has become a legal duty under international law through the 1992 adoption of the *Convention on Biological Diversity* (CBD), involving a global responsibility to be borne by all States.⁹ Given the conceptual nature of biodiversity, legal obligations towards its conservation can only be achieved through the conservation and sustainable use of its tangible components, namely biological resources and ecosystems.¹⁰ Therefore, the basis under international law for the conservation and sustainable use of high seas biodiversity is provided by

⁶ See, eg: 2014a *BBNJ Report* para. 10; Kristina M Gjerde et al, 'Ocean in Peril: Reforming the Management of Global Ocean Living Resources in Areas Beyond National Jurisdiction' (2013) 74 *Marine Pollution Bulletin* 540; Glen Wright et al, 'The Scores at Half Time: An Update on the International Discussions on the Governance of Marine Biodiversity in Areas Beyond National Jurisdiction' (IDDRI Issue Brief No 02/14, IDDRI, 2014).

⁷ See, eg: Juan Manuel Gómez-Robledo and Robert Hill, *Letter dated 15 May 2008 from the Co-Chairpersons of the Ad Hoc Open-ended Informal Working Group to Study Issues Relating to the Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction Addressed to the President of the General Assembly, A/63/79*, United Nations General Assembly, 63rd sess, Item 73 of the preliminary list (16 May 2008) ('2008 BBNJ Report') para 13 and para 18; 2014b *BBNJ Report* para 8; Benjamin S Halpern et al, 'A Global Map of Human Impact on Marine Ecosystems' (2008) 319(5865) *Science* 948; Arianna Broggiato, 'Traditional and New Challenges to the Marine Environment' (2008) 38(6) *Environmental Policy and Law* 319; Duncan E J Currie and Kateryna Wowk, 'Climate Change and CO₂ in the Oceans and Global Oceans Governance' (2009) 4 *Carbon and Climate Law Review* 387.

⁸ Halpern et al, above n 6.

⁹ Alexandre Kiss and Dinah Shelton, *Guide to International Environmental Law* (Martinus Nijhoff, 2007), 14; *Convention on Biological Diversity*, opened for signature 5 June 1992, ATS 32 (entered into force 29 December 1993) ('CBD').

¹⁰ Lyle Glowka et al, 'A Guide to the Convention on Biological Diversity' (Report, IUCN, 1994) 16. See Section 3.3.2.1 of Chapter 3 for definitions of biological resources and ecosystems.

States' duty to conserve high seas living resources;¹¹ the general obligation of customary international law for States to protect the marine environment and to safeguard it from harm resulting from human activities;¹² and by the customary international law obligation for States to cooperate to these ends.¹³

The legal status of the high seas as global commons, legally considered ownerless, not subject to States' sovereignty and where States can carry out any activities under the freedom of the high seas, is one of the challenges that has contributed to the difficulty in achieving conservation and sustainable use of biodiversity on the high seas.¹⁴

1.3 Main Challenges to High Seas Biodiversity Conservation

The main challenges to the conservation of high seas biodiversity have been identified as the fragmented and sector-based management of the oceans; the lack of a comprehensive legal framework for the high seas encompassing all biodiversity components; the lack of cooperation and coordination between States and between institutions with a mandate to work on the high seas; and the lack of implementation and enforcement of existing legal instruments and measures.¹⁵ The current institutional regulatory regime in place for the high seas is sector-based and focuses on activities such as fishing, shipping or deep seabed mining. Not all activities taking place on the high seas are covered by this regime and it only covers some activities in a fragmented

¹¹ LOSC art 117.

¹² LOSC art 192; Jon M Van Dyke, 'Giving Teeth to the Environmental Obligations in the LOSC' in Alex G Oude Elferink and Donald R Rothwell (eds), *Oceans Management in the 21st Century: Institutional Frameworks and Responses* (Martinus Nijhoff, 2004).

¹³ United Nations General Assembly, *Declaration on Principles of International Law Concerning Friendly Relations and Cooperation Among States in Accordance with the Charter of the United Nations*, GA Res 25/2625, 25th sess, Agenda Item 85, A/RES/25/2625 (24 October 1970) reiterates the duty to cooperate outlined in the Charter of the United Nations as a basic principle of international law (Kiss and Shelton, above n 8, 12).

¹⁴ LOSC art 87 and art 89. The freedom of the high seas gives all States, whether coastal or land-locked, the right to carry out any activities on the high seas, including the ones expressly outlined in the LOSC, provided that these activities are exercised reasonably under the conditions outlined in Part VII of the LOSC and are not prohibited by the LOSC or international law. Buck defines global commons as 'resource domains in which common pool resources are found' (Susan J Buck, *The Global Commons: an Introduction* (Earthscan, 1998) 1). Apart from the high seas, other global commons include Antarctica, the Atmosphere, Space as well as deep seabed minerals.

¹⁵ See, eg: Rosemary Rayfuse and Robin Warner, 'Securing a Sustainable Future for the Oceans Beyond National Jurisdiction: The Legal Basis for an Integrated Cross-Sectoral Regime for High Seas Governance for the 21st Century' (2008) 23(3) *The International Journal of Marine and Coastal Law* 399; Lori Ridgeway, 'Governance Beyond National Jurisdiction. Linkages to Sectoral Management' in Julien Rochette (ed), *Towards a New Governance of High Seas Biodiversity* (Institut Oceanographique, 2009) 245; Kristina M Gjerde et al, 'Regulatory and Governance Gaps in the International Regime for the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction (IUCN Environmental Policy and Law Papers Online Marine Series No 1, IUCN, 2008); Annick De Marffy-Mantuano, 'What International Coordination for Marine Biodiversity Governance in Areas Beyond National Jurisdiction?' in Julien Rochette (ed), *Towards a New Governance of High Seas Biodiversity* (Institut Oceanographique, 2009) 205; Alfonso Ascencio and Michael Bliss, 'Conserving the Biodiversity of the High Seas and Deep Oceans: Institutional Gaps in the International System' (Paper presented at the Workshop on the Governance of High Seas Biodiversity Conservation, Cairns, 16-19 June 2003); IUCN, 'Co-Chair's Report of Workshop on High Seas Governance for the 21st Century' (Workshop Report, IUCN, 17-19 October 2007); 2011 BBNJ Report; Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 8 June 2012 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/67/95, United Nations General Assembly, 67th sess, Item 76(a) of the preliminary list (13 June 2012) ('2012 BBNJ Report').

and geographically selective manner at the regional and global levels. There is currently no institution specifically working on high seas biodiversity related issues nor is there a coordinating institution amongst global and regional bodies for high seas related matters. Furthermore, no institution oversees the application of conservation principles and management tools, the effective compliance and enforcement of rules and regulations, or assesses the degree of cumulative impacts of present and future ocean uses. The management of high seas biodiversity occurs indirectly through a scattered network of laws and institutions.¹⁶ In particular, the sector-based institutional regulatory framework in place has been described as inadequate to take into account the cumulative impacts of all human activities currently taking place and that may take place in the future on the high seas and in the deep seas.¹⁷

In order to bridge some of these gaps, discussions are underway under the United Nations (UN) umbrella on the possible adoption of an implementing agreement to the *United Nations Law of the Sea Convention* (LOSC) that would provide a legal framework for high seas biodiversity.¹⁸ However, with many issues of contention still unresolved, progress at the global level is likely to be slow. Given the need to progress towards better management and conservation of biodiversity on the high seas, the necessity to take steps at the regional level to strengthen the legal and institutional frameworks has been underlined at the UN and has been advocated by many scholars as a necessary way forward and complementary approach to this potential overarching legal agreement.¹⁹

1.4 Regional Approach to High Seas Conservation

Regional cooperation has been underlined, mainly through regional cross-sectoral cooperation, as a key requirement for successful high seas management and

¹⁶ Ibid.

¹⁷ 2008 BBNJ Report para 18; 2010 BBNJ Report para 47.

¹⁸ 2012 BBNJ Report.

¹⁹ See, eg: Jeff A Ardron et al, 'The Sustainable Use and Conservation of Biodiversity in ABNJ: What Can Be Achieved Using Existing International Agreements?' (2014) 49 *Marine Policy* 98; Natalie C Ban et al, 'Systematic Conservation Planning: A Better Recipe for Managing the High Seas for Biodiversity Conservation and Sustainable Use' (2014) 7(1) *Conservation Letters* 41; Ascencio and Bliss, above n 14; Rayfuse and Warner, above n 14; Kristina M Gjerde et al, 'Options for Addressing Regulatory and Governance Gaps in the International Regime for the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction' (IUCN Environmental Policy and Law Papers Online Marine Series No 2, IUCN, 2008); 2012 BBNJ Report; World Summit on Sustainable Development, *Johannesburg Plan of Implementation* (2002) ('JPOI'); Gjerde et al, above n 5; Nele Matz-Lück and Johannes Fuchs, 'The Impact of OSPAR on Protected Area Management Beyond National Jurisdiction: Effective Regional Cooperation or a Network of Paper Parks?' (2014) 49 *Marine Policy* 155.

conservation and sustainable use of high seas biodiversity.²⁰ As they are global commons, the high seas require the cooperation of appropriate international and regional institutions for their management to ensure multi-sectoral and integrated management.²¹

A regional approach to high seas biodiversity conservation has many advantages. In contrast to a global approach, it involves fewer stakeholders who are able to take into account the environmental specificity and uniqueness of their region, as well as their financial capacities to manage this environment.²² Regional States may also impose more stringent measures for the conservation of biodiversity than the ones agreed at the global level.²³ A regional approach has also been shown to engender a better legal commitment and policy convergence on behalf of States in the region, to be more cost-effective and more efficient in dealing with large-scale changes.²⁴ Finally, it helps to increase cross-agency cooperation and contributes to a better coherence between biodiversity conservation and fisheries management.²⁵

Current progress at the regional level, particularly in the North-East Atlantic, has shown good promise to date, demonstrating that regional cross-institutional cooperation through coordinated efforts and political will can positively influence the conservation and sustainable use of biodiversity in ABNJ.²⁶ In this respect, the important role played by regional fisheries management organisations (RFMOs) and regional seas organisations (RSOs) in regional ocean governance and in promoting such integrated

²⁰ See, eg: Gjerde et al, above n 18; Rayfuse and Warner, above n 14; Ardrón et al, above n 18; Julien Rochette and Raphaël Billé, 'Governance of Marine Biodiversity Beyond National Jurisdictions: Issues and Perspectives. Report of the International Seminar "Towards a New Governance of High Seas Biodiversity"' (Principality of Monaco, March 20-21, 2008) (2008) 51(12) *Ocean and Coastal Management* 779; Julien Rochette et al, 'The Regional Approach to the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction' (2014) 49 *Marine Policy* 109; Elisabeth Druel et al, 'Governance of Marine Biodiversity in Areas Beyond National Jurisdiction at the Regional Level: Filling the Gaps and Strengthening the Framework for Action. Case Studies from the North-East Atlantic, Southern Ocean, Western Indian Ocean, South West Pacific and the Sargasso Sea' (IDDRI Study No 04/12, IDDRI, 2012); 2011 *BBNJ Report*.

²¹ Elinor Ostrom et al, 'Revisiting the Commons: Local Lessons, Global Challenges' (1999) 284 *Science* 278; Ardrón et al, above n 18.

²² Gjerde et al, above n 18; Rochette et al, above n 19; David E Johnson et al, 'Building the Regional Perspective: Platforms for Success' (2014) 24(Suppl. 2) *Aquatic Conservation: Marine and Freshwater Ecosystems* 75; Sebastian Unger and Julien Rochette, 'Governance of Areas Beyond National Jurisdiction – Developing and Strengthening Regional Approaches' (UNEP(DEPI)/RS.15/WP.6.RS, UNEP, 2013) 2; Julien Rochette and Raphaël Billé, 'Bridging the Gap between Legal and Institutional Developments within Regional Seas Frameworks' (2013) 28 *The International Journal of Marine and Coastal Law* 433.

²³ Gjerde et al, above n 18; Rochette et al, above n 19; Rochette and Billé, above n 21; Julien Rochette and Raphaël Billé, 'ICZM Protocols to Regional Seas Conventions: What? Why? How?' (2012) 36 *Marine Policy* 977.

²⁴ B A Simmons cited in Moira L McConnell, 'Observations on Compliance and Enforcement and Regional Fisheries Institutions: Overcoming the Limitations of the Law of the Seas' in Dawn A Russell and David L VanderZwaag (eds), *Recasting Transboundary Fisheries Management Arrangements in Light of Sustainability Principles: Canadian and International Perspectives* (Martinus Nijhoff, 2010) 71,79; Johnson et al, above n 21.

²⁵ Johnson et al, above n 21.

²⁶ Rochette et al, above n 19.

ocean management has been highlighted.²⁷ Regional governance is seen as critical to ensure the effective application and implementation of legal provisions for the conservation of high seas biodiversity.²⁸ However, despite the need for regional cross-sectoral cooperation, collaboration and cooperation between regional institutions with a mandate to manage different activities on the high seas has been limited to date.²⁹

1.5 Institutionalisation of Conservation and Cooperation Duties

The conservation and management of high seas living resources depends to a large extent on the establishment of regional agreements and institutions that will adopt and implement measures for this purpose. International law institutionalises the cooperation and conservation duties for the management of high seas living resources, especially straddling and highly migratory fish stocks, at the regional level through RFMOs.³⁰ Regional fisheries organisations (RFOs) can either have a management mandate that enables them to establish and enforce legally binding management measures, known as RFMOs, or be advisory in nature, known as regional fisheries arrangements (RFAs). This distinction depends upon the nature of their establishment.³¹ RFMOs play an important role in the management of high seas fisheries and in providing a platform through which States can fulfil their duty to cooperate.³²

The strengthening and updating of existing international and sectoral institutions' mandates, particularly of RFMOs and RSOs, has been proposed.³³ This would allow for

²⁷ 2010 BBNJ Report para 46; 2011 BBNJ Report para 14.

²⁸ R Warner, K M Gjerde and D Freestone, 'Regional Governance for Fisheries and Biodiversity' in Serge M Garcia, Jake Rice and Anthony Charles (eds), *Governance of Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution* (Wiley-Blackwell, 2014) 211.

²⁹ Ingrid Kvalvik, 'Managing Institutional Overlap in the Protection of Marine Ecosystems on the High Seas. The Case of the North East Atlantic' (2012) 56 *Ocean & Coastal Management* 35.

³⁰ LOSC art 63.2, art 64 and art 118; *United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, opened for signature 8 September 1995, ATS 8 (entered into force 11 December 2001) ('UNFSA') art 8.5; United Nations Food and Agriculture Organization, *Code of Conduct for Responsible Fisheries* (1995) ('Code of Conduct') art 7.1.3. Provisions on the establishment of regional bodies for the conservation and management of living resources are found in both the exclusive economic zone (EEZ) and the high seas sections of the LOSC. Although the LOSC provides for the creation of regional 'fisheries' organisations, Article 118's chapeau mentions the 'conservation and management of living resources' rather than just fish stocks. The UNFSA and *Code of Conduct* on the other hand only focus on fisheries. See also: M Cecilia Engler, *Establishment and Implementation of a Conservation and Management Regime for High Seas Fisheries, with Focus on the Southeast Pacific and Chile: From Global Developments to Regional Challenges* (UN-Nippon Foundation Fellowship, 2007).

³¹ RFOs can either be established: a) under the FAO constitution; b) outside of the FAO framework but with FAO fulfilling depository functions; or c) outside of the FAO framework, with no direct link to FAO. RFOs established outside of FAO are independent bodies that have regulatory powers. The ones established under the FAO Constitution fall either under the Article VI category, which means they are advisory bodies that are based on FAO legal texts and its Constitution, or the Article XIV category, which means that they are established by treaty and are dependent to some extent on FAO but are more autonomous than Article VI bodies and have regulatory powers, thus they can establish and enforce legally binding management measures (source: <http://www.fao.org/fishery/topic/16918/en>; accessed on 15 May 2014).

³² LOSC art 63.2, art 64 and art 118; UNFSA art 8.5; *Code of Conduct* art 7.1.3.

³³ See, eg: Gjerde et al, above n 18; Gjerde et al, above n 5; Ban et al, above n 18; Rochette et al, above n 19; Warner et al, above n 27.

an extension of their mandate into ABNJ, multi-species management, integration of high seas biodiversity obligations and the inclusion of broader environmental principles.³⁴ At present, RFMOs have recognised major biodiversity obligations in their conventions but the implementation of these obligations remains highly variable and often inadequate.³⁵ The need to make RFMOs accountable for the application and implementation of biodiversity obligations has been raised by the Joint Expert Meeting on Addressing Biodiversity Concerns in Sustainable Fisheries organised in 2011 by the CBD.³⁶

The work of RFMOs and RSOs in contributing to high seas biodiversity conservation is at the core of this thesis. Taking the Southeast Pacific region as a focal point, this thesis will specifically address the incorporation of high seas biodiversity obligations by RFMOs, their level of cooperation, as well as their cooperation with RSOs on high seas biodiversity conservation.

1.6 Institutional Interplay Management

The way that regional institutions interact with each other can affect the environmental regime in place, both positively and negatively, as well as the development, implementation and performance of these institutions in marine environmental protection and biodiversity conservation.³⁷ An aspect of institutional interplay is the jurisdictional or functional overlap between institutions.³⁸ When these overlaps are not adequately recognised and reconciled, they can obstruct the effective and efficient management of the marine environment.³⁹ They may lead to situations of unclear competence and uncertainty, the adoption of incoherent and contradictory measures

³⁴ 2008 BBNJ Report para 40; Warner et al, above n 27.

³⁵ Convention on Biological Diversity, *Report of Joint Expert Meeting on Addressing Biodiversity Concerns in Sustainable Fisheries*, UNEP/CBD/SBSTTA/16/INF/13, Subsidiary Body on Scientific Technical and Technological Advice, 16th meeting, Item 6.2 of the Provisional Agenda (5 March 2012) ('*Biodiversity Concerns Report*') annex III para 8 and para 9.

³⁶ Ibid annex III para 1e.

³⁷ Alf Hakon Hoel, 'Marine Biodiversity and Institutional Interplay' (2003) 30 *Coastal Management* 25; Sebastian Oberthür, 'Interplay Management: Enhancing Environmental Policy Integration among International Institutions' (2009) 9 *International Environmental Agreements* 371.

³⁸ A jurisdictional overlap 'occurs where two or more statutes or regulations govern some aspect of the same resource or activity in the same geographic space' while a functional overlap 'arises when two or more statutes or regulations separately cover intersecting activities' (Julia A Ekstrom et al, 'A Tool to Navigate Overlaps in Fragmented Ocean Governance' (2009) 33 *Marine Policy* 532). An overlap 'implies that the functional scope of one regime protrudes into the functional scope of others (Young, cited in G Kristin Rosendal, 'Impacts of Overlapping International Regimes: The Case of Biodiversity' (2001) 7 *Global Governance* 95).

³⁹ Ekstrom et al, above n 37; Rosendal, above n 37.

between institutions, ineffective implementation of treaty obligations, duplication of work and even conflict.⁴⁰

To avoid these issues, institutional interplay can be managed to create synergistic overlaps and optimise each institution's function in order to improve overall governance.⁴¹ Interplay can be positively enhanced by increasing institutions' coordination and interactions and by working on policy integration.⁴² Increased institutional coordination can be achieved through the establishment of a formal framework to facilitate inter-institutional cooperation. Creating such cooperative arrangements between institutions is a way of enhancing the benefits resulting from interplay, including cost-efficiency, while minimising the negative consequences of overlaps and conflicts.⁴³ Since legal provisions for the conservation of high seas biodiversity are scattered across multiple treaties and while an international agreement is being debated under the UN umbrella, the use of institutional cooperative mechanisms provides an important ongoing mechanism towards achieving high seas biodiversity conservation.⁴⁴

1.7 Focal Region: The Southeast Pacific

The Southeast Pacific, categorised as Food and Agriculture Organization (FAO) Major Fishing Area for Statistical Purposes No. 87, encompasses an area of 30.02 million km² extending from northern Colombia to southern Chile (Figure 1.1).⁴⁵ This region is dominated by the equatorward flowing Humboldt Current, one of the most productive and largest upwelling ecosystems in the world. Off Peru and the northern and central parts of Chile and together with southerly trade winds, the Humboldt Current leads to the seasonal upwelling of cold and nutrient-rich waters resulting in high primary

⁴⁰ Kvalvik, above n 28; Oberthür, above n 36; Olav Schram Stokke, 'The Interplay of International Regimes: Putting Effectiveness Theory to Work' (FNI Report 14/2001, The Fridtjof Nansen Institute, 2001); Karen N Scott, 'International Environmental Governance: Managing Fragmentation Through Institutional Connection' (2011) 12 *Melbourne Journal of International Law* 177.

⁴¹ Hoel, above n 36; Oran R Young, 'Environmental Governance: The Role of Institutions in Causing and Confronting Environmental Problems' (2003) 3 *International Environmental Agreements: Politics, Law and Economics* 377; Scott, above n 39.

⁴² Oberthür, above n 36.

⁴³ Brown Weiss cited in Stokke, above n 39, 13; Scott, above n 39.

⁴⁴ See, eg: Karen N Scott, 'Transboundary Environmental Governance and Emerging Environmental Threats: Geo-engineering in the Marine Environment' in Robin Warner and Simon Marsden (eds), *Transboundary Environmental Governance: Inland, Coastal and Marine Perspectives* (Ashgate Publishing, 2012) 223; Juan Manuel Gómez-Robledo and Philip D. Burgess, *Report of the Ad Hoc Open-ended Informal Working Group to Study Issues Relating to the Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction*, A/61/65, United Nations General Assembly, 61st sess, Item 69(a) of the preliminary list (20 March 2006) ('2006 BBNJ Report') para 13; 2008 BBNJ Report para 22 and para 24; 2010 BBNJ Report para 12, para 13, para 48 and para 49.

⁴⁵ FAO Statistical Area 87 is located between 120°W and the western coastline of South America and between 5°N and 60°S.

productivity.⁴⁶ It is the productivity provided by the Humboldt Current, which makes the Southeast Pacific the second most productive fisheries region in the world.⁴⁷ In 2011, 12.3 million tonnes of fish were caught, representing 15 per cent of global fisheries catches.⁴⁸

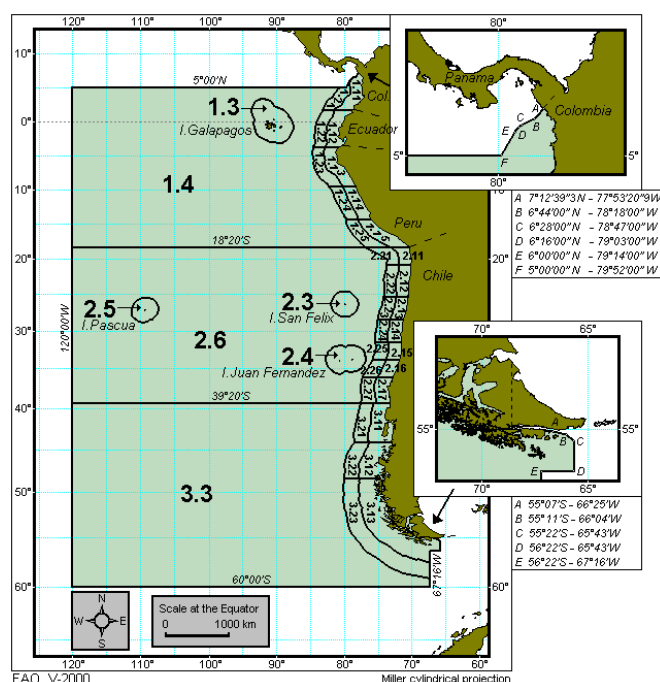


Figure 1.1: Extent of the FAO Major Fishing Area for Statistical Purposes No. 87
(Source: FAO)⁴⁹

The Southeast Pacific hosts a number of economically and commercially important transboundary and highly migratory fish stocks, which are fished by both coastal and distant water fishing nations (DWFNs). Fisheries in this region are predominantly characterised by catches of shrimps, small coastal pelagic fish and large tropical migratory pelagic fish off Colombia and Ecuador; small pelagic species off Peru and

⁴⁶ See, eg: Michelle Allsopp et al, *State of the World's Oceans* (Springer, 2009); Carmen E Morales and Carina B Lange, 'Oceanographic Studies in the Humboldt Current System off Chile: An Introduction' (2004) 51 *Deep-Sea Research II* 2345; Francisco P Chavez et al, 'The Northern Humboldt Current System: Brief History, Present Status and a View Towards the Future' (2008) 79 *Progress in Oceanography* 95; Vivian Montecino and Carina B Lange, 'The Humboldt Current System: Ecosystem Components and Processes, Fisheries, and Sediment Studies' (2009) 83 *Progress in Oceanography* 65; UNEP Regional Seas Programme, *South-East Pacific Regional Profile* <www.unep.org/regionalseas/programmes/nonunep/sepacific/instruments/r_profile_sep.pdf> (accessed: 2 December 2014); Patricia Miloslavich et al, 'Marine Biodiversity in the Atlantic and Pacific Coasts of South America: Knowledge and Gaps' (2011) 6(1) *Plos One* 1.

⁴⁷ FAO Fisheries and Aquaculture Department, 'The State of the World Fisheries and Aquaculture 2014' (Report, FAO, 2014) ('FAO 2014 SOFIA') 37.

⁴⁸ Ibid. In this report, using data collected in 2011, the FAO ranks the Southeast Pacific with a total catch of 12.3 million tonnes (15 per cent of the global marine catch) as the second most productive fisheries region in the world after the Northwest Pacific (26 per cent) and before the Western Central Pacific (14 per cent), and the North-East Atlantic (9 per cent).

⁴⁹ Source: www.fao.org/fishery/area/Area87/en (accessed: 4 April 2013).

northern/central Chile; and demersal species and benthic invertebrates off southern Chile.⁵⁰

With the large climatic fluctuations occurring in the region through the El Niño-Southern Oscillation (ENSO), total catches for the region are highly variable from year to year, displaying a declining trend since 1993.⁵¹ During an El Niño event, a warm eastward current flows along the Equator and disrupts the upwelling effect of the Humboldt Current along the coast of northern South America, resulting in a 2 to 3°C sea temperature rise, a 40 to 50 cm sea level rise and a reduced availability of nutrients in surface waters.⁵² These climatic variations affect the abundance and distribution of marine living resources, having an impact on the productivity and biomass of the region and, therefore, on fisheries catches. These changes in catches have socio-economic repercussions for the coastal States and also for global fisheries trends as the Southeast Pacific is one of the largest contributors to both world capture fish production and to total world fish production.⁵³ Typically, the Southeast Pacific is ranked as the second most productive fisheries region in the world after the Northwest Pacific but in some years following a strong ENSO event, the production drops drastically and puts the Southeast Pacific in fourth position, after the Northwest Pacific, Western Central Pacific and North-East Atlantic regions.⁵⁴

In contrast, the northern part of the Southeast Pacific region, off Colombia and Ecuador, is influenced by surface equatorial currents and characterised by a tropical climate with warm waters and lower productivity. The southernmost part of the region, off the south of Chile, is characterised by cold waters with high productivity, which is also influenced by the inflow of freshwater from coastal fjords.

The Southeast Pacific region is also characterised by a narrow continental shelf with only a few exceptions along the southern part of the coast where the continental shelf

⁵⁰ FAO, 'Review of the State of World Marine Fishery Resources' (Fisheries and Aquaculture Technical Paper no 569, FAO, 2011) ('*FAO 2011 Review*') 198.

⁵¹ *FAO 2014 SOFIA* 39. The ENSO phenomenon is explained in Section 2.3.3 of Chapter 2.

⁵² Hurtado cited in UNEP Regional Seas Programme, *South-East Pacific Regional Profile* <www.unep.org/regionalseas/programmes/nonunep/sepacific/instruments/r_profile_sep.pdf> (accessed: 2 December 2014).

⁵³ *FAO 2011 Review* 202.

⁵⁴ See, eg: *FAO 2014 SOFIA* 11 (Table 3) for fish catch variations in major FAO fishing areas. The world fish production is the sum of data from global capture fish production and global aquaculture production. World capture fish production is the sum of global fisheries catches.

can reach 130 km in width.⁵⁵ Several oceanic islands are found within this region, the largest ones being the Galapagos Islands off Ecuador and the Juan Fernandez Archipelago, Easter Island and Salas y Gómez Islands off Chile. Seamounts occur throughout the study area, with a large number of them located in the southern part of the Eastern Pacific and particularly around the Nazca and Sala y Gomez Ridges as well as the East Pacific Rise.⁵⁶ Seamounts constrain the passage of currents, thus creating a particular oceanography around the mount that attracts higher levels of biodiversity. Considered to be biological hotspots, they are vital habitats for unique and diverse communities of species which host high levels of endemic species.⁵⁷

1.8 Thesis Scope and Significance of the Research

This thesis focuses on the ecologically important Southeast Pacific region; the second most productive fisheries region in the world.⁵⁸ The geographical scope of this thesis is the FAO Major Fishing Area for Statistical Purposes No. 87 (Figure 1.2).

As highlighted above, a regional emphasis through a focus on the work of RFMOs and RSOs in contributing to high seas biodiversity conservation is at the core of this thesis. Specifically, this thesis examines the adequacy of the regional legal and institutional framework of the Southeast Pacific to address high seas biodiversity conservation. Based on the literature review provided in the first four chapters of this thesis and summarised above, the adequacy of this framework will be assessed in three ways. Firstly, the role and appropriateness of RFMOs and RSOs in contributing to high seas biodiversity conservation will be critically analysed. Secondly, the level of cooperation

⁵⁵ The total continental shelf area has a surface of approximately 0.5 million km² (FAO 2011 Review 197).

⁵⁶ Geoffrey A Abers, Barry Parsons and Jeffrey K Weissel, 'Seamount Abundances and Distributions in the Southeast Pacific' (1988) 87 *Earth and Planetary Science Letters* 137; Adrian Kitchingman and Sherman Lai, 'Inferences on Potential Seamount Locations from Mid-Resolution Bathymetric Data' in Telmo Morato and Daniel Pauly (eds), *Seamounts: Biodiversity and Fisheries* (Fisheries Centre Research Reports 12(5), 2004) 7; Adrian Kitchingman et al, 'How Many Seamounts Are There and Where Are They Located?' in Tony J Pitcher, Telmo Morato, Paul J B Hart, Malcolm R Clark, Nigel Haggan, Ricardo S Santos (eds), *Seamounts: Ecology, Fisheries and Conservation* (Blackwell Publishing, 2007) 26; Valérie Allain, Julie-Anne Kerandel and Malcolm Clark, 'Potential Seamount Location in the South Pacific RFMO Area: Prerequisite for Fisheries Management and Conservation in the High Seas' (Report No SPRFMO-V-SWG-05, Secretariat of the Pacific Community, 2005).

Seamounts and knolls are underwater mountains that can, in the case of seamounts, rise to more than 1,000 metres. They are unevenly distributed across all oceans, with the highest numbers found in the Pacific Ocean. Large seamounts are produced in the vicinity of mid-ocean ridges, through intra-plate volcanic activity and in island arcs (Paul Wessel, David T Sandwell and Seung-Sep Kim, 'The Global Seamount Census' (2010) 23(1) *Oceanography* 24; Chris Yesson et al, 'The Global Distribution of Seamounts Based on 30 Arc Seconds Bathymetry Data' (2011) 58 *Deep-Sea Research I* 442). Although there are many uncertainties around their abundance and distribution, it is estimated that there are over 30,000 seamounts with heights of more than 1000 metres and more than 100,000 smaller underwater mountains worldwide (Yesson et al, above n 55).

⁵⁷ See, eg: Telmo Morato et al, 'Seamounts are Hotspots of Pelagic Biodiversity in the Open Ocean' (2010) 107(21) *PNAS* 9707; Boris Worm, Heike K Lotze and Ransom A Myers, 'Predator Diversity Hotspots in the Blue Ocean' (2003) 100(17) *PNAS* 9884. See also the marine species tracking programme undertaken in the Pacific through the Census of Marine Life's Tagging of Pacific Predators (TOPP), whose results show the importance of the Pacific, including the Southeast Pacific, for top predators (B A Block et al, 'Tracking Apex Marine Predator Movements in a Dynamic Ocean' (2011) 86 *Nature* 475).

⁵⁸ FAO 2014 SOFIA 37.

and interaction between the two RFMOs and one RSO with a mandate to work in the Southeast Pacific region will be critically evaluated and suggestions made as to how the interplay of these institutions could be better managed and enhanced for high seas biodiversity conservation. Finally, focusing on the incorporation of high seas biodiversity conservation obligations by RFMOs and RSOs, this thesis will assess the extent to which these regional institutions have adopted and implemented global legal measures relevant to the conservation of high seas biodiversity. This thesis will aim to identify the key challenges that the region faces in the implementation of globally agreed biodiversity conservation measures and to answer the following overall research question: Even in the absence of a global legal framework for high seas biodiversity, does the legal and regional institutional framework in the Southeast Pacific provide comprehensive and adequate conservation and management of high seas biodiversity?

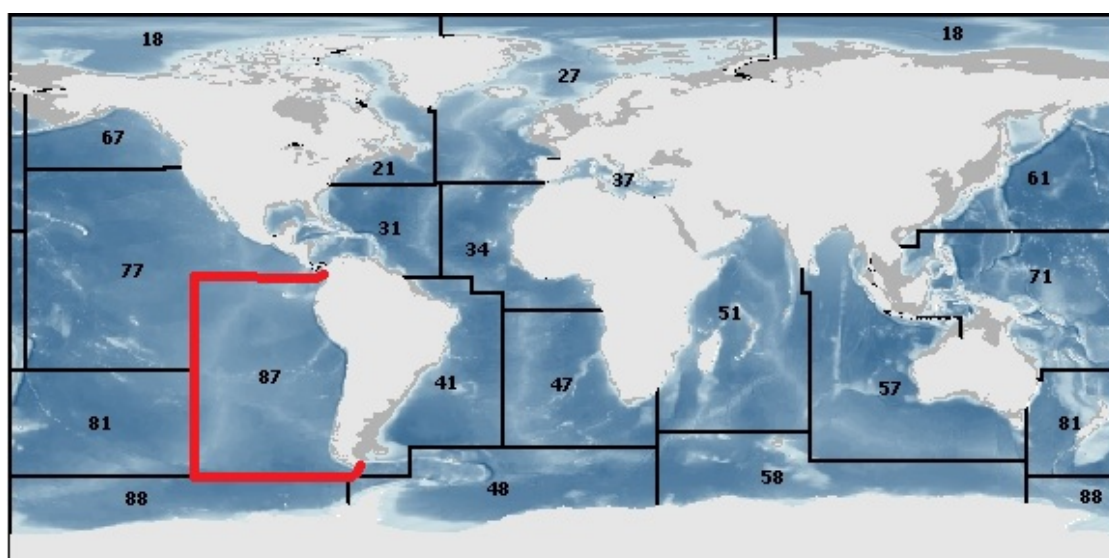


Figure 1.2: Extent of Study Area in the Pacific Ocean

(Source: FAO)⁵⁹

Three regional institutions with a high seas mandate have a geographical scope that spans parts of the Southeast Pacific. The Inter-American Tropical Tuna Commission (IATTC) is a RFMO mandated to manage tuna, tuna-like species and other bycatch fish species within the Eastern Pacific Ocean (EPO), with the objective of ensuring their

⁵⁹ Source: <http://www.fao.org/fishery/area/search/en> (accessed: 26.05.2014).

long-term conservation and sustainable use.⁶⁰ The newly established South Pacific Regional Fisheries Management Organisation (SPRFMO) is a RFMO mandated to ensure the long-term conservation and sustainable use of non-highly migratory fish species in the Southern Pacific.⁶¹ Finally, the Comisión Permanente del Pacífico Sur (CPPS; Permanent Commission for the South Pacific) is a strategic regional alliance established to consolidate its member States' presence in the Southeast Pacific region and to foster their collaboration in marine policy coordination, marine resource exploitation and conservation, marine environmental protection and regional scientific research.⁶² Acting as both RSO and RFO, it has the advisory mandate to promote both the conservation of marine living resources and the protection of the marine environment within the jurisdiction of its member States. Its jurisdiction also extends beyond national jurisdiction to those parts of the high seas that could be affected by marine and coastal pollution.⁶³

This thesis critically analyses the existing legal and institutional framework for the conservation of high seas biodiversity in the Southeast Pacific region and assesses whether there is a need to strengthen these frameworks in order to advance the conservation of high seas biodiversity.⁶⁴ So far, most academic and government analyses of RFMOs have focused on their fisheries management practice;⁶⁵ governance;⁶⁶ participation and allocation issues;⁶⁷ relations with non-members;⁶⁸ application of the precautionary and ecosystem based approaches;⁶⁹ decision-making

⁶⁰ *Convention for the Strengthening of the Inter-American Tropical Tuna Commission established by the 1949 Convention between the United States of America and the Republic of Costa Rica*, opened for signature 27 June 2003 (entered into force 27 August 2010) ('IATTC Antigua Convention') art 2.

⁶¹ The SPRFMO Convention area extends to high seas areas of the South Pacific between Australia in the west and Chile in the east (*Convention on the Conservation and Management of High Seas Fishery Resources in the South Pacific Ocean*, opened for signature 14 November 2009, ATS 28 (entered into force 24 August 2012) corrected in 2010 ('SPRFMO Convention') art 5).

⁶² *Estatuto sobre Competencias y Estructura de la Comisión Permanente del Pacífico Sur* [Statute on Competency and Structure of the Permanent Commission for the South Pacific] (2013) ('CPPS Estatuto') art 1 and art 4f.

⁶³ *Convenio para la Protección del Medio Marino y la Zona Costera del Pacífico Sudeste* [Convention for the Protection of the Marine Environment and Coastal Area of the Southeast Pacific], opened for signature 12 November 1981 (entered into force 19 May 1986) ('CPPS Marine Environmental Protection Convention') art 1.

⁶⁴ See, eg: Gjerde et al, above n 18; Gjerde et al, above n 5; Ban et al, above n 18; Rochette et al, above n 19; Warner et al, above n 27.

⁶⁵ Sarika Cullis-Suzuki and Daniel Pauly, 'Failing the High Seas: a Global Evaluation of Regional Fisheries Management Organization' (2010) 34 *Marine Policy* 1036; Sarika Cullis-Suzuki and Daniel Pauly, 'Evaluating Global Regional Fisheries Management Organizations: Methodology and Scoring' (Working Paper No 2009-12, UBC Fisheries Centre, 2009).

⁶⁶ Are K Sydnés, 'Regional Fishery Organizations: How and Why Organizational Diversity Matters' (2001) 32(4) *Ocean Development and International Law* 349; Pedro Pintassilgo et al, 'Stability and Success of Regional Fisheries Management Organizations' (2010) 46 *Environmental and Resource Economics* 377; Judith Swan, 'Regional Fishery Bodies and Governance: Issues, Actions and Future Directions' (FAO Fisheries Circular No 959, FAO, 2000); Druel et al, above n 19; Engler, above n 29.

⁶⁷ Erik Jaap Molenaar, 'Participation, Allocation and Unregulated Fishing: The Practice of Regional Fisheries Management Organisations' (2003) 18(4) *The International Journal of Marine and Coastal Law* 457.

⁶⁸ Daniel Owen, 'Practice of RFMOs Regarding Non-Members' (Recommended Best Practices for Regional Fisheries Management Organizations: Technical Study No 2, Chatham House, 2007).

⁶⁹ Paul de Bruyn, Hilario Murua and Martín Aranda, 'The Precautionary Approach to Fisheries Management : How is This Taken into Account by Tuna Regional Fisheries Management Organisations (RFMOs)' 38 *Marine Policy* 397; Marjorie L Mooney-Seus

processes;⁷⁰ performance reviews;⁷¹ bycatch mitigation;⁷² the application of trade and market measures;⁷³ transparency;⁷⁴ and incorporation of biodiversity obligations and best practices.⁷⁵ Important focal study regions in terms of biodiversity conservation and sustainable fisheries management have included the North-East Atlantic, the Southern Ocean, the Mediterranean, the Sargasso Sea and the Western and Central Pacific Ocean regions. There have also been some studies on the institutional interplay between the Commission for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) and the North-East Atlantic Fisheries Commission (NEAFC) in the North-East Atlantic region.⁷⁶

To date, no study has been done on RFMO governance with regard to high seas biodiversity or institutional interplay for the Southeast Pacific. There is also no comprehensive regional study which focuses on evaluating institutional interplay, cooperation between RFMOs and RSOs and the incorporation of biodiversity obligations in RFMO conservation and management measures within a single region. Furthermore, no performance review of either IATTC or SPRFMO has been done to date. With the newly established SPRFMO, this region provides an interesting set of regional institutions, covering both tuna and non-tuna species as well as the protection of the marine environment through CPPS. Also, both areas within and beyond national jurisdiction are covered by these regional institutions. The complementarity in their geographical scope and functional mandates is a strength that can be used positively to improve the management of high seas living resources and the conservation of high seas

and Andrew A Rosenberg, 'Regional Fisheries Management Organizations: Progress in Adopting the Precautionary Approach and Ecosystem-Based Management' (Recommended Best Practices for Regional Fisheries Management Organizations: Technical Study No 1, Chatham House, 2007).

⁷⁰ Ted L. McDorman, 'Implementing Existing Tools: Turning Words into Actions – Decision-Making Processes of Regional Fisheries Management Organisations (RFMOs)' (2005) 20(3) *The International Journal of Marine and Coastal Law* 423; Judith Swan, 'Decision-Making in Regional Fishery Bodies or Arrangements: The Evolving Role of RFBS and International Agreement on Decision-Making Processes' (FAO Fisheries Circular No 995, FAO, 2004).

⁷¹ Marika Ceo et al, 'Performance Reviews by Regional Fishery Bodies: Introduction, Summaries, Synthesis and Best Practices. Volume I: CCAMLR, CCSBT, ICCAT, IOTC, NAFO, NASCO, NEAFC' (FAO Fisheries and Aquaculture Circular No 1072, FAO, 2012); OECD, 'Strengthening Regional Fisheries Management Organisations' (Report, OECD, 2009).

⁷² Eric Gilman, Kelvin Passfield and Katrina Nakamura, 'Performance Assessment of Bycatch and Discards Governance by Regional Fisheries Management Organizations' (Report, IUCN, 2012).

⁷³ Richard Tarasofsky, 'Enhancing the Effectiveness of Regional Fisheries Management Organizations through Trade and Market Measures' (Briefing Paper, Chatham House EEDP BP 07/04, May 2007).

⁷⁴ Eric Gilman and Eric Kingma, 'Standard for Assessing Transparency in Information on Compliance with Obligations of Regional Fisheries Management Organizations: Validation through Assessment of the Western and Central Pacific Fisheries Commission' (2013) 84 *Ocean and Coastal Management* 31; Nichola Clark, *An Analysis of the Transparency of Marine Governance Organizations* (Master Thesis, Duke University, 2014).

⁷⁵ *Biodiversity Concerns Report*; Michael W Lodge et al, 'Recommended Best Practices for Regional Fisheries Organizations: Report of an independent panel to develop a model for improved governance by Regional Fisheries Management Organizations' (Report, Chatham House, 2007); K Hoydal, D Johnson, and A H Hoel, 'Regional Governance: The Case of NEAFC and OSPAR' in Serge M Garcia, Jake Rice and Anthony Charles (eds), *Governance of Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution* (Wiley- Blackwell, 2014) 225.

⁷⁶ See in particular: Kvalvik, above n 28; Jon Birger Skjaerseth, 'Protecting the North-East Atlantic: Enhancing Synergies by Institutional Interplay' (2006) 30 *Marine Policy* 157.

biodiversity in the Southeast Pacific. This thesis aims to contribute towards the development of other assessment studies for this region as well as other less-studied regions that will provide useful information on how to strengthen the regional legal and institutional framework for the conservation of high seas biodiversity.

1.9 Thesis Objectives

This thesis will take three steps in examining the adequacy of the regional legal and institutional framework of the Southeast Pacific to address high seas biodiversity conservation to answer the overarching research question: Even in the absence of a global legal framework for high seas biodiversity, does the legal and regional institutional framework in the Southeast Pacific provide comprehensive and adequate conservation and management of high seas biodiversity?

The first objective of this thesis is to highlight the need to strengthen the regional institutional and legal framework for addressing high seas biodiversity conservation. This is addressed in Chapter 2, which provides a review of the conservation of high seas biodiversity, and Chapter 3, which analyses the current international law and policy framework in place for the conservation of marine biodiversity in ABNJ.

The second objective is to assess the role and appropriateness of RFMOs in contributing to high seas biodiversity conservation, notably by looking at the level of institutional interplay and cooperation between the two RFMOs and the RSO with a mandate to work in the Southeast Pacific region. This is addressed in Chapter 4, which assesses the regional institutional framework in place for the conservation of high seas biodiversity of the Southeast Pacific.

The third objective of this thesis is to evaluate the extent to which the two RFMOs have adopted into their conventions and implemented global legal measures pertinent to the conservation of high seas biodiversity. Chapter 5 provides the methodological background to the analysis that will be carried out in Chapter 6.

Overall, this thesis will identify the key challenges that the Southeast Pacific region faces in the conservation and sustainable use of high seas biodiversity and provide options on how to strengthen this regional institutional framework.

1.10 Area of Focus

Given the significance of fishing as the most important commercial activity for the Southeast Pacific region, the impact that fisheries have on biodiversity and the fact that fishing represents the main threat to marine biodiversity in this region, this thesis will focus on the conservation of high seas biodiversity in the Southeast Pacific from a fisheries-threat perspective.⁷⁷ When undertaking the analysis on the adoption and implementation of global legal measures pertinent to the conservation of high seas biodiversity, global legal measures with regard to the protection of the marine environment, including the prevention, reduction and control of marine pollution, will be considered. However, it will not take into account specific legal measures with regard to other human activities taking place on the high seas, such as those for shipping by the International Maritime Organization (IMO).

This thesis will also focus solely on biodiversity in the high seas water column and will not include benthic or sedentary species beyond national jurisdiction that are categorised under international law as being part of the deep seabed, designated as the Area under the LOSC. Furthermore, this thesis will only consider the three regional fisheries institutions whose geographical scope includes the Southeast Pacific.⁷⁸ Although some countries bordering the Southeast Pacific are members of the Commission on the Conservation of Antarctic Marine Living Resources (CCAMLR), this thesis will not include this regional fishery body as it only has a mandate to work in the Southern Ocean. Regional institutions without a mandate to work on the high seas will not be considered in this thesis.

This research will focus solely on the adequacy of the institutional and legal framework in place and not assess the actual implementation or enforcement of global legal measures to conserve high seas biodiversity. As outlined in Section 1.11 below, this thesis takes a more theoretical approach to the analyses, rather than applied. Only meeting reports, commission resolutions and recommendations and other relevant information found on the three regional institutions' websites are used to evaluate their

⁷⁷ According to Chatwin, the main threats to coastal and marine biodiversity in South America are: 1) fisheries, 2) pollution, 3) urban development, 4) resource extraction, 5) hydrocarbon industry, 6) aquaculture, 7) maritime transport, 8) tourism, 9) invasive species, and 10) climate change (Anthony Chatwin, 'Priorities for Coastal and Marine Conservation in South America' (Report, The Nature Conservancy, 2007) 3).

⁷⁸ These are IATTC and SPRFMO, both RFMOs, and CPPS, which is both a RSO and RFO.

implementation of global legal measures. Consequently, the implementation of these measures can only be assessed to the extent portrayed in documents available on these websites. Any information that has not been written out in these documents will not be accounted for in this thesis' analyses. While this provides a more impartial and objective account of what is happening in the Southeast Pacific, the actual implementation of measures will need to be fully evaluated in order to more comprehensively assess the compliance and enforcement needs for this region.

This thesis aims to consider the incorporation of biodiversity obligations into RFMO mandates and how institutional interplay management within the Southeast Pacific can help overcome some of the challenges identified in the conservation of high seas biodiversity. It does not aim to do a performance review of these regional RFMOs.

1.11 Methodology

This thesis was conducted as a desktop study, based on data available on the website of various global and regional institutions. To this end, primary and secondary literature was collected, reviewed and analysed. The primary literature used includes UN resolutions, international, regional, and bilateral legal agreements as well as official documents, memoranda of understanding (MoUs), and conference proceedings, outcomes and reports from the United Nations General Assembly (UNGA) and its related processes, IMO, FAO, RFOs, the Regional Seas Programme (RSP), the United Nations Environment Programme (UNEP) as well as the CBD. The secondary literature included published peer-reviewed scholarly literature as well as publications from relevant stakeholders, such as intergovernmental or non-governmental organisations. The data contained in this thesis is current as of 31 December 2014.⁷⁹

The adequacy of the regional institutional framework of the Southeast Pacific in addressing high seas biodiversity conservation was evaluated in three steps. Firstly, the role and appropriateness of RFMOs in contributing to high seas biodiversity conservation was evaluated by looking at the international law and policy framework

⁷⁹ The *Ad Hoc Open-ended Informal Working Group to Study Issues Relating to the Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction* (BBNJ Working Group) meeting, which took place between 20-23 January 2015, and the third meeting of SPRFMO, which took place between 2-6 February 2015, are therefore not included in this thesis. Also, the meeting reports for the December 2014 UNGA Resolution on Oceans and the Law of the Sea (A/RES/69/245) and the 87th and 88th IATTC meetings were not available online at the end of December 2014 and were therefore not considered in this thesis.

for high seas biodiversity conservation and the regional institutional framework for high seas biodiversity conservation in the Southeast Pacific.

Secondly, the level of interplay, interaction and cooperation between the three regional institutions with a mandate to work on the high seas, namely IATTC, SPRFMO and CPPS, was assessed. Following the analysis done by Kvalvik for the North-East Atlantic region, the evaluation of this institutional interplay included the mandates of these organisations and their powers in terms of high seas biodiversity; their decision-making procedures; the level of cooperation, communication and activity coordination between institutions; the creation of joint rules and regulations; and the use of a knowledge base for the provision of scientific information.⁸⁰

The final step focuses on the regional institutional approach to the conservation of high seas biodiversity. Focusing on the incorporation of high seas biodiversity obligations by RFMOs, this section assesses the extent to which these RFMOs have adopted and implemented global legal measures pertinent to the conservation of high seas biodiversity. These global legal provisions were used as benchmarks against which the regional framework for the Southeast Pacific was assessed. Chapter 5 provides a detailed background methodology to this analysis. The analysis was split into two: Firstly, the extent to which these global legal measures have been integrated into the RFMOs conventions was evaluated. Secondly, the extent to which these global legal measures are being implemented through the RFMOs was assessed. For this analysis, all global legal conservation and management measures relevant to high seas biodiversity conservation were taken from hard and soft law instruments, ranging from treaties and agreements to ministerial declarations and MoUs.

The key challenges that this region faces in the implementation of globally agreed biodiversity conservation measures in the high seas and in institutional interplay management are then identified, discussed and options to strengthen the framework proposed.

⁸⁰ Kvalvik, above n 28.

1.12 Thesis Structure

This thesis is divided into eight chapters, as follows:

This introductory chapter provides a brief overview of some key issues in the conservation of high seas biodiversity and introduces the scope and objectives of this thesis. It also briefly outlines the area of focus of the thesis, the research methodologies employed and the general structure of the thesis. Table 1.1 summarises the main line of argument for the thesis.

Chapter 2 provides a review of the global and current issues around the conservation of high seas biodiversity. Introducing the key concepts of this research, it highlights the important role of oceans and marine biodiversity in ecosystem services and the contributors to and impacts of biodiversity loss. It outlines the challenges in the conservation of high seas biodiversity as identified by the international community and the importance of a regional approach as a proposed way forward. This chapter forms the knowledge basis used to justify the focus of this thesis on a regional institutional approach to high seas biodiversity conservation.

Chapter 3 provides an overview of the international law and policy framework in place for the conservation of marine biodiversity in ABNJ. It examines the special status of the high seas and its resources to understand the implications that this has for the conservation of high seas biodiversity. The international law and policy framework is assessed, focusing on the conservation and management requirements for the protection of the marine environment and the conservation of marine living resources in the high seas.

Chapters 4, 5 and 6 are the core analytical chapters of this thesis. They examine the regional institutional framework for the Southeast Pacific to assess how the institutionalisation of States' cooperation and conservation duties is achieved through RFMOs. Particularly, they will be looking at the adequacy of the regional institutional framework by addressing the role and appropriateness of RFMOs in contributing to high seas biodiversity conservation; the evaluation of the level of interplay and cooperation between the two RFMOs and the RSO with a mandate to work in the Southeast Pacific region; and the extent to which these RFMOs have adopted and implemented global legal measures pertinent to the conservation of high seas

biodiversity. These chapters identify the key challenges that the Southeast Pacific faces in the implementation of globally agreed biodiversity conservation measures and in its institutional interplay management and answer the following overall research question: Even in the absence of a global legal framework for high seas biodiversity, does the legal and regional institutional framework in the Southeast Pacific provide comprehensive and adequate conservation and management of high seas biodiversity?

Chapter 4 analyses the regional institutional framework for the conservation of high seas biodiversity, focusing on the duty of States to cooperate. The regional institutionalisation of the cooperation and conservation duties is explained, a general review of how this is implemented by RSOs and RFMOs is provided, and the role and adequacy of RFMOs in the conservation of high seas biodiversity discussed. The regional institutional framework of the Southeast Pacific relevant to the conservation of high seas biodiversity is presented and the institutional interplay and level of cooperation between IATTC, SPRFMO and CPPS assessed. Challenges and shortcomings in the institutional interplay management in this region are outlined.

Chapters 5 and 6 examine the regional institutional approach to the conservation of high seas biodiversity, focusing on the conservation duty of States. In this regard, Chapter 5 provides the necessary methodological background to the analysis. It explains how the analysis undertaken in Chapter 6 has been constructed and how the relevant global legal measures pertinent to the conservation of high seas biodiversity have been selected, categorised and analysed. Chapter 6 presents the results of the analysis and highlights the challenges and shortcomings in the adoption and implementation by RFMOs of legal measures pertinent to the conservation of high seas biodiversity.

The challenges identified from the analyses performed in Chapters 4, 5 and 6 are discussed in Chapter 7 and options to strengthen the regional institutional framework are proposed. Finally, Chapter 8 provides an overall conclusion for the thesis.

Table 1.1: Main Line of Argument

Chapter	Main Line of Argument
Chapter 1: <i>Introduction</i>	Introduction to thesis topic, scope, and objectives, research methodologies, and outline of main line of argument.

Table 1.1 (continued)

Chapter	Main Line of Argument
<p>Chapter 2: <i>Conservation of High Seas Biodiversity: A Review</i></p>	<p>This chapter describes the importance of the Southeast Pacific in terms of its productivity and reviews the global and current issues around the conservation of high seas biodiversity, highlighting the conservation challenges identified by the international community. <i>Based on this review, the importance of a regional approach to high seas biodiversity conservation, particularly through regional cross-sectoral cooperation, is highlighted.</i></p>
<p>Chapter 3: <i>International Law and Policy Framework for Marine Biodiversity Conservation in ABNJ</i></p>	<p>The international law and policy framework in place for the conservation of marine biodiversity in ABNJ is examined. This analysis shows that the conservation and sustainable use of marine biodiversity in ABNJ is not fully covered under the current global legal framework, with legal provisions being scarce and scattered across multiple global, regional and sectoral agreements. <i>This chapter concludes that both the duty to cooperate and the duty to conserve high seas living resources under international law provide the basis for the conservation and sustainable use of marine biodiversity in ABNJ and that these duties are institutionalised at the regional level through the establishment of RFMOs.</i></p>
<p>Chapter 4: <i>The Regional Institutional Framework for the Conservation of High Seas Biodiversity of the Southeast Pacific</i></p>	<p>This chapter analyses the regional institutional framework for the conservation of high seas biodiversity, focusing on the duty of States to cooperate. The institutional interplay and level of cooperation between IATTC, SPRFMO and CPPS are assessed and challenges and shortcomings in the regional institutional interplay management identified.</p>

Table 1.1 (continued)

Chapter	Main Line of Argument
Chapter 4 (continued)	<i>The analysis of this chapter shows that such cooperation and collaboration is not yet fully developed for the Southeast Pacific. However, the institutional complementarity is a strength that can be used positively to improve the conservation of high seas biodiversity in the Southeast Pacific.</i>
Chapter 5: <i>Methodological Background to the Regional Institutional Analysis on the Duty to Conserve</i>	This chapter provides the methodological background to the analysis that is carried out in Chapter 6. It explains how the analysis has been constructed and how the relevant global legal provisions and measures pertinent to the conservation of high seas biodiversity have been selected, categorised and analysed. <i>The global legal provisions and measures relevant to the conservation of high seas biodiversity are mostly fisheries measures but they also cover the two tangible components of high seas biodiversity, namely biodiversity resources and ecosystems.</i>
Chapter 6: <i>Challenges in the Regional Application of Global Measures for the Conservation of High Seas Biodiversity of the Southeast Pacific</i>	This chapter examines the regional institutional approach to the conservation of high seas biodiversity, focusing on the conservation duty of States. It assesses the extent to which the RFMOs of the Southeast Pacific have incorporated global legal provisions and measures pertinent to high seas biodiversity conservation into their conventions and implemented them. It highlights the challenges and shortcomings in the adoption and implementation by RFMOs of legal measures pertinent to the conservation of high seas biodiversity.

Table 1.1 (continued)

Chapter	Main Line of Argument
Chapter 6 (continued)	<i>The three RFOs cover to some extent some of the global legal provisions and measures on the conservation of biodiversity but they are mainly focused on the management of target fish stocks within their Convention Areas. States are willing to use the institutional setting of RFMOs as means to coordinate their legal obligations at the regional level.</i>
Chapter 7: <i>Options and Recommendations to Strengthen Institutional Cooperation and High Seas Biodiversity Conservation in the Southeast Pacific</i>	The challenges identified from the analyses undertaken in Chapters 4, 5 and 6 are discussed and options to strengthen the regional institutional cooperation and high seas biodiversity conservation in the Southeast Pacific proposed. <i>Options range from legal, scientific and institutional cooperative mechanisms to the strengthening of conservation and management and compliance and enforcement measures.</i>
Chapter 8: <i>Conclusion</i>	This chapter synthesises the key findings of this thesis and highlights the key recommendations to strengthen the conservation of high seas biodiversity in the Southeast Pacific. <i>It concludes that this region has to overcome a range of institutional, cooperative and management challenges. By overcoming them and increasing cooperation and collaboration between the three regional institutions, it is expected that this region will be able to provide better conservation and management of high seas biodiversity.</i>

2 CONSERVATION OF HIGH SEAS BIODIVERSITY: A REVIEW

2.1 Introduction

This chapter will review the global and current issues around the conservation of high seas biodiversity. It will introduce the concept of biodiversity and highlight threats and contributors to biodiversity loss. This loss of biodiversity and its resulting impacts on ecosystem services and livelihoods has prompted the international community to take measures towards the conservation of biodiversity including, in recent years, the conservation of high seas biodiversity. Conserving living resources and ecosystems on the high seas has proved to be challenging and these constraints will be presented in this chapter, together with the proposed ways put forward by the international community. Based on these proposed measures, the importance of a regional approach to high seas biodiversity conservation is underscored at the end of this chapter and provides the basis for this thesis' research.

2.2 Oceans and the High Seas

Oceans cover approximately three-quarters of our planet's surface and represent the 'world's single largest ecosystem'.¹ They play a key role in sustaining life on Earth by modulating our planet's climate through atmospheric and thermal regulation and by driving the water and nutrient cycles.² The oceans are responsible for the absorption of over a quarter of carbon dioxide emitted into the atmosphere and store over 90 per cent of the heat from greenhouse gases, hence playing an important role in buffering the effects of climate change on our planet.³ The oceans also provide us with food and oxygen, nearly half of the oxygen we breathe is produced by the oceans, as well as cultural and aesthetic values and tourism and recreation activities.⁴ Without these resources and services that the oceans provide, our planet would not be a liveable place. Oceans can be seen as the 'kidney[s] of our planet' and are therefore vital to our planet's functioning and our survival.⁵

¹ Global Ocean Commission, 'From Decline to Recovery: A Rescue Package for the Global Ocean' (Report, Global Ocean Commission, 2014) 4.

² Ibid 5.

³ Ibid. See also: T F Stocker et al, 'Summary for Policymakers. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change' (Report, IPCC, 2013) 8.

⁴ Global Ocean Commission, above n 1, 5.

⁵ Ibid; Juan Manuel Gómez-Robledo and Philip D. Burgess, Report of the Ad Hoc Open-ended Informal Working Group to Study Issues Relating to the Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction, A/61/65, United Nations General Assembly, 61st sess, Item 69(a) of the preliminary list (20 March 2006) ('2006 BBNJ Report') para 32; Juan Manuel Gómez-Robledo and Robert Hill, Letter dated 15 May 2008 from the Co-Chairpersons of the Ad Hoc Open-ended

The high seas, legally defined as the water column beyond the national jurisdiction of States, represent 64 per cent of the oceans' surface, 70 per cent of the oceans' volume and about half of the planet's surface (Figure 2.1).⁶



Figure 2.1: The Extent of the High Seas

(Source: Sumaila et al 2014)⁷

It is estimated that high seas' ecosystems contribute to almost half of the oceans' biological productivity and are responsible for 49 per cent of the carbon fixed by phytoplankton.⁸ The social benefits of this carbon capture and storage by the high seas are estimated to be of around 148 billion US dollars per year.⁹ A study by Rogers et al identified a list of around 15 key ecosystem services essential to human wellbeing that are supported by the high seas. Provisioning services include: seafood, raw materials, genetic resources, medicinal resources and ornamental resources; regulating services include: air purification, climate regulation, waste treatment and biological control;

Informal Working Group to Study Issues Relating to the Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction Addressed to the President of the General Assembly, A/63/79, United Nations General Assembly, 63rd sess, Item 73 of the preliminary list (16 May 2008) ('2008 BBNJ Report') para 6; Palitha T B Kohona and Liesbeth Lijnzaad, Letter dated 16 March 2010 from the Co-Chairpersons of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly, A/65/68, United Nations General Assembly, 65th sess, Item 75(a) of the preliminary list (17 March 2010) ('2010 BBNJ Report') para 28.

⁶ Global Ocean Commission, above n 1, 4; A D Rogers et al, 'The High Seas and Us: Understanding the Value of High Seas Ecosystems' (Report, Global Ocean Commission, 2014) 4; *United Nations Convention on the Law of the Sea*, opened for signature 10 December 1982, ATS 31 (entered into force 16 November 1994) ('LOS') art 86. In this provision, the high seas are legally defined as: 'all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State'.

⁷ Source: Sumaila et al in Rogers et al, above n 6, 5.

⁸ Global Ocean Commission, above n 1, 5; Rogers et al, above n 6, 11. Rogers et al estimate that out of 47 billion tonnes of carbon fixed by phytoplankton, around 23 billion tonnes were fixed by phytoplankton on the high seas and that 0.448 billion tonnes of carbon was captured and stored in the high seas every year.

⁹ Rogers et al, above n 6, 12.

habitat services include: lifecycle maintenance and gene pool protection; and cultural services include: recreation and leisure, aesthetic information, inspiration for culture, art and design and information for cognitive development.¹⁰

2.3 Marine Biodiversity

Biological diversity, abbreviated as biodiversity, is defined as the variety of life at the genetic, species and ecosystem levels.¹¹ Biodiversity is found everywhere in the oceans, from surface waters to the deep seas and from coastal areas to the high seas. Biodiversity hotspots are notably found around aggregating features, such as on and around seamounts, hydrothermal vents, and submarine canyons as well as in oceanic gyres, shelf breaks, upwelling and front areas.¹² The *Convention on Biological Diversity* (CBD) started a process in 2010 to identify ecologically or biologically significant areas (EBSAs) of the oceans and, after holding nine expert workshops so far across all regions with two more to be held at the beginning of 2015, has already identified 204 such ecologically important and biological hotspot regions.¹³ A 2012 study by Appeltans et al estimates that around 226,000 marine species have been described to date, with about 58,000 to 72,000 collected marine species yet to be described and between 482,000 and 741,000 marine species yet to be discovered.¹⁴ This is similar to a 2011 study undertaken by Mora et al, which estimates that around 91 per cent of marine species are yet to be discovered.¹⁵ A 2005 CBD publication provides an overview of species richness patterns in the high seas.¹⁶

2.3.1 Threats to Marine Biodiversity and Biodiversity Loss

Despite an increase in ocean research in the last decade, notably through the work undertaken by the Census of Marine Life, little is known about the oceans as compared

¹⁰ Ibid 19.

¹¹ The Convention on Biological Diversity (CBD) defines biodiversity as the 'variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems' (*Convention on Biological Diversity*, opened for signature 5 June 1992, ATS 32 (entered into force 29 December 1993) ('*CBD*'). See Section 3.3.2.1 of Chapter 3 for a detailed legal definition and explanation of biodiversity.

¹² UNEP, 'Ecosystems and Biodiversity in Deep Waters and High Seas' (UNEP Regional Seas Reports and Studies No 178, UNEP/IUCN, 2006) 12.

¹³ See Section 2.6.5 of this chapter. <http://www.cbd.int/ebsa/> (accessed: 3 December 2014).

¹⁴ Ward Appeltans et al, 'The Magnitude of Global Marine Species Diversity' (2012) 22 *Current Biology* 2189. In their study, they estimate that between 222,000 and 230,000 marine species have been described. These include about: 7,600 Plantae species, 19,500 Chromista species, 550 Protozoa species, 1,050 Fungi species and nearly 200,000 Animalia species.

¹⁵ Camilo Mora et al, 'How Many Species are there on Earth and in the Ocean?' (2011) 9(8) *PLoS Biology* 1.

¹⁶ William Cheung et al, 'Patterns of Species Richness in the High Seas' (Technical Series no. 20, Secretariat of the Convention on Biological Diversity, 2005).

to terrestrial environments.¹⁷ Biodiversity underpins many key ecosystem functions that provide us with essential goods and services. These ecosystem functions include the provision of food and energy, recreation services, such as scuba diving or snorkelling, the use of genetic material for drug development, coastal protection against flooding and erosion, as well as the regulation of the Earth's climate through the participation of biodiversity in nutrient cycles and its influence on the carbon balance, through a process known as the biological pump.¹⁸ This is a process by which means carbon is sequestered by marine organisms, enabling the sequestration of atmospheric carbon to the deep sea. Biodiversity therefore plays a vital role in sustaining life on Earth.¹⁹ However, according to the Global Biodiversity Outlook, biodiversity loss is increasing globally due to growing human pressures and has been shown to lead to a loss or reduction in the provision of these ecosystem services.²⁰ A 1997 study led by Costanza estimates that the economic value of ecosystem services provided by the oceans is around 21 trillion US dollars per year, with an estimated contribution of about 40 per cent for the open oceans and about 60 per cent for the coastal areas.²¹ Overall, the oceans contribute to around 60 per cent of the biosphere's total economic value, showing their importance to human welfare.²² In this respect, the global initiative The Economics of Ecosystems and Biodiversity (TEEB) aims to assess the economic

¹⁷ See, eg: Enric Sala and Nancy Knowlton, 'Global Marine Biodiversity Trends' (2006) 31 *Annual Review of Environment and Resources* 93; 2006 *BBNJ Report* para 18. The Census of Marine Life was established in 2000 as a 'worldwide Census to assess and explain the diversity, distribution, and abundance of marine life' that was carried out over a decade, ending in 2010. This global project involved around 2,700 scientists from over 80 nations and carried out 540 marine expeditions (Census of Marine Life International Secretariat, 'First Census of Marine Life 2010: Highlights of a Decade of Discovery' (Report, Census of Marine Life, 2010), www.coml.org/pressreleases/census2010/PDF/Highlights-2010-Report-Low-Res.pdf (accessed: 3 December 2014)).

¹⁸ See, eg: Cheung et al, above n 16; F Stuart Chapin III et al, 'Consequences of Changing Biodiversity' (2000) 405 *Nature* 234; Boris Worm et al, 'Impacts of Biodiversity Loss on Ocean Ecosystem Services' (2006) 314 *Science* 787.

¹⁹ See, eg: Palitha T B Kohona and Liesbeth Lijnzaad, Letter dated 30 June 2011 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly, A/66/119, United Nations General Assembly, 66th sess, Item 77(a) of the preliminary list (30 June 2011) ('2011 *BBNJ Report*') para 8.

²⁰ Secretariat of the Convention on Biological Diversity, 'Global Biodiversity Outlook 3' (Report, CBD, 2010) shows that, although there has been work towards reaching the Aichi Targets established in 2010, biodiversity loss still continues to happen (see the end of Section 2.3.1 of this chapter for more information on the Aichi Targets). See, eg: 2006 *BBNJ Report* para 6 and para 18; Palitha T B Kohona and Liesbeth Lijnzaad, Letter dated 5 May 2014 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly, A/69/82, United Nations General Assembly, 69th sess, Item 75(a) of the preliminary list (5 May 2014) ('2014a *BBNJ Report*') para 9; Aðalheiður Jóhannsdóttir, Ian Cresswell and Peter Bridgewater, 'The Current Framework for International Governance of Biodiversity: Is It Doing More Harm Than Good?' (2010) 19(2) *Reciel* 139; Chapin III et al, above n 18; Worm et al, above n 18; Sala and Knowlton, above n 17; Millennium Ecosystem Assessment, 'Ecosystems and Human Well-being: Biodiversity Synthesis' (Report, World Resources Institute, 2005); UNEP, 'Global Environment Outlook (GEO-5): Environment for the Future We Want' (Report, UNEP, 2012). A study by Rudd shows that 99.5 per cent of scientists responded that 'it is likely a serious loss of biological diversity is underway at a global extent' (Murray A Rudd, 'Scientists' Opinions on the Global Status and Management of Biological Diversity' (2011) 25(6) *Conservation Biology* 1165, 1168). He also found that interviewed scientists 'ranked the "role of biological diversity in maintaining ecosystem function" highly' (Rudd, above n 20, 1173).

²¹ Robert Costanza et al, 'The Value of the World's Ecosystem Services and Natural Capital' (1997) 387 *Nature* 253; Robert Costanza, 'The Ecological, Economic, and Social Importance of the Oceans' (1999) 31 *Ecological Economics* 199. Costanza et al emphasise that their estimate should be considered as a minimum estimate.

²² Costanza, above n 21; Costanza et al, above n 21.

benefits of biodiversity and thereby show the growing cost that both the loss of biodiversity and the degradation of ecosystems would incur to our global economy.²³

A global map of cumulative impacts of human activities on the marine environment published by Halpern et al in 2008 emphasises the fact that oceans and their ecosystems are interrelated and that human impacts on the marine environment are global rather than localised.²⁴ The loss of marine biodiversity has been attributed to intensifying human activities on the high seas, in the deep seas and in coastal areas, and the non-participation in and non-compliance by States with international and regional fisheries instruments.²⁵ The main pressures include fisheries, through the overexploitation of the resources and destructive fishing practices such as bottom trawling, including habitat destruction and illegal, unreported and unregulated (IUU) fishing; ship source pollution, including the introduction of invasive alien species; and the impacts of global climate change, including ocean acidification, on the oceans.

Unsustainable fishing practices lead to the destruction of important habitats and can lead to the depletion and extinction of marine species, particularly slow-growing, slow-reproducing and endemic species. In the fishing process, both targeted species and unwanted bycatch species are caught, thus impacting on the balance and sustainability of marine ecosystems. For instance, a study by BirdLife International estimates that over 300,000 seabirds are killed annually in worldwide fisheries.²⁶ Bottom trawling is used in the oceans up to depths of around 2,000 m to capture bottom-dwelling and demersal fish species. This fishing technique is particularly detrimental as it destroys the seafloor habitat and its associated fauna and flora, captures unwanted bycatch species and leads, through the displacement of the top sediment layer, to the smothering of benthic species. Seamounts and deep-sea corals are particularly vulnerable to this destructive fishing practice due to their high level of endemism and their slow-growth.²⁷ The practice of IUU fishing contributes to a large extent to the decrease of fish stocks

²³ See: <http://www.teebweb.org/>. TEEB released its first synthesis report in October 2010.

²⁴ Benjamin S Halpern et al, 'A Global Map of Human Impact on Marine Ecosystems' (2008) 319(5865) *Science* 948.

²⁵ 2008 *BBNJ Report* para 13; 2010 *BBNJ Report* para 28.

²⁶ Euan Dunn, 'Reducing Seabird Bycatch: From Identifying Problems to Implementing Policy' in Davor Vidas and Peter Johann Schei (eds), *The World Ocean in Globalisation: Climate Change, Sustainable Fisheries, Biodiversity, Shipping, Regional Issues* (Martinus Nijhoff, 2011) 247, 247.

²⁷ Craig R Smith et al, 'The Near Future of the Deep-Sea Floor Ecosystems' in N Polunin (ed), *Aquatic Ecosystems: Trends and Global Prospects* (Cambridge University Press, 2008) 334.

and leads to overfishing. Deep-water fisheries are particularly vulnerable due to their slow growth and low reproduction rate and recruitment.²⁸

Shipping accounts for 90 per cent of global trade and affects marine biodiversity through the discharge, accidental or illegal, of oil and ballast water, noise and waste pollution as well as through the introduction of invasive species.

Through the ocean-atmosphere connection, the increase in atmospheric greenhouse gases has an impact on the oceans. The resulting global warming leads to ocean acidification, sea-level rise, ocean layer stratification and consequently the diminution of the re-oxygenation of deeper ocean layers, and changes in ocean circulation.²⁹ Climate change will therefore have profound and long-term impacts on species and ecosystems and will particularly affect species with restricted tolerances and small distribution ranges.

Other current and future activities that have an impact on the marine environment arise notably from marine debris, noise pollution, land-based pollution, pollution from other sea-based activities, ocean fertilisation, CO₂ sequestration, offshore oil and gas exploitation, the laying of pipelines, seabed mining, bio-prospecting and marine scientific research.³⁰ Particular concern has been expressed by the international community in relation to ocean-based geo-engineering activities, including carbon sequestration and ocean fertilisation.³¹

²⁸ Ibid; 2006 BBNJ Report para 7, para 8, para 33 and annex 1; Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 23 September 2013 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/68/399, United Nations General Assembly, 68th sess, Item 76(a) of the preliminary list (23 September 2013) ('2013 BBNJ Report') para 14; 2014a BBNJ Report para 10; Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 25 July 2014 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/69/177, United Nations General Assembly, 69th sess, Item 75(a) of the preliminary list (23 July 2014) ('2014b BBNJ Report') para 8.

²⁹ See, eg: 2006 BBNJ Report; 2008 BBNJ Report para 18; 2014b BBNJ Report para 8; Duncan E J Currie and Kateryna Wowk, 'Climate Change and CO₂ in the Oceans and Global Oceans Governance' (2009) 4 *Carbon and Climate Law Review* 387; Halpern et al, above n 24; Arianna Broggiato, 'Traditional and New Challenges to the Marine Environment' (2008) 38(6) *Environmental Policy and Law* 319; Renate Schubert et al, 'The Future Oceans: Warming Up, Rising High, Turning Sour' (Special Report, German Advisory Council on Global Change, 2006); James C Orr et al, 'Anthropogenic Ocean Acidification over the Twenty-First Century and its Impact on Calcifying Organisms' (2005) 437 *Nature* 681; Stocker et al, above n 3.

³⁰ Rosemary Rayfuse and Robin Warner, 'Securing a Sustainable Future for the Oceans Beyond National Jurisdiction: The Legal Basis for an Integrated Cross-Sectoral Regime for High Seas Governance for the 21st Century' (2008) 23(3) *The International Journal of Marine and Coastal Law* 399; United Nations General Assembly, *The Future We Want*, GA Res 66/288, 66th sess, Agenda Item 19, A/RES/66/288 (11 September 2012) ('*The Future We Want*') para 163, para 166 and para 167; United Nations General Assembly, *Oceans and the Law of the Sea: Report of the Secretary-General*, GA Res 68/70, 68th sess, Agenda Item 76 (a), A/68/70 (27 February 2014) para 152 and para 164; 2008 BBNJ Report para 13.

³¹ 2008 BBNJ Report para 14.

Seafloor mining is regulated under the *United Nations Convention on the Law of the Sea* (LOSC) as well as under the 1994 *Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982*.³² With the approval of the 2000 *Regulations on Prospecting and Exploration for Polymetallic Nodules* setting out the legal regime for seabed mining and the monitoring and protection of the marine environment, the International Seabed Authority (ISA) started issuing contracts to interested States to explore the possibility of harvesting seabed mineral resources (manganese nodules, cobalt-rich crusts and polymetallic sulphide).

As of December 2014, 19 contracts for the exploration of the seabed area in the Clarion-Clipperton Zone (North Central Pacific Ocean, Mid-Atlantic Ridge) and the South Central Indian Ocean have been issued. The first contracts, issued in 2001, will expire in 2016 although ISA may grant extensions. Contractors can then apply for exploitation contracts. Potential impacts of seabed mining include fauna and flora mortality in areas where mining takes place, the smothering or disturbance to seafloor communities around or above mined areas through sediment suspension and re-deposition and a possibility of species extinction. Scientists predict that the time for these communities to recover from mining impacts will likely take several years to centuries.³³

A recent study by Van Dover et al looks into the possible restoration of deep-sea ecosystems and evaluates that the costs involved in such restoration will be very high.³⁴ The ISA requests all contractors to protect the marine environment by applying the precautionary approach and taking all necessary measures to ‘prevent, reduce and control pollution and other hazards to the marine environment arising from [the] activities in the Area [(deep seabed beyond national jurisdiction)]’ and requires contractors to collect and make available baseline data.³⁵ It also established preservation references areas.³⁶

³² LOSC; United Nations General Assembly, *Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982*, GA Res 48/263, 48th sess, Agenda Item 36, A/RES/48/263 (17 August 1994).

³³ Eva Ramirez-Llodra et al, ‘Man and the Last Great Wilderness: Human Impact on the Deep Sea’ (2011) 6(7) *Plos One* 1.

³⁴ C L Van Dover et al, ‘Ecological Restoration in the Deep Sea: Desiderata’ (2014) 44 *Marine Policy* 98.

³⁵ *International Seabed Authority*, ‘Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area’ (2000) art 31.3. The term ‘precautionary approach’ is explained in Section 3.3.2.2 of Chapter 3.

³⁶ *Ibid* art 31.4 and art 31.7.

Marine scientific research is one of the high seas freedom outlined in Article 87 of the LOSC. Disturbances resulting from research include physical disturbances as well as light, noise and waste pollution. It is recognised that marine scientific research, when not conducted diligently or in a non-intrusive manner, can have adverse impacts on biodiversity.³⁷ Although the disturbances resulting from marine scientific research are minor and localised as compared to those from industries, the exact extent of the disturbance is currently unknown.³⁸

There is currently no internationally-agreed definition of bio-prospecting for commercial activities. The CBD defined bio-prospecting, an activity of high interest to industries such as the cosmetic, pharmaceutical and food industry, as ‘the exploration of biodiversity for commercially valuable genetic and biochemical resources. It can be defined as the process of gathering information from the biosphere on the molecular composition of genetic resources for the development of new commercial products’.³⁹ There is also no legal regime under the LOSC or the CBD for bio-prospecting in the deep-sea and the conduct of this activity raises a number of ethical questions that are being discussed under the auspices of the United Nations (UN).

Through deep-sea research programmes conducted by universities or research institutions, some genetic resources from deep-sea species have already been retrieved and patented. However, most of this activity is undertaken at a small-scale, principally within national jurisdiction, and for scientific purposes rather than for commercial exploitation. Threats to marine biodiversity from bio-prospecting include the ones linked to marine scientific research as well as the overexploitation of organisms that represent commercially important resources for bio-prospecting. Large-scale bio-prospecting activities are unlikely to take place in the near future due to the high costs linked to this activity.⁴⁰

³⁷ 2006 BBNJ Report para 27.

³⁸ Ramirez-Llodra et al, above n 33.

³⁹ Convention on Biological Diversity, *Progress Report on the Implementation of the Programmes of Work on the Biological Diversity of Inland Water Ecosystems, Marine and Coastal Biological Diversity, and Forest Biological Diversity* (Decisions IV/4, IV/5, IV/7), UNEP/CBD/COP/5/INF/7, Conference of the Parties to the Convention on Biological Diversity, 5th meeting, Item 16.1 of the Provisional Agenda (20 April 2000) para 6.

⁴⁰ Salvatore Arico and Charlotte Salpin, ‘Bioprospecting of Genetic Resources in the Deep Seabed: Scientific, Legal and Policy Aspects’ (Report, UNU-IAS, 2005).

These human activities and pressures lead to biodiversity loss, which includes the loss of species, population level impacts and ecosystem alterations, which consequently has substantial ecosystem and societal impacts. These especially include:

- habitat loss;
- overfishing;
- predators' removal from the ecosystem, leading to ecosystem shifts through changes in trophic relationships and ecological processes;
- loss of genetic variability, which can have an impact on species' survival and evolution;
- lower resistance and resilience to other environmental stressors, such as increased temperatures due to climate change, changes in nutrient cycles, energy fluxes and climate;
- formation of dead zones;
- introduction of invasive alien species and the reduction of species' and ecosystems' resistance to them;
- population depletion and species extinction;
- impact on coastal communities' livelihoods, particularly the ones most reliant on the ocean for their daily protein intake and survival.⁴¹

The urgent need to conserve and sustainably use marine biodiversity has led to the development of strategies to conserve and sustainably use biodiversity in areas beyond national jurisdiction (ABNJ).⁴² In particular, the international community recognises the need to better understand the cumulative effects of the various anthropogenic activities taking place in ABNJ.⁴³ During the 2010 International Year of Biodiversity, States agreed, at the tenth Conference of the Parties (COP) to the CBD, to a Strategic Plan for Biodiversity 2011-2020 and to the Aichi Targets that will serve as a basis during the UN Decade on Biodiversity (2011-2020) to halt, and if possible reverse, biodiversity loss.⁴⁴

⁴¹ See, eg: Chapin III et al, above n 18; Sala and Knowlton, above n 17; *2014a BBNJ Report* para 9.

⁴² *The Future We Want* para 158; *2006 BBNJ Report* para 6, para 19 and annex 1; *2008 BBNJ Report* para 6; *2010 BBNJ Report* para 29; Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 8 June 2012 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly, A/67/95*, United Nations General Assembly, 67th sess, Item 76(a) of the preliminary list (13 June 2012) ('*2012 BBNJ Report*') para 9; *2013 BBNJ Report* para 10; *2014a BBNJ Report* para 8; *2014b BBNJ Report* para 8.

⁴³ *2011 BBNJ Report* para 32.

⁴⁴ The CBD COP 10 took place in Nagoya, Japan, in October 2010. See: <http://www.cbd.int/2011-2020/> (accessed: 3 December 2014). This COP adopted a Strategic Plan for Biodiversity 2011-2020 that includes 20 targets, known as the Aichi Targets, aimed at reducing biodiversity loss, strengthening ecosystem resilience and promoting capacity building. These Aichi targets are categorised under five overarching strategic goals. See: <https://www.cbd.int/sp/targets/>.

Of particular relevance to marine biodiversity are: Aichi Target 3 on harmful subsidies, Aichi Target 6 on sustainable fishing, Aichi Target 8 on pollution minimisation, Aichi Target 9 on invasive alien species, Aichi Target 10 on climate change impacts, Aichi Target 11 on marine protected areas (MPAs) and Aichi Target 12 on threatened species.⁴⁵ A global movement to prevent and halt biodiversity loss and conserve and sustainably use biodiversity is in place. However, despite this movement, the international community has so far failed to meet the global target to significantly reduce the rate of biodiversity loss by 2010 adopted at the 2002 CBD COP 6 and further reiterated at the World Summit on Sustainable Development (WSSD).⁴⁶

2.3.2 Marine Biodiversity in the Southeast Pacific

The ecologically important and productive Humboldt Current is responsible for the high primary productivity of the Southeast Pacific.⁴⁷ In their publication compiling information on marine biodiversity off the coasts of South America, Miloslavich et al reported around 6,714 marine species for the Tropical East Pacific and around 10,201 marine species for the Humboldt Current system.⁴⁸ Marine biodiversity in the Southeast Pacific also encompasses very large target fisheries, as outlined in Section 2.3.4 of this chapter.

2.3.3 Main Threats to High Seas Biodiversity in the Southeast Pacific

With 12.3 million tonnes of fish caught in 2011 representing 15 per cent of global fisheries catches, the Southeast Pacific is the second most productive fisheries region in the world.⁴⁹ Since 1993, the catch trend for this region has been declining (Figure 2.2)

⁴⁵ See: <http://www.cbd.int/sp/targets/> (accessed: 26 February 2015).

⁴⁶ Convention on Biological Diversity, *Strategic Plan for the Convention on Biological Diversity*, UNEP/CBD/COP/6/VI/26, Conference of the Parties to the Convention on Biological Diversity, 6th meeting (27 May 2002) art 11; World Summit on Sustainable Development, *Johannesburg Plan of Implementation* (2002) ('JPOI') para 44; United Nations General Assembly, *Resolution Adopted by the General Assembly*, GA Res 60/1, 60th sess, Agenda Item 46 and 120, A/Res/60/1 (24 October 2005) para 56.

⁴⁷ See, eg: Michelle Allsopp et al, *State of the World's Oceans* (Springer, 2009); Carmen E Morales and Carina B Lange, 'Oceanographic Studies in the Humboldt Current System off Chile: An Introduction' (2004) 51 *Deep-Sea Research II* 2345; Francisco P Chavez et al, 'The Northern Humboldt Current System: Brief History, Present Status and a View Towards the Future' (2008) 79 *Progress in Oceanography* 95; Vivian Montecino and Carina B Lange, 'The Humboldt Current System: Ecosystem Components and Processes, Fisheries, and Sediment Studies' (2009) 83 *Progress in Oceanography* 65; UNEP Regional Seas Programme, *South-East Pacific Regional Profile* <www.unep.org/regionalseas/programmes/nonunep/sepacific/instruments/r_profile_sep.pdf> (accessed: 2 December 2014); Patricia Miloslavich et al, 'Marine Biodiversity in the Atlantic and Pacific Coasts of South America: Knowledge and Gaps' (2011) 6(1) *Plos One* 1.

⁴⁸ Miloslavich et al, above n 47. The Tropical East Pacific region represents the coastal waters off Costa Rica, Panama, Colombia and Ecuador while the Humboldt Current System region represents the coastal waters off Peru and Chile.

⁴⁹ FAO Fisheries and Aquaculture Department, 'The State of the World Fisheries and Aquaculture 2014' (Report, FAO, 2014) ('FAO 2014 SOFIA') 37. In this report, using data collected in 2011, the FAO ranks the Southeast Pacific with a total catch of 12.3 million tonnes (15 per cent of the global marine catch) as the second most productive fisheries region in the world after the Northwest Pacific (26 per cent) and before the Western Central Pacific (14 per cent), and the North-East Atlantic (nine per cent).

and, as outlined in Section 2.3.4 of this chapter, many fish stocks in this region are fully exploited or overexploited.

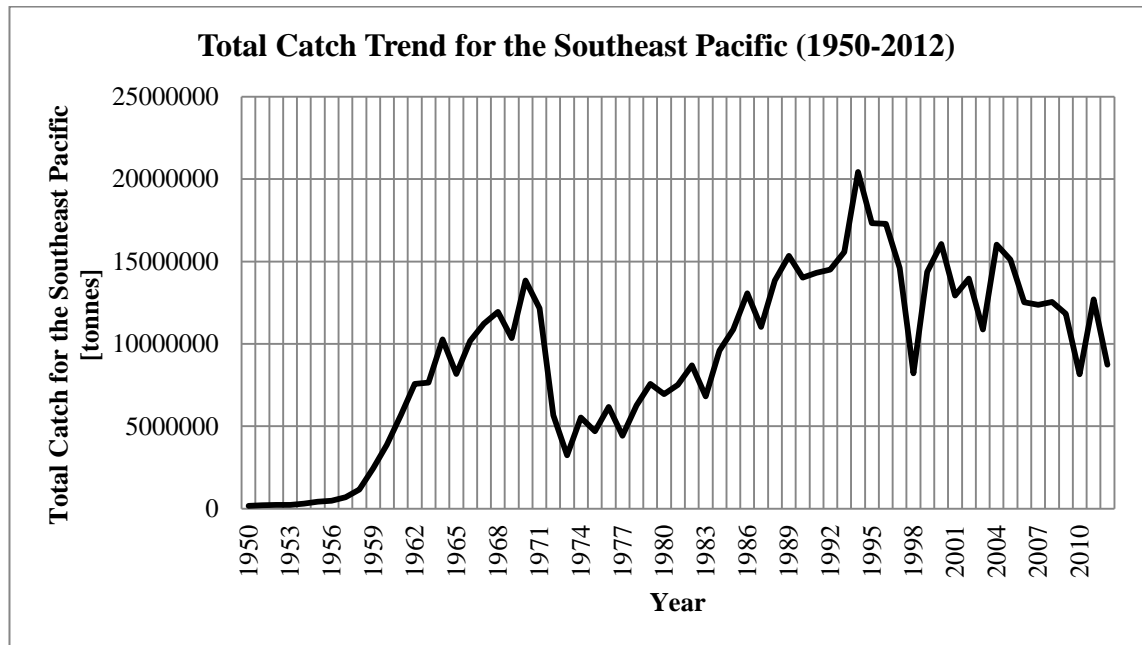


Figure 2.2: Total Catch Trend for the Southeast Pacific Region (1950-2012)⁵⁰

Fishing is one of the most important commercial activities taking place in the Southeast Pacific and represents the main threat to biodiversity in this region (Figure 2.3).⁵¹ Other anthropogenic impacts, such as shipping (Figure 2.4), other forms of marine pollution, anthropogenic climate change (Figure 2.5), harmful algal blooms, and the impacts of the high environmental variability produced by the El Niño-Southern Oscillation (ENSO) phenomenon, are, in comparison, of a lesser impact to high seas biodiversity in this region.⁵²

The ENSO phenomenon is a cyclic variation of above or below-average sea surface temperatures (SST) in the Equatorial Tropical Pacific Ocean linked to changes in atmospheric circulation. During an ‘El Niño’ event, SSTs in the Eastern Pacific are

⁵⁰ Data obtained from FAO Fisheries and Aquaculture Department, Statistics and Information Service FishStatJ: Universal software for fishery statistical time series. Copyright 2011. FishstatJ Version 2.1.1 was used to analyse the data. This version includes the FAO Capture Production data 1950-2012 released in March 2014. Source: <http://www.fao.org/fishery/statistics/software/fishstatj/en> (accessed: 8 May 2014).

⁵¹ Anthony Chatwin, ‘Priorities for Coastal and Marine Conservation in South America’ (Report, The Nature Conservancy, 2007) 3. According to Chatwin, the main threats to coastal and marine biodiversity in South America are: 1) fisheries, 2) pollution, 3) urban development, 4) resource extraction, 5) hydrocarbon industry, 6) aquaculture, 7) maritime transport, 8) tourism, 9) invasive species, and 10) climate change.

⁵² CPPS, ‘Plan de Acción Estratégico para la CPPS del Siglo XXI: 2013 – 2023’ in CPPS Secretaría General, *Textos Básicos* (CPPS, 4th edition, 2013) 285.

higher than average and are accompanied by low air pressure in the Eastern Pacific and high air pressure in the Western Pacific. These warm SSTs off the west coast of South America lead to a reduction in the upwelling of cold and nutrient-rich water. This in turn affects marine ecosystems and leads to lower fish catches. The opposite happens during a ‘La Niña’ event, when the SSTs in the Eastern Pacific are lower than average and the air pressure systems are reversed.⁵³

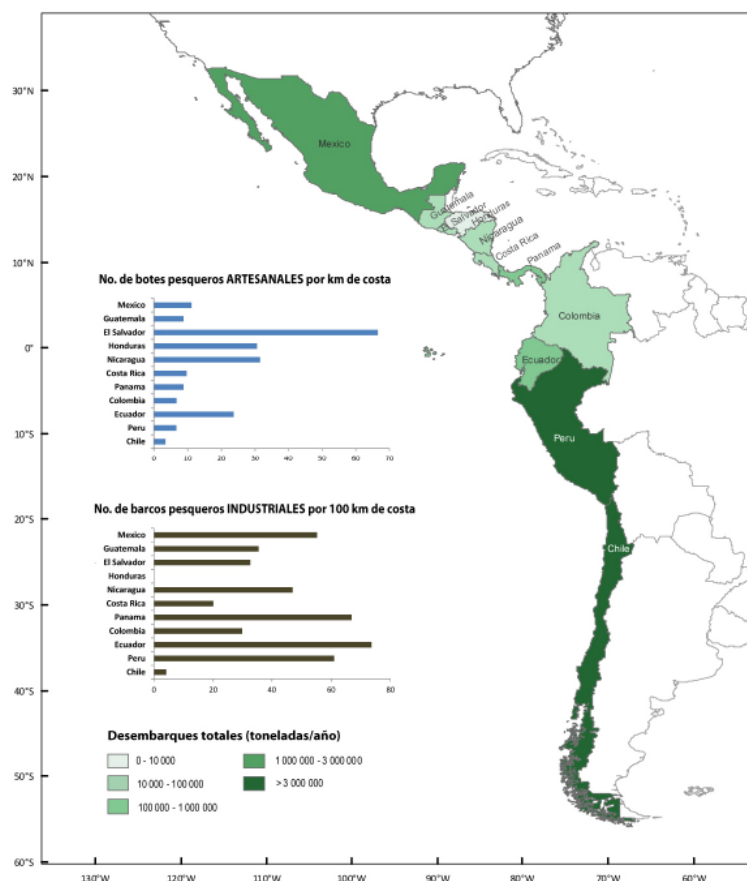


Figure 2.3: Catch Effort and Total Landings in Tonnes per Year for the Eastern Pacific (Source: Comisión Permanente del Pacífico Sur (CPPS) 2012)⁵⁴

Fisheries are an important source of protein for many coastal communities and represent an important income for many developing countries.⁵⁵ However, this activity, particularly through the use of destructive practices such as bottom trawling or the

⁵³ See, eg: H A Dijkstra, ‘The ENSO Phenomenon: Theory and Mechanisms’ (2006) 6 *Advances in Geosciences* 3.

⁵⁴ CPPS, ‘Atlas Sobre Distribución, Rutas Migratorias, Hábitats Críticos y Amenazas para Grandes Cetáceos en el Pacífico Oriental’ (Report, CPPS, 2012) 60. This figure shows the number of industrial (in brown) and artisanal (in blue) boats for each 100 km of coast. It also shows the number of landings per year per country (in green).

⁵⁵ Fish represent about 17 per cent of the global population’s intake of animal protein. See, eg: FAO, *Highlight: The State of World Fisheries and Aquaculture 2014* (2014) United Nations Food and Agriculture Organization <www.fao.org/3/a-i3807e.pdf> (accessed: 15 December 2014); World Ocean Review, *The Future of Fish – The Fisheries of the Future* (2013) Maribus <<http://worldoceanreview.com/en/wor-2/>> (accessed: 15 December 2014).

incidence of IUU fishing, and its consequences, including overfishing, is widely recognised as the main threat to marine biodiversity.⁵⁶

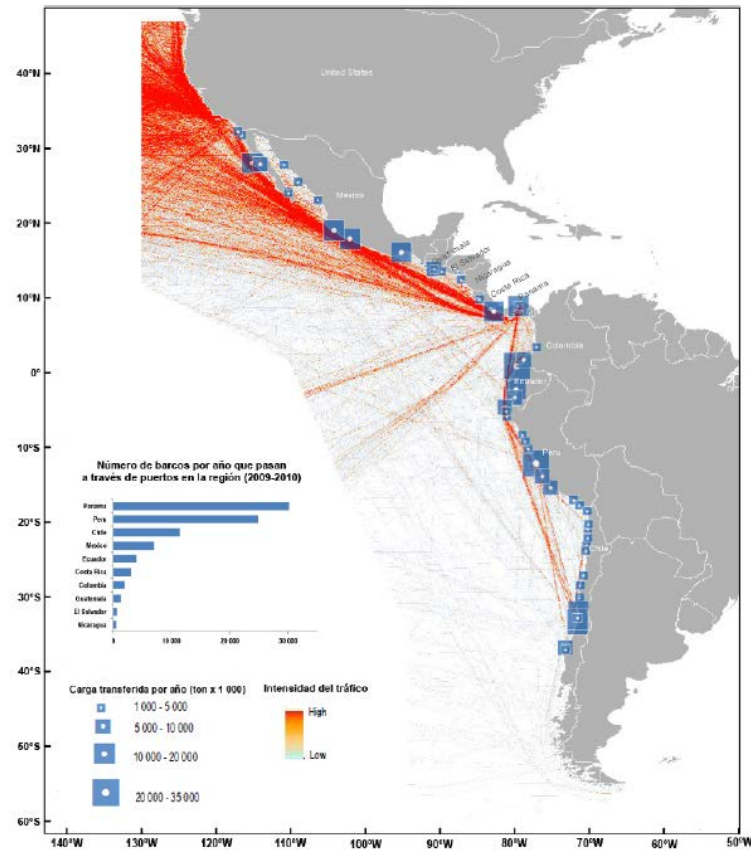


Figure 2.4: Ports, Load Transferred and Intensity of Maritime Traffic in the Eastern Pacific

(Source: CPPS 2012)⁵⁷

⁵⁶ See, eg: 2006 *BBNJ Report* para 7, para 8, para 33 and annex I; 2014a *BBNJ Report* para 10; Kristina M Gjerde et al, 'Ocean in Peril: Reforming the Management of Global Ocean Living Resources in Areas Beyond National Jurisdiction' (2013) 74 *Marine Pollution Bulletin* 540; Glen Wright et al, 'The Scores at Half Time: An Update on the International Discussions on the Governance of Marine Biodiversity in Areas Beyond National Jurisdiction' (IDDRI Issue Brief No 02/14, IDDRI, 2014).

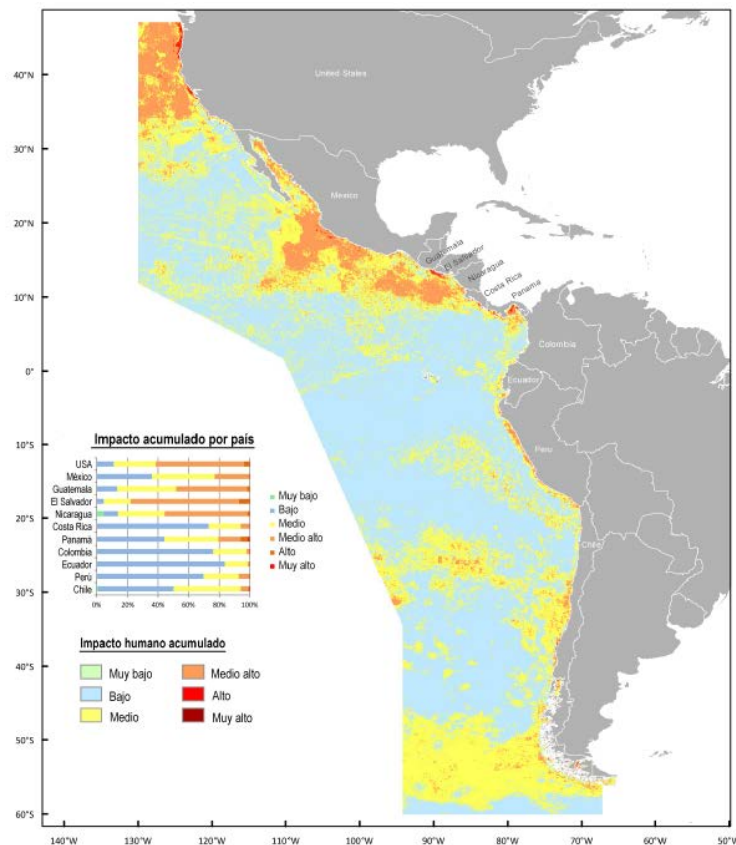


Figure 2.5: Cumulative Impacts of Anthropogenic Activities in the Eastern Pacific

(Source: CPPS 2012)⁵⁸

In its 2014 State of World Fisheries and Agriculture (SOFIA) report, the Food and Agriculture Organization (FAO) estimated that 61.3 per cent of worldwide fish stocks are fully fished, 28.8 per cent are fished at a biologically unsustainable level⁵⁹ and only 9.9 per cent of fish stocks are underfished.⁶⁰ A 2010 study by Cullis-Suzuki and Pauly furthermore revealed that, out of the 48 fish stocks that are under regional fisheries management organisation (RFMO) management, 32 of them are overfished or depleted.⁶¹ These percentages have constantly been increasing over the years and represent the highest recorded to date.⁶² They show that intensive fishing is taking place in all oceans, at all depths and both in coastal waters and in ABNJ.

⁵⁸ CPPS, above n 53, 63. This map is based on the study by Halpern et al (above n 24) showing the cumulative impacts of 17 human activities, including fisheries, marine pollution and climate change.

⁵⁹ *FAO 2014 SOFIA 7*: 'Stocks fished at biologically unsustainable levels have an abundance lower than the level that can produce the maximum sustainable yield (MSY) and are therefore overfished. They require strict management plans to rebuild them to full and biologically sustainable productivity'.

⁶⁰ Ibid. These are percentages from 2011 global fisheries catches.

⁶¹ Sarika Cullis-Suzuki and Daniel Pauly, 'Failing the High Seas: a Global Evaluation of Regional Fisheries Management Organization' (2010) 34 *Marine Policy* 1036.

⁶² Stock decreases are due to fisheries mismanagement through notably high fishing effort and total allowable catches (TAC) that are too large compared to scientific recommendations; overcapacity of fishing fleets; IUU fishing; failure to comply with management measures; and not taking an ecosystem approach to fisheries management. See, eg: J R Beddington, D J Agnew and C

In 2012, global reported fisheries catches were similar in range to previous years at 86.6 million tonnes, with a record catch of tuna and tuna-like species of more than 7 million tonnes.⁶³ Sharks, rays and chimaeras' yearly global catches have been pretty stable since 2005 at around 760,000 tonnes, with a total annual shark catch estimate of 520,000 tonnes.⁶⁴ Rogers et al estimated that around 10 million tonnes of highly migratory and straddling fish stocks were caught on the high seas, which represents more than 12 per cent of the global annual average fisheries catch.⁶⁵ These 10 million tonnes of high seas fish are estimated at a landed value of around 16 billion US dollars per year, which represents around 15 per cent of the total global landed value.⁶⁶

Given the importance of fishing for the Southeast Pacific region, the impact that fisheries has on biodiversity and the fact that fishing is the main threat to biodiversity in this region, this thesis will focus on the conservation of high seas biodiversity in the Southeast Pacific from a fisheries-threat perspective.

2.3.4 Fisheries in the Southeast Pacific

According to the 2014 SOFIA report, the anchoveta (*Engraulis ringens*), the Araucanian herring (*Strangomera bentincki*) and the jumbo flying squid (*Dosidicus gigas*) were the most abundant species caught in 2011 in the Southeast Pacific.⁶⁷ The anchoveta remains the main fish caught in this region, amounting to 54 per cent of the total catch for the Southeast Pacific in 2012 (Figure 2.6).⁶⁸ This species also represents the largest catch worldwide.⁶⁹

W Clark, 'Current Problems in the Management of Marine Fisheries' (2007) 316 *Science* 1713; Bethan C O'Leary et al, 'Fisheries Mismanagement' (2011) 62(12) *Marine pollution bulletin* 2642; J A Anticamara et al, 'Global Fishing Effort (1950-2010): Trends, Gaps, and Implications' 107 *Fisheries Research* 131; Christian Mullon, Pierre Fréon and Philippe Cury, 'The Dynamics of Collapse in World Fisheries' (2005) 6 *Fish and Fisheries* 111. On rebuilding stocks, see, eg: Boris Worm et al, 'Rebuilding Global Fisheries' (2009) 325 *Science* 578; Steven A Murawski 'Rebuilding Depleted Fish Stocks: the Good, the Bad, and, mostly, the Ugly' (2010) 67 *ICES Journal of Marine Science* 1830.

⁶³ *FAO 2014 SOFIA* 5 and 6. The 2012 overall catch figure excludes the highly variable anchoveta catches.

⁶⁴ *Ibid* 6 and 17.

⁶⁵ Rogers et al, above n 6, 13.

⁶⁶ *Ibid*.

⁶⁷ *FAO 2014 SOFIA* 39.

⁶⁸ There are two stocks of anchoveta in the Southeast Pacific: the first one is found off northern-central Peru between 3°S and 15°S and one off southern Peru and northern Chile between 16°S and 24°S (FAO, 'Review of the State of World Marine Fishery Resources' (Fisheries and Aquaculture Technical Paper no 569, FAO, 2011) ('*FAO 2011 Review*') 204).

⁶⁹ *Ibid* 203.

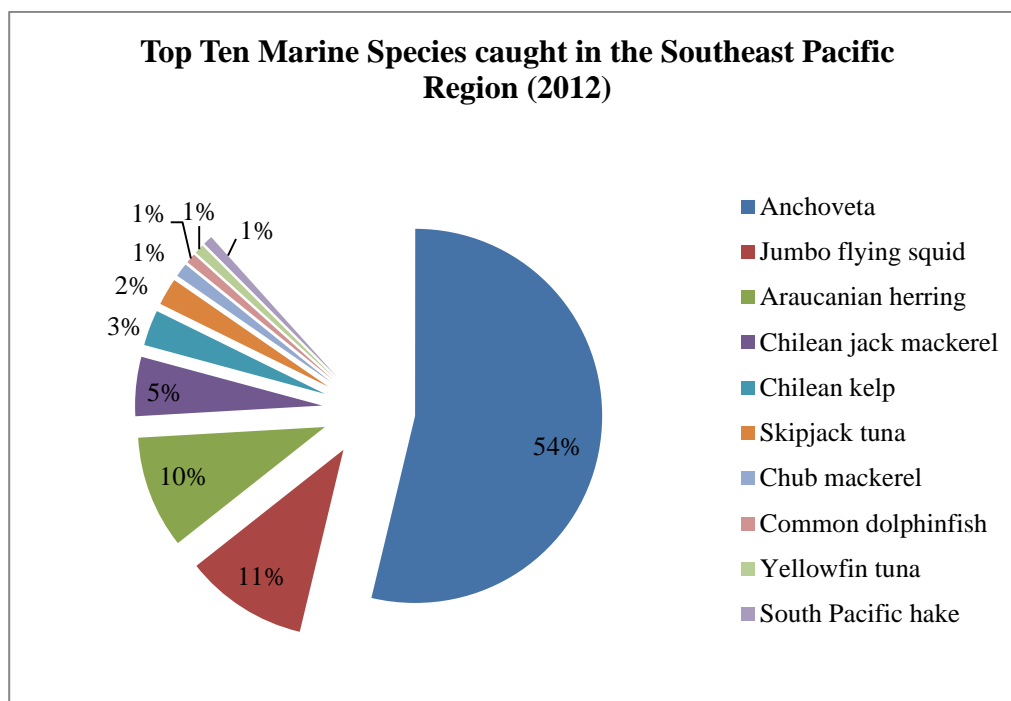


Figure 2.6: Top Ten Marine Species caught in the FAO Statistical Area No. 87 in 2012 with their Respective Percentage Numbers⁷⁰

Fisheries for the anchoveta took off in the late 1950s before collapsing in the early 1970s. The fisheries peaked again in the mid-1990s and the early 2000s before declining again in the last few years. According to the 2014 SOFIA report, the two main stocks of anchoveta are considered to be fully exploited.⁷¹ Being a coastal species, the anchoveta is particularly vulnerable to ENSO fluctuations which translate into large variations in the catch production of this species.⁷² The variation in this species' catch is so large that the FAO excludes it from its total global capture production catch estimate. Peru and Chile, whose fisheries are largely based on this species, have been particularly affected by this catch decrease.⁷³

⁷⁰ This is based on the percentage for the whole catch being 100 per cent. Data obtained from FAO Fisheries and Aquaculture Department, Statistics and Information Service FishStatJ: Universal software for fishery statistical time series. Copyright 2011. FishstatJ Version 2.1.1 was used to analyse the data. This version includes the FAO Capture Production data 1950-2012 released in March 2014. Source: <http://www.fao.org/fishery/statistics/software/fishstatj/en> (accessed: 8 May 2014).

⁷¹ *FAO 2014 SOFIA* 38. Most of the anchoveta catches come from the northern-central Peruvian stock, which is generally found within the national jurisdiction of Peru and exploited by Peruvian fleets. This stock of anchoveta may migrate north into Ecuadorian waters during particularly cold years or when the Humboldt Current is particularly strong. The other anchoveta stock, the southern stock, is only exploited by Chilean fleets and only represents a small component of the overall catch (*FAO 2011 Review* 201).

⁷² The anchoveta is a small pelagic fish found in surface waters up to 80 km off the coasts of South America. Its distribution ranges from northern Peru to southern Chile and is linked to the Humboldt Current and therefore varies with El Niño/La Niña events (<http://www.fao.org/fishery/species/search/en>; accessed: 11 March 2013).

⁷³ *FAO 2014 SOFIA* 21.

Once very abundant in the Southeast Pacific waters, the South American pilchard was heavily fished between the mid-1970s and late 1990s, which resulted in the depletion of the stock.⁷⁴ Since then, the fishery for this species has remained minimal with about 300 tonnes of this species caught in the Southeast Pacific in 2008 and 2009.⁷⁵ It is now considered to be moderately to fully exploited.⁷⁶

The Chilean jack mackerel is now the fourth caught fish species, representing five per cent of the total catch in the Southeast Pacific in 2012 (Figure 2.6).⁷⁷ This fishery has been declining since it peaked in the mid-1990s and is now considered to be overexploited.⁷⁸ This decline prompted Chile, together with Australia and New Zealand, to propose the establishment of a RFMO for the South Pacific to ensure a better management for these stocks. This RFMO has been operational since 2012 as the South Pacific Regional Fisheries Management Organisation (SPRFMO).⁷⁹

Both the jumbo flying squid (*Dosidicus gigas*) and the Araucanian herring (*Strangomera bentincki*) have become the second and third most important catch species for the Southeast Pacific, representing 11 per cent and 10 per cent of the total catch in this area in 2012, respectively (Figure 2.6).⁸⁰ The jumbo flying squid fisheries took off in the early 1990s and have sustained high catch levels since the early 2000s. The Araucanian herring fisheries peaked in the late 1980s and have remained at high

⁷⁴ The South American pilchard, also known as the South American sardine, is a coastal species found in depths up to 40 m along the coasts of Peru and Chile as well as in the Galapagos Islands (<http://www.fao.org/fishery/species/search/en>; accessed: 18 March 2013). Three sub-stocks have been described for this fish species: the northern stock is found off Ecuador and Peru between 1°S and 15°S. It is believed that the population found around the Galapagos Islands is a sub-stock of this one. The central stock is found off Peru and northern Chile between 15°S and 25°S. The southern stock is found off Chile around Coquimbo (30°S) and Talcahuano (37°S) (FAO 2011 Review 204).

⁷⁵ FAO 2011 Review 200.

⁷⁶ Ibid 205.

⁷⁷ The Chilean jack mackerel is a schooling fish widely distributed across the South Pacific between Australia and South America and is found in surface coastal waters as well as around islands, banks and seamounts (<http://www.fao.org/fishery/species/search/en>; accessed: 11 March 2013).

⁷⁸ Chilean jack mackerel catches have decreased from 5 million tonnes in the mid-1990s to 0.7 million tonnes in 2010 (FAO Fisheries and Aquaculture Department, 'The State of World Fisheries and Aquaculture 2012' (Report, FAO, 2012) ('FAO 2012 SOFIA') 8). Stocks of Chilean jack mackerel, estimated to be about 30 million tonnes at the beginning of the negotiations around the establishment of SPRFMO, are estimated to have fallen to around 3 million tonnes in 2011 (Rogers et al, above n 6, 6). With the establishment of SPRFMO in 2009, conservation measures for Chilean jack mackerel have been adopted, which will show a decrease in catches for this species in the future (FAO 2014 SOFIA 13).

⁷⁹ SPRFMO was established through its 2009 Convention, which entered into force in 2012, and has since held two Commission meetings; a 2013 meeting in Auckland, New Zealand, and a 2014 meeting in Manta, Ecuador.

⁸⁰ The jumbo flying squid is distributed in pelagic waters up to 500 m depth along the western side of the American continent from northern California to southern Chile with higher abundances along the coasts of South America (<http://www.fao.org/fishery/species/search/en>; accessed: 11 March 2013). Stocks of jumbo flying squid are considered to be moderately exploited (FAO 2011 Review 208). Fishing for jumbo flying squid takes place essentially off Chile, Peru and the Gulf of California. The Peruvian and Korean fisheries are the largest for this species within the South Pacific while the Chilean fishery is small and this species is mainly caught as a bycatch within the exclusive economic zone (EEZ) (SPRFMO, 'Report of the Third International Meeting on the Establishment of the Proposed South Pacific Regional Fisheries Management Organisation' (30 April-4 May 2007) 41). The Araucanian herring is a small pelagic fish with a narrow distribution range in the coastal waters off mid- to southern Chile (<http://www.fao.org/fishery/species/search/en>; accessed: 11 March 2013).

levels since, although the fisheries are now considered to be fully exploited.⁸¹ As for the anchoveta, the Araucanian herring is a coastal species that does not occur on the high seas.⁸²

Together, the anchoveta, the jumbo flying squid, the Araucanian herring and the Chilean jack mackerel account for approximately 80 per cent of the total catch for the Southeast Pacific in 2012 (Figure 2.6). The changes in catch composition and abundance are a result of States' changes in fishing effort in the region as well as the influence of variable environmental conditions. While the fisheries in the Southeast Pacific were mainly dominated by anchoveta fisheries up to the mid-1970s, it has become a more multispecies fishery since then. With increasing anchoveta catches, the multispecies fisheries tend to decline and re-boost when the anchoveta catches are declining.⁸³

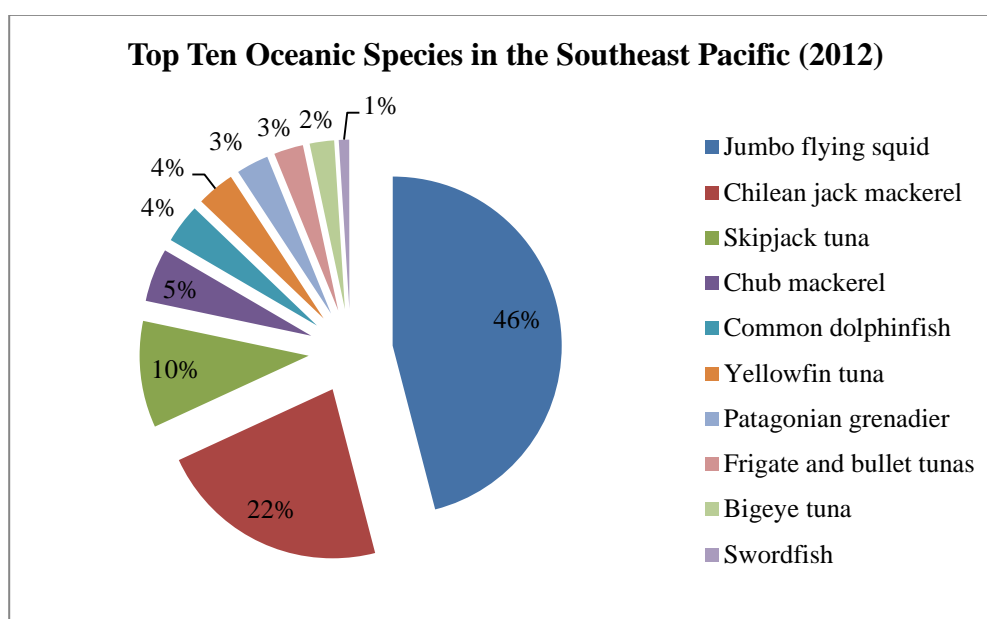


Figure 2.7: Top Ten Oceanic Species caught in the FAO Statistical Area No. 87 in 2012 with their Respective Percentage Numbers⁸⁴

⁸¹ *FAO 2011 Review* 205.

⁸² The anchoveta is found in surface waters up to 80 km off the coasts of South America. Its distribution ranges from northern Peru to southern Chile and is linked to the Humboldt Current and therefore varies with El Niño/La Niña events. The Araucanian herring has a very narrow distribution range in the coastal waters off mid- to southern Chile (<http://www.fao.org/fishery/species/search/en>; accessed: 11 March 2013).

⁸³ *FAO 2011 Review* 199.

⁸⁴ The percentage is based on these ten species only and not on the whole catch. To determine which species was oceanic, and thus likely to be caught in ABNJ, the list of species from FAO Technical Paper 435 as well as SPRFMO's Species Profiles were used (<http://www.fao.org/docrep/005/y4449e/y4449e00.htm> and <https://www.sprfmo.int/species-profiles/>; both accessed: 8 May 2014). Data obtained from FAO Fisheries and Aquaculture Department, Statistics and Information Service FishStatJ: Universal software for fishery statistical time series. Copyright 2011. FishstatJ Version 2.1.1 was used to analyse the data. This version includes the

Jumbo flying squid, Chilean jack mackerel and skipjack tuna (*Katsuwonus pelamis*) were the main oceanic species caught in the Southeast Pacific in 2012, representing 46 per cent, 22 per cent and 10 per cent respectively of the top ten oceanic species caught (Figure 2.7).⁸⁵

The other main oceanic species caught in this region include: Chub mackerel (*Scomber japonicus*; five per cent of the top ten oceanic species catch of this region for 2012), common dolphinfish (*Coryphaena hippurus*; four per cent of the top ten oceanic species of this region for 2012), yellowfin tuna (*Thunnus albacares*; four per cent of the top ten oceanic species of this region for 2012), Patagonian grenadier (*Macruronus magellanicus*; three per cent of the top ten oceanic species of this region for 2012), bigeye tuna (*Thunnus obesus*; two per cent of the top ten oceanic species of this region for 2012) and swordfish (*Xiphias gladius*; one per cent of the top ten oceanic species of this region for 2012) (Figure 2.7).⁸⁶ Chub mackerel is mainly caught as a bycatch species in the Chilean jack mackerel fisheries.⁸⁷ Stock assessments for this species are uncertain due to the lack of information but it is hypothesised that chub mackerel stocks are moderately to fully exploited. This fish species also experiences large fluctuation in abundance.⁸⁸

FAO Capture Production data 1950-2012 released in March 2014. Source: <http://www.fao.org/fishery/statistics/software/fishstatj/en> (accessed: 8 May 2014).

⁸⁵ The skipjack tuna is an oceanic fish species distributed across all oceans in the temperate and warm waters (<http://www.fao.org/fishery/species/search/en>; accessed: 11 March 2013). Skipjack tuna is a highly migratory species as defined in Annex I of the LOSC.

⁸⁶ The chub mackerel is a small pelagic fish found in warm and temperate coastal waters of the Atlantic, Indian and Pacific oceans down to 300 m depth and up to the continental slope. They are often associated with other schooling fish, notably the Chilean jack mackerel (<http://www.fao.org/fishery/species/search/en>; accessed: 11 March 2013). They have a primarily coastal distribution down to 300 m depth. Although it has a widespread distribution, the *Scomber japonicas* species of the chub mackerel is restricted to the Southeast Pacific where its distribution extends to the high seas at the southern end of its range. Its counterpart *Scomber australasicus* is found in the Southwest Pacific (SPRFMO, 'Report of the Third International Meeting on the Establishment of the Proposed South Pacific Regional Fisheries Management Organisation' (30 April-4 May 2007) 40).

The common dolphinfish is an epipelagic fish found worldwide in tropical and subtropical open waters that also approaches the coast. In the Pacific it is particularly found in the Western Central Pacific (<http://www.fao.org/fishery/species/search/en>; accessed: 12 August 2014).

The yellowfin tuna is an oceanic species widely distributed worldwide in tropical and subtropical surface waters (<http://www.fao.org/fishery/species/search/en>; accessed: 11 March 2013). Yellowfin tuna is a highly migratory species as defined in Annex I of the LOSC. Its status is classified as 'near threatened' on the IUCN Red List (<http://www.iucnredlist.org/>, accessed: 12 August 2014).

The Patagonian grenadier is found around the Southern coasts off western and eastern South America. The largest numbers are caught off southern Chile. It is a benthic species that is found in depths up to 500 m, mainly over the continental shelf (<http://www.fao.org/fishery/species/search/en>; accessed: 11 March 2013). Stocks of Patagonian grenadier are overexploited (FAO 2011 Review 207).

Bigeye tuna is an epipelagic and mesopelagic species found in oceanic waters down to 250m depth. It is found worldwide in tropical and subtropical waters, apart from the Mediterranean (<http://www.fao.org/fishery/species/search/en>; accessed: 12 August 2014). Its status is classified as 'vulnerable' on the IUCN Red List (<http://www.iucnredlist.org/>, accessed: 12 August 2014).

Swordfish is an epipelagic and mesopelagic species found worldwide in surface oceanic waters warmer than 13°C. In the Eastern Pacific, it is found between 50°N and 35°S (<http://www.fao.org/fishery/species/search/en>; accessed: 12 August 2014). Swordfish is a highly migratory species as defined in Annex I of the LOSC.

⁸⁷ SPRFMO, above n 85.

⁸⁸ FAO 2011 Review 206.

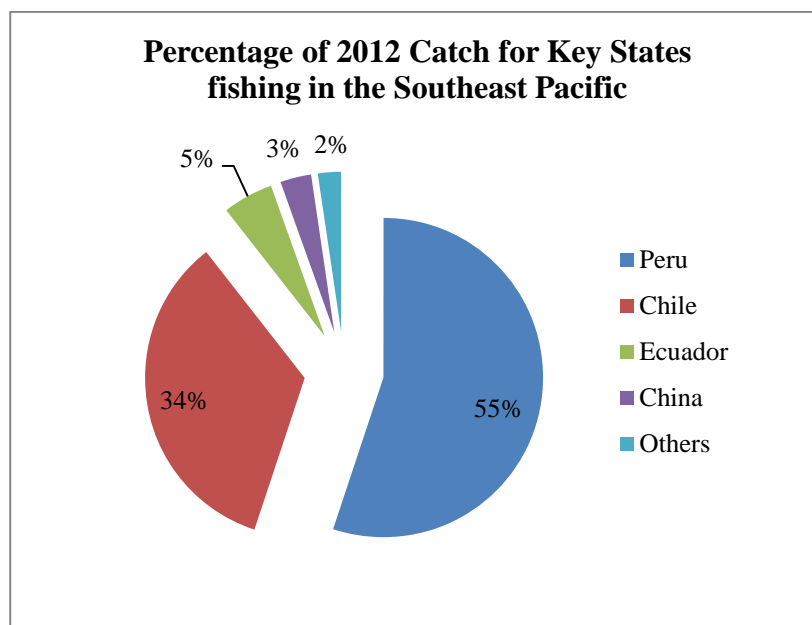


Figure 2.8: Percentage of 2012 Catch for Key States fishing in the Southeast Pacific⁸⁹

Between 2000 and 2012, 28 flag States fished in the Southeast Pacific and 16 of them were actively fishing in 2012.⁹⁰ The main fishing nations for this region are the four coastal States, particularly Peru, Chile and Ecuador, who fish both in waters under their own jurisdiction and in the adjacent high seas and account for 95 per cent of the fishing occurring in the Southeast Pacific. Peru is the main fishing nation in the region, catching a total of 4,811,508 tonnes of fish (55 per cent of the total catch) in 2012, followed by Chile (2,997,804 tonnes in 2012; 34 per cent of the total catch), Ecuador (443,848 tonnes in 2012; five per cent of the total catch) and China (274,695 tonnes in 2012; three per cent of the total catch) (Figure 2.8).⁹¹ Colombian catches remain lower than those of the other South American coastal States' (44,068 tonnes in 2012; one per cent of the total catch), which places Colombia in fifth position.⁹² Appendix A provides a summary of 2012 catch data for States fishing in the Southeast Pacific.

⁸⁹ The category 'Others' groups the countries whose catches are less than one per cent of the total catch for the Southeast Pacific region, namely (in order of proportion): Colombia, Panama, Venezuela, Vanuatu, Taiwan Province of China, Spain, Japan, Republic of Korea, unidentified countries, Guatemala, Nicaragua, Mexico and Portugal. Data obtained from FAO Fisheries and Aquaculture Department, Statistics and Information Service FishStatJ: Universal software for fishery statistical time series. Copyright 2011. FishstatJ Version 2.1.1 was used to analyse the data. This version includes the FAO Capture Production data 1950-2012 released in March 2014. Source: <http://www.fao.org/fishery/statistics/software/fishstatj/en> (accessed: 8 May 2014).

⁹⁰ See list of States that are fishing or have fished in the Southeast Pacific in Appendix A and Appendix B.

⁹¹ Peru ranks at number 4 and Chile at number 8 of the main countries involved in global fisheries (FAO 2014 *SOFIA* 10).

⁹² Data obtained from FAO Fisheries and Aquaculture Department, Statistics and Information Service FishStatJ: Universal software for fishery statistical time series. Copyright 2011. FishstatJ Version 2.1.1 was used to analyse the data. This version includes the FAO Capture Production data 1950-2012 released in March 2014. Source: <http://www.fao.org/fishery/statistics/software/fishstatj/en> (accessed: 8 May 2014). This catch data is for FAO Major Fishing Area 87 (Southeast Pacific) and therefore includes catches within and beyond national jurisdiction.

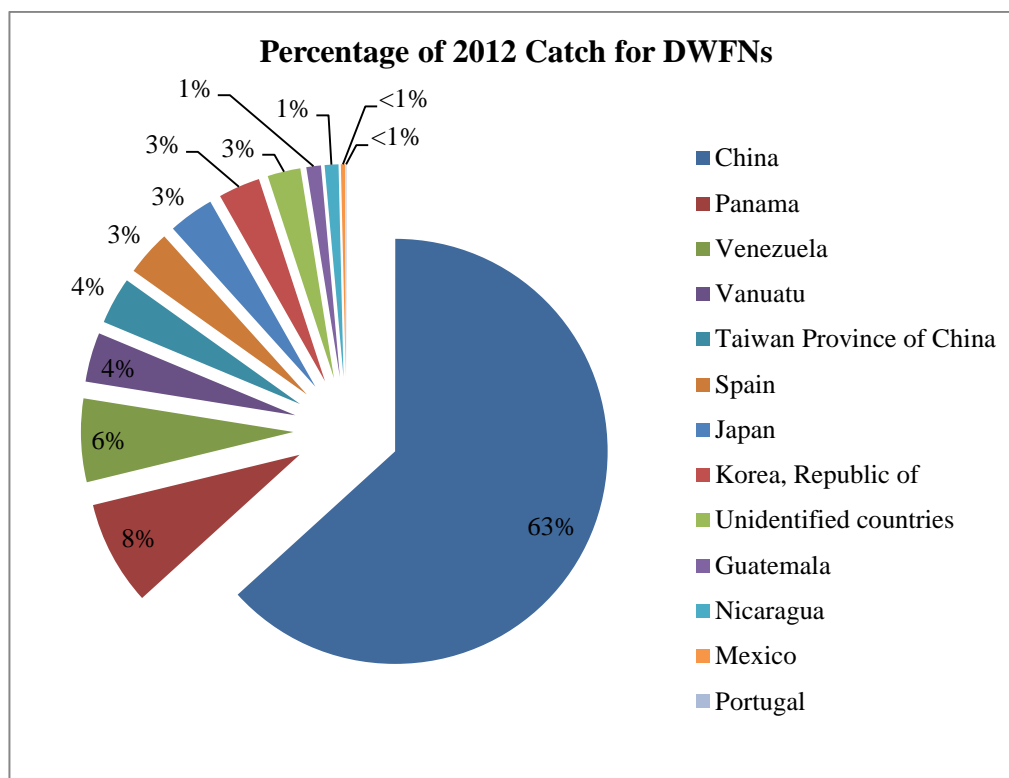


Figure 2.9: Percentage of 2012 Catch for DWFNs in the Southeast Pacific⁹³

A number of distant water fishing nations (DWFNs) have been fishing in the Southeast Pacific region between 2000 and 2009. Most of them are from neighbouring Latin American countries but there are also DWFNs from Asian, European, African and Pacific Island countries as well as the United States of America (USA) (Figure 2.9).⁹⁴ As mentioned above, China is the main DWFN fishing in the Southeast Pacific, followed by other key flag States such as Panama (34,471 tonnes in 2012; eight per cent of the DWFNs' catch) and Venezuela (27,529 tonnes in 2012; six per cent of the DWFNs' catch) (Figure 2.9).⁹⁵ Appendix B provides a list of States that have fished in the Southeast Pacific with their catch data.

⁹³ This estimate is based on the total percentage for the DWFNs rather than on the total percentage for all the nations combined in the Southeast Pacific. This demonstrates more effectively the proportion of fishing undertaken by DWFNs. Coastal States account for 95 per cent of the fishing occurring in the Southeast Pacific. 'Unidentified countries' refer to 'other nei' (not elsewhere included) as found in the FAO data. Data obtained from FAO Fisheries and Aquaculture Department, Statistics and Information Service FishStatJ: Universal software for fishery statistical time series. Copyright 2011. FishstatJ Version 2.1.1 was used to analyse the data. This version includes the FAO Capture Production data 1950-2012 released in March 2014. Source: <http://www.fao.org/fishery/statistics/software/fishstatj/en> (accessed: 8 May 2014).

⁹⁴ Belize, Guatemala, Honduras, Mexico, Nicaragua, Panama, Uruguay, Venezuela, Japan, Republic of Korea, Taiwan Province of China, China, Faroe Islands, Germany, Lithuania, Netherlands, Poland, Portugal, Russian Federation, Spain, Ghana, Cook Island and Vanuatu, USA.

⁹⁵ LOSC art 91.1 states that 'Ships have the nationality of the State whose flag they are entitled to fly'. There must be a 'genuine link' between the State and the ship. However, the LOSC does not provide a definition of this 'genuine link'. Certain States register ships owned by other countries under their flag; these are known as flags of convenience. Therefore, some of the vessels fishing in the Southeast Pacific may not be owned by the flag State under which they are registered. Flags of convenience identified by the International Transport Workers' Federation that are fishing or have fished in the Southeast Pacific include Belize, German International Ship Register, Honduras, Netherlands Antilles, Panama and Vanuatu (Source: <http://www.itfglobal.org/en/transport->

2.4 Conservation of High Seas Biodiversity

2.4.1 Short Historical Background on Marine Conservation

Conservation first developed for terrestrial ecosystems in the late 19th century before expanding in the late 1960s and early 1970s to the marine environment, with a growing focus, particularly since the early 2000s, on the high seas.⁹⁶ The basis for marine conservation lies in the decline of marine resources, particularly fish and whale stocks, in coastal areas first and then through increasing industrialisation further out to sea that led to growing concerns worldwide towards the end of the 19th century.⁹⁷ The post-Second World War period saw the collapse of several high-value fish stocks, particularly in the North Atlantic, the North Pacific and the anchoveta stock in the Southeast Pacific in the early 1970s, and growing tensions between fishing States over decreasing stocks. These tensions led countries such as Peru, Chile and Ecuador to extend their jurisdiction over marine resources to distances of up to 200 nautical miles in the Southeast Pacific in the early 1950s, and also created conflicts, such as the Cod Wars between Iceland and the UK in the late 1950s, early 1970s and mid-1970s.⁹⁸

These concerns, together with growing technological progress and global fleet expansion, led to the establishment of several global and regional fisheries organisations (RFOs), starting in the 1940s with institutions such as the FAO, a specialised organisation of the UN, in 1943, the International Whaling Commission (IWC) in 1946 and the Inter-American Tropical Tuna Commission (IATTC) in 1949.⁹⁹ Binding agreements were also adopted from the late 1950s such as the 1958 *Convention on Fishing and Conservation of the Living Resources of the High Seas* and the 1982 LOSC.¹⁰⁰ The depletion of whale stocks in the 1960s also led to the adoption by the

sectors/seafarers/in-focus/flags-of-convenience-campaign/; accessed: 10 June 2015). Nevertheless, the LOSC provides that all flag States, regardless of State ownership, have the duty to ‘effectively exercise [their] jurisdiction and control in administrative, technical and social matters over ships flying [their] flag’ (LOSC art 94).

⁹⁶ S M Garcia, J Rice and A Charles, ‘Governance of Marine Fisheries and Biodiversity Conservation: A History’ in Serge M Garcia, Jake Rice and Anthony Charles (eds), *Governance of Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution* (Wiley-Blackwell, 2014) 3; S M Garcia, ‘Annex 1: History of Fisheries and Biodiversity Conservation: A Timeline of Key Events (1850-2012)’ in Serge M Garcia, Jake Rice and Anthony Charles (eds), *Governance of Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution* (Wiley-Blackwell, 2014) 429.

⁹⁷ Garcia et al, above n 94, 5 and 6.

⁹⁸ Ibid 6 and 7; Angela Carpenter, ‘International Protection of the Marine Environment’ in Adam D Nemeth (ed), *The Marine Environment: Ecology, Management and Conservation* (Nova Science Publishers, 2011) 51, 52 and 53. See: *Fisheries Jurisdiction Case (United Kingdom of Great Britain and Northern Ireland v Iceland)* (Merits, Judgment) [1974] ICJ Rep 3.

⁹⁹ The IWC was established by the *International Convention for the Regulation of Whaling* in 1946. This Convention succeeded to the *International Agreement for the Regulation of Whaling*, signed in 1937.

¹⁰⁰ Garcia et al, above n 94, 6 and 7; G Carleton Ray and Jerry McCormick-Ray, ‘In Pursuit of Marine Conservation’ in G Carleton Ray and Jerry McCormick-Ray (eds), *Marine Conservation: Science, Policy, and Management* (Wiley-Blackwell, 2014) 1, 1.

IWC in 1982 of a moratorium on commercial whaling to be effective from the 1985/1986 season onward. This moratorium is still in place today.¹⁰¹

Marine conservation started to develop in the late 1960s-early 1970s through aesthetic conservation, the same approach used in terrestrial conservation. The main focus was at first on the protection of coastal areas, through the establishment of MPAs, and the protection of charismatic and visible vulnerable and endangered species. These included particularly marine mammals, marine turtles and coral reefs. The conservation of other harvested marine species followed later.¹⁰² MPAs and species conservation have since remained the two main channels through which marine conservation is implemented together with more recent conservation approaches, such as the adoption of market-based measures.¹⁰³

From the 1970s onwards, States become interested in exploiting more high seas resources, particularly fisheries, and issues of overfishing and fleet overcapacity continued to be of concern.¹⁰⁴ With the establishment of the United Nations Environment Programme (UNEP) in 1972, the adoption of important legal treaties and the development of the precautionary and ecosystem approaches in 1992 and 2000, respectively, it was the start of a growing focus on anthropocentric conservation through the sustainable use and management of marine resources and the conservation of marine biodiversity.¹⁰⁵ Such important legal treaties included: the 1982 LOSC, the 1992 CBD, the 1993 *Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas* (Compliance Agreement), the 1995 *Code of Conduct for Responsible Fisheries* (Code of Conduct), and the 1995 *United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the*

¹⁰¹ <https://iwc.int/commercial> (accessed: 27 February 2015).

¹⁰² Garcia et al, above n 94, 11; Carleton Ray and McCormick-Ray, above n 97, 3.

¹⁰³ Garcia et al, above n 94, 11.

¹⁰⁴ Ibid 7.

¹⁰⁵ Ibid 7, 8 and 12. The 1992 United Nations Conference on Environment and Development introduced the precautionary approach in Principle 15 of its *Rio Declaration* and the ecosystem approach was endorsed at the fifth COP to the CBD in 2000. See Section 3.3.2.2 of Chapter 3 for more information on these approaches. IUCN first provided a definition of anthropocentric conservation in its 1980 *World Conservation Strategy* as: 'the management of human use of the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations. Thus conservation is positive, embracing preservation, maintenance, sustainable utilization, restoration, and enhancement of the natural environment. Living resource conservation is specifically concerned with plants, animals and microorganisms, and with those non-living elements of the environment on which they depend'. This 1980 Strategy emphasises the mutual dependence of conservation and sustainable development and therefore the necessity to integrate both to 'secure the survival and wellbeing of all people' (IUCN, 'World Conservation Strategy' (Report, IUCN, 1980) 2 and 3).

Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UNFSA).¹⁰⁶ Conservation also evolved to become a more stakeholder-inclusive and participative process, taking into account socio-economic aspects.¹⁰⁷

Since the early 2000s, there has been a growing interest in marine biodiversity conservation and a steady focus on the value and contribution of biodiversity towards human livelihoods and wellbeing. Conservation measures have also evolved to include market-based measures and other economic incentives complementary with conservation measures adopted for impact reduction. These market based measures not only produce returns to support management but also serve to increase compliance with conservation measures in place.¹⁰⁸ There is also a growing focus on the conservation of high seas biodiversity, notably through the work undertaken by the *Ad Hoc Open-ended Informal Working Group to Study Issues Relating to the Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction* (BBNJ Working Group).¹⁰⁹ The FAO has also contributed to the conservation of biodiversity in ABNJ through its work on the protection of vulnerable marine ecosystems (VMEs) and the reduction of impacts on deep-sea biodiversity from destructive fishing practices and the CBD through its work on the identification of EBSAs in ABNJ.¹¹⁰

2.4.2 Rapprochement between Fisheries and Biodiversity Governance Streams

Fisheries management and marine conservation, while having common roots in the decline of marine, particularly fishery, resources, have evolved along a similar path albeit within two different governance streams.¹¹¹ Fisheries governance focused mainly on a utilitarian approach to conservation, by focusing on the contribution of fishery resources to human livelihood through sustainable use, while marine conservation focused mainly on an aesthetic approach to conservation through protection, in which

¹⁰⁶ *Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas*, opened for signature 29 November 1993, ATS 26 (entered into force 24 April 2003) ('*Compliance Agreement*'); United Nations Food and Agriculture Organization, *Code of Conduct for Responsible Fisheries* (1995) ('*Code of Conduct*'); *United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, opened for signature 8 September 1995, ATS 8 (entered into force 11 December 2001) ('*UNFSA*').

¹⁰⁷ Garcia et al, above n 94, 12.

¹⁰⁸ Ibid 13; Jennifer Jacquet et al, 'Conserving Wild Fish in a Sea of Market-Based Efforts' (2009) 44(1) *Oryx* 45.

¹⁰⁹ See Section 2.6.1 of this chapter.

¹¹⁰ See Section 2.6.5 of this chapter.

¹¹¹ S M Garcia, J Rice and A Charles, 'Governance of Marine Fisheries and Biodiversity Conservation: Convergence or Coevolution?' in Serge M Garcia, Jake Rice and Anthony Charles (eds), *Governance of Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution* (Wiley-Blackwell, 2014) 18, 30.

environmental ethics takes primary place.¹¹² These different approaches have led to tensions between the two streams over many decades but recent cross-sectoral developments in ocean policy since the 1970s, mainly brought forward by the 1972 United Nations Conference on the Human Environment (Stockholm Conference), 1992 United Nations Conference on Environment and Development (Rio Summit), 2002 WSSD and 2012 United Nations Conference on Sustainable Development (Rio+20 Meeting), have brought these two streams closer together.¹¹³ This is due in large part to the adoption of the precautionary and ecosystem approaches in marine conservation and management; the necessity for responsible fisheries, taking into account their impacts on bycatch and other marine species, habitats and VMEs; and the necessity for biodiversity conservation to broaden its realm beyond mere habitat and species preservation to include the sustainable use of resources, spatial planning and integrated conservation.¹¹⁴

Garcia et al suggest that such rapprochement can be due to adaptive coevolution, and particularly unintentional convergence, that has emerged notably in the 1972 Stockholm Conference, 1992 Rio Summit, 2002 WSSD and 2012 Rio+20 Meeting, as both streams ‘operate in overlapping natural and human domains, pursue partially overlapping objectives and share global policy, economic and environmental drivers’.¹¹⁵ They further argue that the need to better coordinate and harmonise both streams is gaining growing awareness and recognition.¹¹⁶ As highlighted by Charles et al, while there are limits to the integration of these two governance streams, notably because of the ‘little flexibility in compromising one’s risk tolerances just for the sake of ‘sharing’ the way forward’, fisheries and conservation streams cannot ‘achieve [their] own objectives without cooperation from and impact on the other’.¹¹⁷ This cooperation through ‘constructive coevolution’ between the two governance streams has been particularly

¹¹² Ibid; Garcia et al, above n 94, 9.

¹¹³ Garcia et al, above n 108, 30.

¹¹⁴ A Charles, S M Garcia and J Rice, ‘A Tale of Two Streams: Synthesizing Governance of Marine Fisheries and Biodiversity Conservation’ in Serge M Garcia, Jake Rice and Anthony Charles (eds), *Governance of Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution* (Wiley-Blackwell, 2014) 413, 415-416. See also: Dave Preikshot and Daniel Pauly, ‘Global Fisheries and Marine Conservation: Is Coexistence Possible?’ in Elliot A Norse and Larry B Crowder (eds), *Marine Conservation Biology: The Science of Maintaining the Sea’s Biodiversity* (Island Press, 2005) 185.

¹¹⁵ Charles et al, above n 111, 417; Garcia et al, above n 108, 31. Garcia et al define convergence as occurring ‘when two or more independent adaptation processes unintentionally produce similar responses to common ‘forcing’ contextual factors (eg. overarching policies, demography, markets)’ and coevolution as occurring ‘when two or more interdependent adaptation processes intentionally (albeit sometimes reluctantly) adapt to each other in response to their direct interaction (cooperation or competition)’ (Garcia et al, above n 108, 18).

¹¹⁶ Charles et al, above n 111, 416 and 418.

¹¹⁷ Ibid 416 and 423.

encouraged at the regional level through the work of RFMOs and regional seas organisations (RSOs), with substantial progress in this respect in the North-East Atlantic through the work of the Commission for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) and the North-East Atlantic Fisheries Commission (NEAFC).¹¹⁸

The 2011 Joint Expert Meeting on Addressing Biodiversity Concerns in Sustainable Fisheries organised by the CBD with the participation of cross-sectoral experts, found that, although ‘fairly full attention to the major biodiversity [obligations] in the RFMO conventions and overarching high-level policies’ were given, ‘implementation (...) is highly variable, and often inadequate’.¹¹⁹ Experts agreed that there is a need to enhance the governance and assessment parts of RFMO mandates ‘so that biodiversity [obligations] are explicitly a core part of their work and accountability’.¹²⁰ Also emphasised was that ‘accountability for fisheries management agencies to achieve biodiversity objectives should be as high as the accountability of those agencies for achieving fisheries objectives’ and the need for regional cooperation.¹²¹ Options proposed by this Joint Expert Meeting include: integrating biodiversity [obligations] in the ecosystem approach to fisheries (EAF) management; increasing the coherence in the roles of biodiversity and fisheries agencies and other sectoral institutions; integrating the application of management tools as well as enforcement and surveillance; using marine spatial planning to better integrate both components; and developing processes and mechanisms for increased transboundary cooperation.¹²²

As will be illustrated in the further sections of this chapter, regional cross-sectoral cooperation is a key requirement for successful high seas management and the conservation of high seas biodiversity, with RFMOs and RSOs playing an important role in regional ocean governance and in promoting integrated ocean management.¹²³

¹¹⁸ Ibid 417 and 419; Convention on Biological Diversity, *Report of Joint Expert Meeting on Addressing Biodiversity Concerns in Sustainable Fisheries*, UNEP/CBD/SBSTTA/16/INF/13, Subsidiary Body on Scientific Technical and Technological Advice, 16th meeting, Item 6.2 of the Provisional Agenda (5 March 2012) (*‘Biodiversity Concerns Report’*), annex III para 16. See also Section 2.7.1 of this chapter.

¹¹⁹ *Biodiversity Concerns Report* annex III, para 8 and para 9.

¹²⁰ Ibid annex III, para 1e.

¹²¹ Ibid annex III, para 1f and para 24.

¹²² Ibid annex III, para 12, para 13, para 15, para 18 and para 20.

¹²³ See Section 2.7 of this chapter. The agreed strategic directions of Regional Seas Conventions and Action Plans for the period 2013-2016 explicitly mention the need for coordination with other agencies and mechanisms, including with RFMOs (See: <http://www.unep.org/regionalseas/about/strategy/default.asp> (accessed: 11 June 2015), para 3 and para 6). See, eg: Kristina M Gjerde et al, ‘Options for Addressing Regulatory and Governance Gaps in the International Regime for the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction’ (IUCN Environmental Policy and Law Papers

2.4.3 Definition of Biodiversity Conservation

Garcia et al describe two types of conservation philosophies that have influenced and shaped the conservation approach since its inception: the first type, termed aesthetic or ecocentric conservation, sees biodiversity conservation as necessary from an environmental ethics perspective, to preserve beautiful scenery, charismatic species and important ecosystems from the impacts of human activities, while the other one, termed utilitarian or anthropocentric conservation, sees biodiversity conservation as a necessary contribution to present and future human livelihood and wellbeing.¹²⁴

As noted above, MPAs and species conservation remain the main ways through which marine conservation is exercised.¹²⁵ Providing the basic framework convention for the conservation of biodiversity, the CBD offers a legal definition for the *in-situ* conservation of biodiversity, as:

*‘the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties’.*¹²⁶

The CBD provides the legal obligation for States to conserve and sustainably use biodiversity in its entirety and to include it in their national strategies and sectoral plans.¹²⁷ Building on this general obligation to conserve the whole of biodiversity, the CBD prescribes an approach to the conservation and sustainable use of biodiversity by particularly requesting States to identify unique, endangered or vulnerable biological resources and ecosystems and implementing specific measures for their conservation.¹²⁸ *In-situ* conservation measures specified in the CBD include the establishment of a system of protected areas, the management of biological resources both within and outside these protected areas, the protection of ecosystems and habitats, the restoration

Online Marine Series No 2, IUCN, 2008); Rayfuse and Warner, above n 30; Ingrid Kvalvik, 'Managing Institutional Overlap in the Protection of Marine Ecosystems on the High Seas. The Case of the North East Atlantic' (2012) 56 *Ocean & Coastal Management* 35; Elisabeth Druel et al, 'Governance of Marine Biodiversity in Areas Beyond National Jurisdiction at the Regional Level: Filling the Gaps and Strengthening the Framework for Action. Case Studies from the North-East Atlantic, Southern Ocean, Western Indian Ocean, South West Pacific and the Sargasso Sea' (IDDRI Study No 04/12, IDDRI, 2012); Jeff A Ardron et al, 'The Sustainable Use and Conservation of Biodiversity in ABNJ: What Can Be Achieved Using Existing International Agreements?' (2014) 49 *Marine Policy* 98; Julien Rochette et al, 'The Regional Approach to the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction' (2014) 49 *Marine Policy* 109; 2010 *BBNJ Report* para 46; 2011 *BBNJ Report*.

¹²⁴ Garcia et al, above n 94, 9.

¹²⁵ Ibid 11.

¹²⁶ CBD art 2.

¹²⁷ Ibid art 1 and art 6.

¹²⁸ Ibid art 7 and annex I.

of degraded ecosystems, the development of regulatory provisions for the protection of threatened species, and the regulation of harmful activities.¹²⁹ States must also adopt measures to prevent and minimise harm and impacts to biodiversity.¹³⁰ Biodiversity must also be used sustainably ‘in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations’.¹³¹ The IUCN (International Union for Conservation of Nature) Red List of Threatened Species, IUCN Red List of Ecosystems, *Convention on the Conservation of Migratory Species of Wild Animals* (CMS) and *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES) provide lists of threatened, endangered and particularly vulnerable species and ecosystems, including marine ones, that require protection and for which special conservation and trade measures should be adopted.¹³² The CBD itself does not provide further details as to how much should be conserved. Since the CBD came into force, several global targets have been adopted under the auspices of the UN to quantify the conservation of marine biodiversity, especially focusing on the application of area-based management tools such as MPAs.

At the 2002 WSSD, governments agreed to: ‘maintain or restore [fish] stocks to levels that can produce the maximum sustainable yield’ by 2015; and to ‘develop and facilitate the use of diverse approaches and tools, including the ecosystem approach, the elimination of destructive fishing practices, the establishment of MPAs consistent with international law and based on scientific information, including representative networks by 2012 and time/area closures for the protection of nursery grounds and periods (...)’.¹³³

Under Millennium Development Goal 7 on Ensuring Environmental Sustainability, the UN promoted the significant reduction in the rate of biodiversity loss by 2010 and the establishment of MPAs to cover, together with land-based protected areas, 14 per cent by 2012.¹³⁴

¹²⁹ Ibid art 8.

¹³⁰ Ibid art 10.

¹³¹ Ibid art 1 and art 2.

¹³² See: <http://www.iucnredlist.org/>; <http://www.iucnredlistofecosystems.org/>; <http://www.cms.int/en/species>; <http://www.cites.org/eng/disc/species.php> (all accessed: 3 January 2015).

¹³³ JPOI para 31a and para 31c.

¹³⁴ Target 7B. Source: <http://www.un.org/millenniumgoals/envIRON.shtml> (accessed: 3 January 2015).

The WSSD goal on MPAs is enshrined in the 2004 and 2010 MPA targets adopted by the CBD. The CBD adopted at its COP 7 in 2004 a target for the establishment of ‘a global network of comprehensive, representative and effectively managed national and regional [marine] protected area system by 2012.’¹³⁵ Specifically, ‘at least 10 [per cent] of each of the world’s ecological regions [should be] effectively conserved’ and ‘areas of particular importance to biodiversity protected’.¹³⁶ Furthermore, it adopted the targets of integrating ‘all protected areas and protected area systems (...) into the wider (...) seascape, and relevant sectors, by applying the ecosystem approach and taking into account ecological connectivity and the concept (...) of ecological networks’ by 2015 and of applying ‘effective mechanisms for identifying and preventing, and/or mitigating the negative impacts of key threats to protected areas’ by 2008.¹³⁷

In 2010, the CBD COP 10 agreed, by 2020 to: extend the 2004 target to conserve 10 per cent ‘of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, (...) through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider (...) seascape’;¹³⁸ and to ensure that:

*‘all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits’.*¹³⁹

¹³⁵ Convention on Biological Diversity, *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Seventh Meeting*, UNEP/CBD/COP/DEC/VII/28, Conference of the Parties to the Convention on Biological Diversity, 7th meeting, Agenda Item 24 (13 April 2004), Target to Goal 1.1.

¹³⁶ Convention on Biological Diversity, *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Seventh Meeting*, UNEP/CBD/COP/DEC/VII/30, Conference of the Parties to the Convention on Biological Diversity, 7th meeting, Agenda Item 26 (13 April 2004), Targets 1.1 and 1.2 to Goal 1.

¹³⁷ Convention on Biological Diversity, *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Seventh Meeting*, UNEP/CBD/COP/DEC/VII/28, Conference of the Parties to the Convention on Biological Diversity, 7th meeting, Agenda Item 24 (13 April 2004), Targets to Goals 1.2 and 1.5.

¹³⁸ Convention on Biological Diversity, *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Tenth Meeting: X/2. The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets*, UNEP/CBD/COP/DEC/X/2, Conference of the Parties to the Convention on Biological Diversity, 10th meeting, Agenda Item 4.4 (29 October 2010), Aichi Biodiversity Target 11.

¹³⁹ Ibid Aichi Biodiversity Target 6.

As outlined in Section 2.6.5 below, tools have been developed under the CBD, FAO and International Maritime Organization (IMO) to identify important and sensitive marine areas that could qualify as potential MPAs. At present, less than three per cent of coastal and marine areas are protected; this percentage is as low as 0.17 per cent for ABNJ (see also Section 2.6.4 below).¹⁴⁰

While the CBD approach to the conservation and sustainable use of biodiversity particularly focuses on vulnerable and endangered species and ecologically sensitive ecosystems, the CBD outlines a general legal obligation for States to conserve biodiversity as a whole. Therefore, States cannot neglect or fail to conserve all other biodiversity components, consistent with other international law principles such as the principle of sustainable development. The international law and policy framework for the conservation of marine biodiversity in ABNJ is described in details in Chapter 3. Apart from the MPA target provided by the CBD, there is no quantification of how much biodiversity should be conserved. But conservation is to be exercised within the realm of sustainable use and the protection of the marine environment.¹⁴¹

2.5 Challenges to the Conservation of High Seas Biodiversity

Several challenges to the conservation of high seas biodiversity have been identified by scholars and the international community, with the main ones being the fragmented and sector-based management of the oceans; the lack of a comprehensive legal framework for the high seas encompassing all biodiversity components; the lack of cooperation and coordination between States and between institutions with a mandate to work in ABNJ; and the lack of implementation and enforcement of existing legal instruments and measures.¹⁴²

¹⁴⁰ Natalie C Ban et al, 'Better Integration of Sectoral Planning and Management Approaches for the Interlinked Ecology of the Open Oceans' (2014) 49 *Marine Policy* 127, 128.

¹⁴¹ See Chapter 3 for details on the legal and policy framework for marine biodiversity conservation in ABNJ.

¹⁴² See, eg: Adalberto Vallega, 'Ocean Governance in Post-Modern Society – a Geographical Perspective' (2001) 25(6) *Marine Policy* 399; Rayfuse and Warner, above n 30; Lori Ridgeway, 'Governance Beyond National Jurisdiction. Linkages to Sectoral Management' in Julien Rochette (ed), *Towards a New Governance of High Seas Biodiversity* (Institut Oceanographique, 2009) 245; Lennox Hinds, 'Oceans Governance and the Implementation Gap' (2003) 27 *Marine Policy* 349; Kristina M Gjerde et al, 'Regulatory and Governance Gaps in the International Regime for the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction (IUCN Environmental Policy and Law Papers Online Marine Series No 1, IUCN, 2008); Annick De Marffy-Mantuano, 'What International Coordination for Marine Biodiversity Governance in Areas Beyond National Jurisdiction?' in Julien Rochette (ed), *Towards a New Governance of High Seas Biodiversity* (Institut Oceanographique, 2009) 205; Alfonso Ascencio and Michael Bliss, 'Conserving the Biodiversity of the High Seas and Deep Oceans: Institutional Gaps in the International System' (Paper presented at the Workshop on the Governance of High Seas Biodiversity Conservation, Cairns, 16-19 June 2003); Ardron et al, above n 120; Kristina M Gjerde, 'Framing the Debate on Marine Biodiversity Conservation Beyond National Jurisdiction: Processes Underway and Main Deadlines' in Julien Rochette (ed), *Towards a New Governance of High Seas Biodiversity* (Institut Oceanographique, 2009) 19; IUCN, 'Co-Chair's Report of Workshop on High Seas Governance for the 21st Century' (Workshop Report, IUCN, 17-19 October 2007); 2011 *BBNJ Report*; 2012 *BBNJ Report*.

2.5.1 Fragmented and Sector-based Management of the Oceans

At the institutional level, oceans are managed and regulated by activity sectors, principally fisheries through FAO and RFMOs; shipping, including the regulation of safety of navigation, marine pollution and dumping at-sea, through IMO; and deep-seabed mining through ISA. Although UNEP and RSOs are working on environmentally related issues, there is currently no institution specifically working on biodiversity-related issues for ABNJ that could take an overarching, leading, supervising and enforcing role in addressing the conservation of high seas biodiversity. Equally, there is no coordinating and enforcing institution amongst international and regional bodies for matters related to ABNJ that would take into account the cumulative impacts of present and future ocean uses on the marine environment (Figure 2.10).¹⁴³

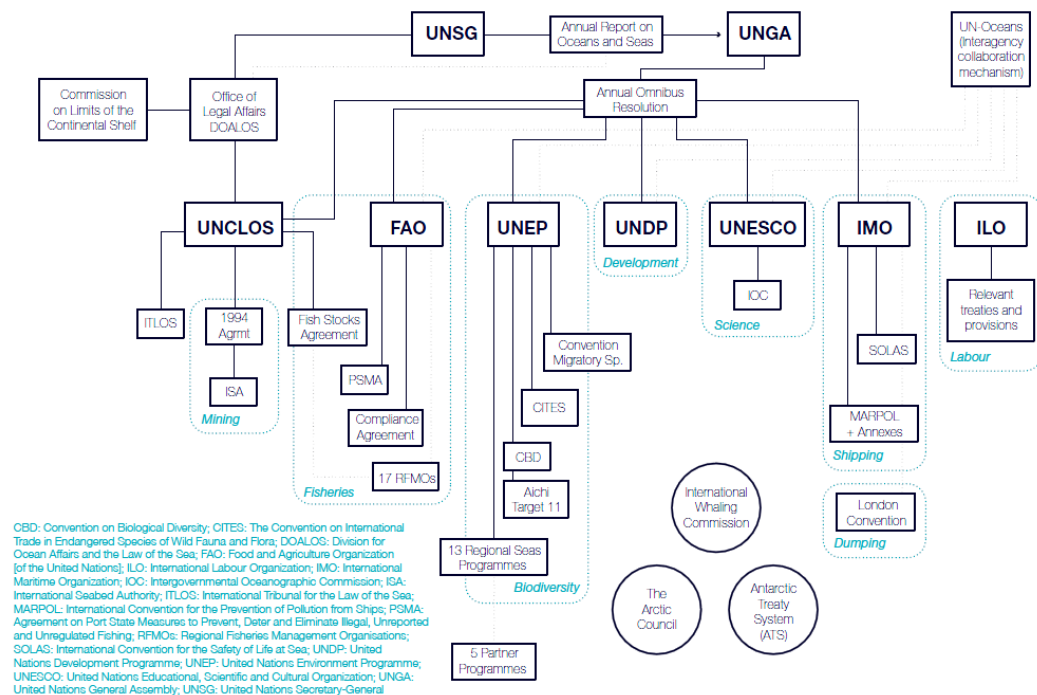


Figure 2.10: Summarised Schematic Diagram of International Ocean Governance
(Source: Global Ocean Commission 2014)¹⁴⁴

This sector-based institutional framework has been described by scholars and the international community as inadequate to take into account the cumulative impacts of current and future activities in ABNJ.¹⁴⁵ Furthermore, the geographical coverage of

¹⁴³ Rayfuse and Warner, above n 30; IUCN, above n 139.

¹⁴⁴ Global Ocean Commission, above n 1, 7.

¹⁴⁵ 2008 BBNJ Report para 18; 2010 BBNJ Report para 47.

RFMOs and RSOs is not comprehensive since not all parts of ABNJ are covered by these institutions and their related legal instruments.¹⁴⁶ This sector-based framework has significant regulatory gaps because the existing legal instruments formulated by existing global and regional institutions do not adequately address biodiversity-related issues in ABNJ and because activities in ABNJ, particularly new and emerging ones, remain poorly or inadequately regulated.¹⁴⁷ This comes about because biodiversity conservation was not within the original remit of the LOSC. In addition, there are governance gaps arising because these global and regional institutions and mechanisms do not fully address biodiversity-related issues in ABNJ and because of the inadequate or out-dated mandate of certain institutions to face the numerous challenges involved in the conservation of biodiversity in ABNJ.¹⁴⁸

RFMOs have been particularly criticised by many scholars for their failure to manage and conserve fish stocks in their areas of responsibility because of: poor implementation of management measures that are not necessarily science-based; the lack of compliance and enforcement of measures in place, also for non-contracting parties and cooperating non-members of RFMOs; lack of environmental protection principles in their conventions; ineffective decision-making processes that undermine management through the use of opt-out clauses; the lack of coordination between the various RFMOs; and a lack of capacity and political will.¹⁴⁹ Scholars and the international community have been advocating for the strengthening of these organisations' mandates as well as their performance being reviewed on a regular basis. To date, only a few RFMOs have undertaken performance reviews and strengthened their mandates.¹⁵⁰

¹⁴⁶ See, eg: Erik J Molenaar, 'Managing Biodiversity in Areas Beyond National Jurisdiction' (2007) 22(1) *The International Journal of Marine and Coastal Law* 89; Natalie C Ban et al, 'Systematic Conservation Planning: A Better Recipe for Managing the High Seas for Biodiversity Conservation and Sustainable Use' (2014) 7(1) *Conservation Letters* 41; Druel et al, above n 120; Ardron et al, above n 120; Rochette et al, above n 120, 109; Kristina M Gjerde and Anna Rulska-Domino, 'Marine Protected Areas Beyond National Jurisdiction: Some Practical Perspectives for Moving Ahead' (2012) 27 *The International Journal of Marine and Coastal Law* 351; Sebastian Unger and Julien Rochette, 'Governance of Areas Beyond National Jurisdiction – Developing and Strengthening Regional Approaches' (UNEP(DEPI)/RS.15/WP.6.RS, UNEP, 2013), 6.

¹⁴⁷ 2008 *BBNJ Report* para 42; Gjerde et al, above n 139.

¹⁴⁸ 2008 *BBNJ Report* para 43; Gjerde et al, above n 139.

¹⁴⁹ See, eg: Kristina M Gjerde, 'High Seas Fisheries Governance: Prospects and Challenges in the 21st Century' in Davor Vidas and Peter Johann Schei (eds), *The World Ocean in Globalisation: Climate Change, Sustainable Fisheries, Biodiversity, Shipping, Regional Issues* (Martinus Nijhoff, 2011) 221; Rosemary Rayfuse, 'The Challenge of Sustainable High Seas Fisheries' in Nico Schrijver and Friedl Weiss (eds), *International Law and Sustainable Development: Principles and Practice* (Martinus Nijhoff, 2004) 467; Rosemary Rayfuse, 'Moving Beyond the Tragedy of the Global Commons: The Grotian Legacy and the Future of Sustainable Management of the Biodiversity of the High Seas' in David Leary and Balakrishna Pisupati (eds), *The Future of International Environmental Law* (United Nations University Press, 2010) 201; Gjerde et al, above n 55; Rochette et al, above n 120; R Warner, K M Gjerde and D Freestone, 'Regional Governance for Fisheries and Biodiversity' in Serge M Garcia, Jake Rice and Anthony Charles (eds), *Governance of Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution* (Wiley-Blackwell, 2014) 211.

¹⁵⁰ See Section 4.2.2.1 in Chapter 4.

2.5.2 Lack of a Comprehensive Legal Framework

Deriving from the sector-based institutional framework outlined above (Figure 2.10), current global and regional legal instruments do not regulate all human activities taking place in ABNJ or adequately address the environmental impacts resulting from such current and emerging activities.¹⁵¹ Scholars and the international community have identified a gap in the geographic coverage of legally binding instruments addressing biodiversity conservation in ABNJ and a lack of implementation of these instruments.¹⁵² They have also identified that such legal agreements do not consistently incorporate the application of internationally-agreed conservation principles, such as the ecosystem approach and the precautionary principle, or management tools, such as the application of environmental impact assessments (EIAs) and strategic environmental assessments (SEAs), or the implementation of MPAs and marine spatial planning.¹⁵³

2.5.3 Lack of Cooperation and Coordination

Within this sector-based framework, scholars and the international community have also identified governance gaps arising from the lack of cooperation and coordination between sectors.¹⁵⁴ The BBNJ Working Group has pinpointed this factor as undermining the effective governance of activities on the high seas.¹⁵⁵ Cooperation and coordination between States, institutions, sectors and regimes is recognised as being critical for integrated ocean management, particularly considering the cross-sectoral nature of marine biodiversity.¹⁵⁶ Scholars have also identified a lack of coordination mechanisms for the consistent and coherent application of modern conservation principles and norms in ABNJ, including the ecosystem approach, the precautionary approach, EIAs, area-based management measures and marine spatial planning.¹⁵⁷

¹⁵¹ IUCN, above n 139; *2014a BBNJ Report* para 17.

¹⁵² See, eg: IUCN, above n 139; Gjerde et al, above n 139; *2011 BBNJ Report*.

¹⁵³ IUCN, above n 139; Gjerde et al, above n 139; Molenaar, above n 143; *2014a BBNJ Report* para 17. Internationally-agreed conservation principles stem from existing legal instruments or form part of globally agreed international minimum standards that are widely recognised by the international community. There is a push to reaffirm, formalise and consolidate these key principles into a new implementing agreement under the LOSC (see Section 2.6.1 of this chapter). This is not only to emphasise States' collective responsibility towards high seas biodiversity conservation but also to ensure the application of global minimum standards and their consistency across all regions and develop a coherent ABNJ governance regime. For more information on the basic modern conservation principles applicable for the conservation and sustainable use of marine biodiversity in ABNJ, see Section 3.3.2.5 of Chapter 3.

¹⁵⁴ Molenaar, above n 143; *2008 BBNJ Report* para 43.

¹⁵⁵ *2008 BBNJ Report* para 21; *2012 BBNJ Report* para 38; *2013 BBNJ Report* para 21.

¹⁵⁶ Rochette et al, above n 120; *2006 BBNJ Report* para 53; *2010 BBNJ Report* para 48; *2012 BBNJ Report* para 13.

¹⁵⁷ IUCN, above n 139.

2.5.4 Lack of Implementation, Compliance and Enforcement

Scholars and the international community have also commented that most of the existing international legal instruments are not adequately implemented and enforced in ABNJ.¹⁵⁸ Particularly, effective monitoring, compliance and enforcement of legal measures are lacking as is the monitoring, assessment and control of activities under States' control or jurisdiction.¹⁵⁹ The fact that not all States are parties to global and regional treaties regulating the uses and protection of the oceans reduces the level of enforcement and compliance with such treaties.¹⁶⁰ Also, funding availability and lack of trained personnel limits the capacity of institutions and governments to take action on the conservation of biodiversity in ABNJ.¹⁶¹ Coastal States are furthermore naturally inclined to prioritise waters under their own national jurisdiction over those in ABNJ for applying enforcement resources. Deficiencies have also been noted by the international community in the form of the lack of inclusion of scientific information in policy and management decisions regarding the conservation of high seas biodiversity and the lack of capacity building and training opportunities as well as technology transfer between developed and developing countries.¹⁶²

The lack of implementation, compliance and enforcement by RFMO member States of legal obligations under RFMO agreements has also been underscored by scholars and is one of the reasons for the failure by such institutions to adequately regulate fishing and manage the fish stocks under their management (see Section 2.5.1 above).¹⁶³ In their evaluation of RFMO best practices, Lodge found a lack of 'necessary political leadership needed to carry internationally agreed targets and declarations into effect' by way of 'a lack of willingness on the part of some states to participate in multilateral agreements or, when they do, to participate effectively'.¹⁶⁴

¹⁵⁸ See, eg: Ibid; Gjerde et al, above n 139; 2011 *BBNJ Report*.

¹⁵⁹ Gjerde et al, above n 139; IUCN, above n 139; Dorota Englender et al, 'Cooperation and Compliance Control in Areas Beyond National Jurisdiction' (2014) 49 *Marine Policy* 186; Rosemary Rayfuse, 'To Our Children's Children's Children: From Promoting to Achieving Compliance in High Seas Fisheries' (2005) 20(3) *The International Journal of Marine and Coastal Law* 509.

¹⁶⁰ Gjerde et al, above n 139.

¹⁶¹ 2010 *BBNJ Report* para 5, para 38 and para 41.

¹⁶² Ibid para 3, para 7, para 31, para 35 and para 38.

¹⁶³ IUCN, above n 139. See, eg: Jackie Alder et al, 'Compliance with international fisheries instruments: Fisheries impacts on North Atlantic ecosystems: evaluations and policy exploration' (Fisheries Centre Research Reports 9.5, UBC, 2001) 94 for a study on the compliance of States bordering the North Atlantic with international fisheries instruments.

¹⁶⁴ Michael Lodge, 'Managing International Fisheries: Improving Fisheries Governance by Strengthening Regional Fisheries Management Organizations' (Briefing Paper No EEDP BP 07/01, Chatham House Energy, Environment and Development Programme, May 2007) 4.

2.6 Proposed Measures for the Conservation of High Seas Biodiversity

The current institutional and legal framework for ocean management provides many challenges for the conservation of high seas biodiversity, as underscored by scholars and the international community. Several propositions have been made by scholars over the last decade to advance the conservation of marine biodiversity in ABNJ. The BBNJ Working Group has identified the need to better incorporate it within the UN framework through the possible negotiation of an implementing agreement to the LOSC (see Section 2.6.1 below). Other measures have been proposed to notably strengthen the institutional framework (see Section 2.6.2 below); increase implementation of, compliance with and enforcement of the legal framework (see Section 2.6.3 below); increase the application of area-based management (see Section 2.6.4 below), especially through the identification of important marine areas (see Section 2.6.5 below); apply modern conservation principles (see Section 2.6.6 below); and increase capacity building and technology transfer (see Section 2.6.7 below).

There has also been discussion of a regional approach to conservation of marine biodiversity in ABNJ in the BBNJ Working Group and by academic commentators while a possible implementation agreement to the LOSC is being debated at the global level. This regional approach to high seas biodiversity conservation is discussed in Section 2.7 of this chapter and forms the basis for this thesis' research on the Southeast Pacific region.

2.6.1 Implementing Agreement under the LOSC

In November 2004, the United Nations General Assembly (UNGA) adopted a resolution to establish the BBNJ Working Group.¹⁶⁵ It was established with the objectives of:

- 'a) survey[ing] past and present activities of the United Nations and other relevant international organizations with regard to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction;*
- b) examin[ing] the scientific, technical, economic, legal, environmental, socio-economic and other aspects of these issues;*

¹⁶⁵ United Nations General Assembly, *Resolution Adopted by the General Assembly*, GA Res 59/24, 59th sess, Agenda Item 49 (a), A/Res/59/24 (4 February 2005) para 73.

c) identify[ing] key issues and questions where more detailed background studies would facilitate consideration by States of these issues;
*d) indicat[ing], where appropriate, possible options and approaches to promote international cooperation and coordination for the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction’.*¹⁶⁶

This forum therefore aims to find ways to better conserve and sustainably use marine biodiversity in ABNJ.

Since its establishment, the BBNJ Working Group has met a total of eight times. It met for the first time in 2006 and convened further meetings in 2008, 2010, 2011, 2012, 2013, and two in 2014.¹⁶⁷ At the first meeting in 2006, States considered the general state of knowledge on and identified several regulatory and governance challenges and gaps in the conservation and sustainable use of marine biodiversity in ABNJ.¹⁶⁸ They also commented on trends in legal, institutional, scientific, technical, environmental, economic and socio-economic aspects of the conservation and sustainable use of marine biodiversity in ABNJ and suggested a number of further studies that should be undertaken for the better understanding of the conservation and sustainable use of marine biodiversity in ABNJ.

At the second meeting of the BBNJ Working Group in 2008, States reviewed governance and regulatory gaps and challenges in the conservation and sustainable use of biodiversity beyond national jurisdiction and proposed possible short-, medium- and long-term ways forward to remove those gaps and more effectively regulate the conservation and sustainable use of marine biodiversity in ABNJ.¹⁶⁹

The 2010 meeting of the BBNJ Working Group made recommendations on the need to strengthen the science base to allow decision makers to take better informed decisions on ways to conserve and sustainably use marine biodiversity in ABNJ, promote capacity building and technology transfer, and improve cooperation and coordination between competent organisations.¹⁷⁰ This meeting provided an updated list of studies that should

¹⁶⁶ Ibid.

¹⁶⁷ The meetings took place between: a) 13 and 17 February 2006; b) 28 April and 2 May 2008; c) 1 and 5 February 2010; d) 31 May and 3 June 2011; e) 7 and 11 May 2012; f) 19 and 23 August 2013; g) 1 and 4 April 2014; and h) 16 and 19 June 2014.

¹⁶⁸ 2006 BBNJ Report. See Section 2.5 of this chapter.

¹⁶⁹ 2008 BBNJ Report.

¹⁷⁰ 2010 BBNJ Report.

be undertaken to better understand how to conserve and sustainably use biodiversity in ABNJ.

The 2011 meeting emphasised the need to start discussing a possible implementing agreement on conservation and sustainable use of marine biodiversity in ABNJ under the LOSC and agree to a package deal of constituent elements, should the start of negotiations towards a new implementing agreement be accepted. The proposed elements consisted of access to and benefit sharing of marine genetic resources in ABNJ, area-based management tools, such as MPAs, EIAs, as well as capacity building and technology transfer.¹⁷¹

At the 2012 meeting, the BBNJ Working Group recommended the convening of two intersessional workshops.¹⁷² The first workshop was to address marine genetic resources and the second conservation and management tools, including area-based management tools, such as MPAs and EIAs. Both were also to address overarching issues such as international cooperation and coordination, capacity building and technology transfer related to conservation and sustainable use of marine biodiversity in ABNJ.¹⁷³

The 2013 and two 2014 meetings of the BBNJ Working Group focused on a possible future implementing agreement to the LOSC, what should be included in there, and how this new agreement would interact with existing agreements relevant to conservation and sustainable use of marine biodiversity in ABNJ.¹⁷⁴ This focus was supported by States at the 2012 Rio+20 Summit, at which States

‘recognize[d] the importance of the conservation and sustainable use of marine biodiversity beyond areas of national jurisdiction (...) [and committed themselves] to address, on an urgent basis, the issue of the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction including by taking a decision on the development of an international instrument under [the LOSC]’

¹⁷¹ 2011 BBNJ Report.

¹⁷² 2012 BBNJ Report para 1b. The two intersessional workshops were held on 2-3 May and 6-7 May 2013.

¹⁷³ See: Terms of Reference for the Intersessional Workshops in the Appendix of 2012 BBNJ Report.

¹⁷⁴ 2013 BBNJ Report; 2014a BBNJ Report; 2014b BBNJ Report.

before the end of the 69th Session of the UNGA, hence before the 2015 UNGA meeting.¹⁷⁵ This commitment was endorsed in the 2012 UNGA resolution 66/231.¹⁷⁶

This commitment emphasises the global recognition by States of the importance of conserving and sustainably using marine biodiversity in ABNJ and the need to provide solutions to improve the legal and institutional framework. The next meeting of the BBNJ Working Group to review a possible start of negotiations on an implementing agreement will take place in January 2015.¹⁷⁷

The implementing agreement discussed over a number of years in the BBNJ Working Group was viewed by a majority of States as a proposed long-term measure for the conservation and sustainable use of biodiversity in ABNJ to build a ‘comprehensive legal, institutional and governance framework, while maintaining a balance between the interests of developed and developing States’.¹⁷⁸ States, particularly the European Union (EU) bloc, view this agreement as the best way to foster the conservation of marine biodiversity in ABNJ. This is to be achieved through:

- enhanced cooperation, coordination and collaboration between States, sectors and existing mechanisms;
- the application of modern governance and conservation principles, such as the precautionary and ecosystem approaches, transparency and participation in decision-making processes;
- the application of area-based management tools, such as MPAs and EIAs;
- accounting for activities that are unregulated at present;

¹⁷⁵ *The Future We Want* para 162.

¹⁷⁶ United Nations General Assembly, *Resolution Adopted by the General Assembly*, GA Res 66/231, 66th sess, Agenda Item 76(a), A/Res/66/231 (5 April 2012) para 167: ‘Decides, accordingly, to initiate within the Ad Hoc Open-ended Informal Working Group the process provided for in paragraph 1 (a) of the recommendations of the Working Group, that the process will address the issues identified in paragraph 1 (b) of the recommendations and in the fashion described in that paragraph, and that the process will take place: (i) in the Ad Hoc Open-ended Informal Working Group; and (ii) in the format of intersessional workshops as described in paragraph 1 (c) of the recommendations’.

¹⁷⁷ Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 13 February 2015 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/69/780, United Nations General Assembly, 69th sess, Item 74(a) of the preliminary list (13 February 2015). This 2015 BBNJ Working Group meeting decided to develop an international legally binding instrument under the LOSC on the conservation and sustainable use of marine biodiversity in ABNJ (Recommendation 1.e), based on the in 2011 agreed package deal. To this end, it decided to establish a preparatory committee, which will work in 2016-2017 on ‘mak[ing] substantive recommendations to the [UNGA] on the elements of a draft text of [this] international legally binding instrument’. This will precede the convening of an intergovernmental conference, which should be established in 2018.

¹⁷⁸ 2012 BBNJ Report para 42; 2014a BBNJ Report para 27.

- ensuring the fair and equitable access and benefit sharing of marine genetic resources;
- capacity building and technology transfer.¹⁷⁹

At present, a majority of States in the BBNJ Working Group are supportive of such an implementing agreement under the LOSC for the conservation and sustainable use of marine biodiversity in ABNJ.¹⁸⁰ However, a few States, including the USA, Canada, Russian Federation, Japan, Iceland, Norway, and Republic of Korea, are still opposed to starting negotiations on an implementing agreement to the LOSC on the grounds that in their view the current legal and institutional framework provides enough coverage for the conservation and sustainable use of marine biodiversity in ABNJ and should be better implemented and enforced.¹⁸¹ Another issue of contention is the access to and benefit sharing of marine genetic resources.¹⁸² There is still disagreement amongst States about the legal regime applicable to marine genetic resources; whether they are part of the common heritage of mankind or the freedom of the high seas regimes.¹⁸³ This disagreement hinders the development of an access and benefit-sharing regime for marine genetic resources under the LOSC, which is further affected by diverging views of developed and developing States regarding access and benefit entitlements.

2.6.2 Strengthening the Institutional Framework

The current debate around the institutional framework lies around the question of the creation of new institutions versus the strengthening of existing institutions. Many scholars suggest that the mandate of existing international and sectoral bodies, particularly RFMOs and RSOs, should be strengthened and updated.¹⁸⁴ Some scholars and policy makers have proposed that the mandate of institutions be extended into ABNJ as well as from single species to multi-species management, that high seas biodiversity obligations be integrated into their mandates, and their mandates be

¹⁷⁹ 2006 BBNJ Report para 55; 2008 BBNJ Report para 47; 2010 BBNJ Report para 43; 2011 BBNJ Report para 42; 2012 BBNJ Report para 12, para 41 and para 43; 2014a BBNJ Report para 21, para 22, para 39 and para 42; 2014b BBNJ Report para 14, para 23 and para 24.

¹⁸⁰ Supportive States include: the EU, the G77 and China, CARICOM, and the Pacific Island States. See: 2014b BBNJ Report para 77; Wright et al, above n 55.

¹⁸¹ See, eg: IISD Reporting Services, 'Summary of the Eighth Meeting of the Working Group on Marine Biodiversity Beyond Areas of National Jurisdiction: 16-19 June 2014' (Report, International Institute for Sustainable Development, 2014); Wright et al, above n 55; 2006 BBNJ Report para 51 and para 55; 2008 BBNJ Report para 48; 2010 BBNJ Report para 45; 2011 BBNJ Report para 43; 2013 BBNJ Report para 42; 2014a BBNJ Report para 23 and para 25; 2014b BBNJ Report para 17 and para 81.

¹⁸² See, eg: 2014a BBNJ Report para 49 and para 50; 2014b BBNJ Report para 47 and para 48.

¹⁸³ See Section 3.2 of Chapter 3 for more details on these two regimes.

¹⁸⁴ See, eg: Gjerde et al, above n 120; Gjerde et al, above n 55; Ban et al, above n 143; Rochette et al, above n 120; Warner et al, above n 146.

upgraded to include broader environmental principles.¹⁸⁵ Strengthening RFMO mandates could be an option to promote and ensure increased cooperation with RSOs.¹⁸⁶ Commentators have underscored the role of RFMOs and RSOs in contributing towards integrated ocean management and have described them as ‘important frameworks for the exchange of information and best practice’.¹⁸⁷ Proposals to have RFMOs incorporate high seas biodiversity obligations and to better cooperate and collaborate with RSOs are further discussed in Chapter 7 of this thesis, with a focus on the Southeast Pacific region.

The BBNJ Working Group has emphasised the need to ensure full global coverage of RFMOs and RSOs.¹⁸⁸ While geographical coverage of RFMOs has increased in recent years, not all regions of the world are covered. The BBNJ Working Group has suggested increasing the geographic coverage by creating new RFMOs, but there seems to be little political appetite for establishing new institutions.¹⁸⁹ It has also suggested that the mandate of the ISA could be extended to include the management of deep-sea biodiversity, including genetic resources.¹⁹⁰ Commentators have also proposed the creation of a supra-institution for the oversight, regulation and enforcement of ABNJ-related activities and the creation of a global fisheries regulatory and coordination authority.¹⁹¹

2.6.3 Implementation of and Compliance with the Legal Framework

Short-term measures that can be implemented for the conservation of marine biodiversity in ABNJ include the strengthening, updating, modernising and enforcement of current agreements and mechanisms as well as increased cooperation and coordination between existing sectors, regimes, and institutions. Mechanisms to improve cooperation and coordination between institutions include: the establishment of joint activities and programmes of work; collaborative mechanisms through SEAs and marine spatial planning; scientific information exchange; using a common scientific advisory body and common science platform; and exchanging information on best

¹⁸⁵ Warner et al, above n 146; *2008 BBNJ Report* para 40.

¹⁸⁶ *2010 BBNJ Report* para 44.

¹⁸⁷ Rochette et al, above n 120, 116; *2011 BBNJ Report* para 14.

¹⁸⁸ *2010 BBNJ Report* para 44.

¹⁸⁹ *2010 BBNJ Report*.

¹⁹⁰ See, eg: *2006 BBNJ Report* para 29.

¹⁹¹ See, eg: Gjerde et al, above n 120; Rayfuse and Warner, above n 30; J Samuel Barkin and Elizabeth R DeSombre, *Saving Global Fisheries: Reducing Fishing Capacity to Promote Sustainability* (MIT Press, 2013) 13, 159 and 160.

practices.¹⁹² Detailed mechanisms to improve institutional cooperation and coordination are discussed in Chapter 4. Encouraging States to become parties to and participate in international legal agreements relevant to marine biodiversity conservation in ABNJ and participating in the work of relevant RFMOs and RSOs is another important step in ensuring the implementation of and compliance with relevant legal instruments.¹⁹³ Commentators have also indicated the need for RFMOs to undertake performance reviews to pinpoint the strengths and weaknesses of such institutions and their member States in implementing and complying with their adopted management measures.¹⁹⁴

2.6.4 Area-based Management Measures

Garcia et al identify species conservation and the establishment of MPAs as the two principal channels through which marine conservation is exercised.¹⁹⁵ Area-based management measures for the conservation of high seas biodiversity including MPAs and fisheries spatial closures (Figure 2.11) have been emphasised as key factors in the conservation and sustainable use of high seas biodiversity as they address activities and threats in a holistic manner.¹⁹⁶ Such management tools have been shown to be useful in areas, such as the deep seas, where scientific data are poor and MPAs have also been credited with enhancing inter-institutional cooperation.¹⁹⁷ States through the BBNJ Working Group and scholars endorse the use of high seas MPAs as an important tool to protect vulnerable and unique habitats and enable an holistic and ecosystem approach, rather than a sectoral approach, to management.¹⁹⁸ Such area-based management tools have been established under the umbrella of global and regional organisations, such as the IMO, ISA and RFMOs.¹⁹⁹

To date, 9 MPAs have been established on the high seas. The Pelagos Sanctuary in the Mediterranean Sea, established in 1999, is a 90,000 km² protected area that encompasses both waters within and beyond national jurisdiction. The first completely

¹⁹² Warner et al, above n 146; *2010 BBNJ Report* para 13.

¹⁹³ *2006 BBNJ Report* para 50, para 51, para 52, para 53 and annex 1 para 6 and para 13; *2008 BBNJ Report* para 40 and para 45; *2010 BBNJ Report* para 11 and para 43; *2012 BBNJ Report* para 31.

¹⁹⁴ See, eg: *2008 BBNJ Report* para 40.

¹⁹⁵ Garcia et al, above n 94, 11.

¹⁹⁶ *2006 BBNJ Report* para 59; *2008 BBNJ Report* para 26; *2010 BBNJ Report* para 58; *2011 BBNJ Report* para 23; *2012 BBNJ Report* para 20. MPAs are defined as: 'a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values' (Dan Laffoley et al, 'Establishing Resilient Marine Protected Area Networks: Making It Happen' (Report, IUCN, 2008) 3).

¹⁹⁷ FAO, 'Report and Documentation of the Expert Consultation on Deep-Sea Fisheries in the High Seas 2006' (Report no 829, FAO, 2007); Gjerde and Rulska-Domino, above n 143.

¹⁹⁸ *2006 BBNJ Report* para 33; Gjerde and Rulska-Domino, above n 143.

¹⁹⁹ *2014a BBNJ Report* para 60; *2014b BBNJ Report* para 60.

high seas MPA, the South Orkneys Marine Protected Area, was established in 2009 in the Southern Ocean under the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) and encompasses an area of approximately 94,000 km². The first network of high seas protected areas was established under OSPAR in 2010 and includes six MPAs in the North-East Atlantic with a seventh added in 2012.²⁰⁰

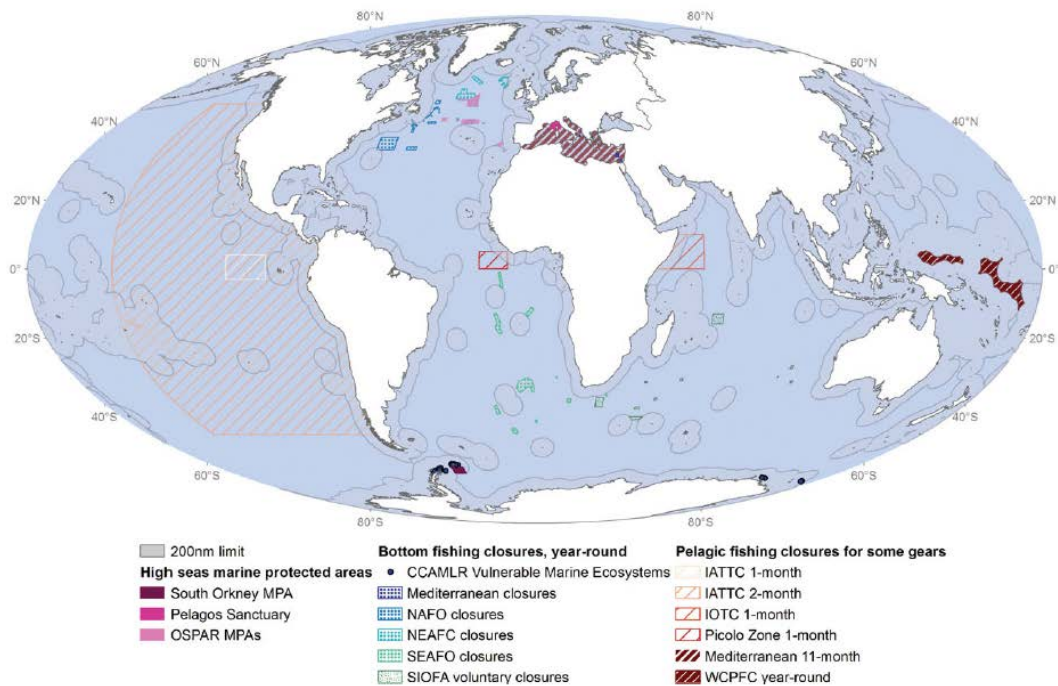


Figure 2.11: Map showing the Extent of Current High Seas MPAs and Fisheries Closure Areas
(Source: Ban et al 2014)²⁰¹

As emphasised in IUCN and CBD commentaries, protected areas should be connected to form a system or network of protected areas that, together, will contribute to the effective conservation of biodiversity across the seascape. It is widely recognised that protected areas on their own, do not adequately conserve biodiversity and that a network of protected areas which includes various representative ecosystems are necessary to

²⁰⁰ See, eg: Erik J Molenaar and Alex G Oude Elferink, 'Marine Protected Areas in Areas Beyond National Jurisdiction: The Pioneering Efforts under the OSPAR Convention' (2009) 5(1) *Utrecht Law Review* 5; B C O'Leary et al, 'The First Network of Marine Protected Areas (MPAs) in the High Seas: The Process, the Challenges and Where Next' (2012) 36 *Marine Policy* 598; Nele Matz-Lück and Johannes Fuchs, 'The Impact of OSPAR on Protected Area Management Beyond National Jurisdiction: Effective Regional Cooperation or a Network of Paper Parks?' (2014) 49 *Marine Policy* 155. A network of MPAs is defined as: 'a collection of individual MPAs or reserves operating co-operatively and synergistically, at various spatial scales and with a range of protection levels that are designed to meet objectives that a single reserve cannot achieve' (Dan Laffoley et al, above n 192, 12). See also Section 2.7.1 of this chapter for more information on the establishment of these MPAs.

²⁰¹ Source: Ban et al, above n 143, 46.

adequately and effectively conserve biodiversity.²⁰² In its 2008 guidelines, IUCN outlines the necessary characteristics that a system of protected areas should have in order to adequately and effectively conserve biodiversity. Systems of protected areas should be representative of the various ecosystems and comprehensive so as to include each of them. They should furthermore be adequate in terms of their spatial extent and management measures adopted so as to ensure an optimal conservation level for the environment and biodiversity targeted. Each protected area should be coherent and complementary to each other to ensure the overall effectiveness of the system of protected areas. The management objectives and policies applied need to be consistent throughout the system and there must be an adequate balance between the costs and benefits arising from the management of such systems. Systems of protected areas should be included within a broader-scale conservation approach, such as the ecosystem approach, to contribute towards broader-scale management and conservation plans at the national and regional levels.²⁰³

The BBNJ Working Group has raised the need to develop a mechanism for the identification of marine areas in ABNJ in need of protection and to develop a common methodology for the identification of MPAs.²⁰⁴ A 2011 International Workshop Exploring the Role of MPAs in Reconciling Fisheries Management with Conservation convened in Bergen, Norway, by FAO and UNEP developed a general framework of 10 characteristics and 12 steps for MPA governance in fisheries management and biodiversity conservation.²⁰⁵

2.6.5 Identification of Important Marine Areas

There has been increasing recognition at the global level of the need to identify ecologically important or vulnerable marine areas that require some type of protection. Three main processes have taken place at the global level to identify such areas: a) particularly sensitive sea areas (PSSAs) under the IMO; b) VMEs under the FAO; and c) EBSAs under the CBD.

²⁰² See Davey 1998 cited in Nigel Dudley, 'Guidelines for applying protected area management categories' (Report, IUCN, 2008) 10.

²⁰³ Dudley, above n 198.

²⁰⁴ 2008 BBNJ Report para 28; 2010 BBNJ Report para 43; 2012 BBNJ Report para 37.

²⁰⁵ Jake Rice et al, 'The Role of MPAs in Reconciling Fisheries Management with Conservation of Biological Diversity' (2012) 69 *Ocean and Coastal Management* 217.

PSSAs are ‘area[s] that [need] special protection through action by IMO because of [their] significance for recognized ecological, socio-economic, or scientific attributes where such attributes may be vulnerable to damage by international shipping activities’.²⁰⁶ IMO developed guidelines for the designation of such areas, which must meet at least one of the proposed criteria of ecological, socio-economic and scientific nature and must also be ‘at risk from international shipping activities’.²⁰⁷ These can be used to identify PSSAs ‘beyond the territorial sea with a view to the adoption of international protective measures regarding pollution and other damage caused by ships’.²⁰⁸ At the same time as the PSSA designation, an associated protective measure must be either approved or adopted by IMO.²⁰⁹ These associated protective measures include ships’ routing and reporting systems, special vessel source discharge restrictions or other environmentally protective measures relevant to international shipping.²¹⁰ To date, a total of fourteen PSSAs have been identified, all within the national jurisdiction of States.²¹¹

VMEs are ‘groups of species, communities or habitats that may be vulnerable to impacts from fishing activities’.²¹² ‘Vulnerability is related to the likelihood that a population, community, or habitat will experience substantial alteration from short-term or chronic disturbance, and the likelihood that it would recover and in what time frame’.²¹³ In its voluntary Guidelines, FAO has established a list of criteria, which can be expanded or adapted, to identify VMEs based on their characteristics.²¹⁴ These VMEs have to be identified either by States or through RFMOs.²¹⁵ FAO encourages the development of a regulatory framework for VMEs with a view to preventing significant adverse impacts and, in the meantime, the closing of areas where VMEs have been

²⁰⁶ International Maritime Organization, *Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas*, Res A.982(24), 24th sess, Agenda Item 11, A/24/Res.982 (6 February 2006) para 1.2.

²⁰⁷ Ibid annex art 4.4 and art 5.1. Ecological criteria include: uniqueness or rarity; critical habitat; dependency; representativeness; diversity; productivity; spawning or breeding grounds; naturalness; integrity; fragility; and bio-geographic importance. Social, cultural and economic criteria include: social or economic dependency; human dependency; and cultural heritage. Scientific and educational criteria: research; baseline for monitoring studies; and education.

²⁰⁸ Ibid annex art 4.3.

²⁰⁹ Ibid annex art 1.2.

²¹⁰ Ibid annex art 6.

²¹¹ <http://pssa.imo.org/#/globe> (accessed: 1 January 2015). For more information on PSSAs, see, eg: Julian Roberts, *Marine Environmental Protection and Biodiversity Conservation: The Application and Future Development of the IMO’s Particularly Sensitive Sea Area Concept* (Springer, 2007).

²¹² <http://www.fao.org/in-action/vulnerable-marine-ecosystems/background/en/> (accessed: 1 January 2015). The VME concept particularly developed after the adoption of United Nations General Assembly, ‘Resolution adopted by the General Assembly on 8 December 2006’, A/RES/61/105, 61st sess, Item 71 (b) (6 March 2007).

²¹³ FAO, ‘International Guidelines for the Management of Deep-Sea Fisheries in the High Seas’ (Guidelines, FAO, 2009) para 14.

²¹⁴ Ibid para 42 and para 43: Criteria include: uniqueness or rarity; functional significance of the habitat; fragility; life-history traits of component species that make recovery difficult; and structural complexity.

²¹⁵ Ibid para 44.

found or are likely to occur and the reduction of fisheries in this area.²¹⁶ The FAO launched a website in December 2014 showcasing a global map of VMEs in ABNJ.²¹⁷

EBSAs are ‘special areas in the ocean that serve important purposes, in one way or another, to support the healthy functioning of oceans and the many services that it provides’.²¹⁸ Seven EBSA criteria were adopted at the CBD COP 9 in 2008 in Bonn, Germany: uniqueness or rarity; special importance for life history stages of species; importance for threatened, endangered or declining species and/or habitats; vulnerability, fragility, sensitivity, or slow recovery; biological productivity; biological diversity; and naturalness.²¹⁹ Since 2012, the CBD has held a total of nine regional workshops to facilitate the scientific regional description of EBSAs, with two more to be held in March and April 2015.²²⁰ The EBSAs described at these workshops are added to the repository published on the CBD website once they have been reviewed by the CBD Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) and adopted by the COP with a view to be submitted to the UNGA, the BBNJ Working Group and other relevant organisations and States.²²¹

2.6.6 Precautionary and Ecosystem Approaches and Environmental Impact Assessments

The precautionary and ecosystem approaches to management are widely acknowledged and accepted within the international community as being fundamental for the conservation of high seas biodiversity.²²² These approaches need to be used to ensure that human activities taking place on the high seas are sustainably exercised and holistically approached and need to be widely incorporated into legal instruments at all levels.²²³

²¹⁶ Ibid para 63.

²¹⁷ See: <http://www.fao.org/in-action/vulnerable-marine-ecosystems/en/> (accessed: 1 January 2015).

²¹⁸ <http://www.cbd.int/ebsa/about> (accessed: 6 May 2014).

²¹⁹ Convention on Biological Diversity, *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Ninth Meeting*, UNEP/CBD/COP/DEC/IX/20, Conference of the Parties to the Convention on Biological Diversity, 9th meeting, Agenda Item 4.9 (9 October 2008) para 14 and annex I; Convention on Biological Diversity, ‘Azores Scientific Criteria and Guidance for Identifying Ecologically or Biologically Significant Marine Areas and Designing Representative Networks of Marine Protected Areas in Open Ocean Waters and Deep Sea Habitats’ (Report, CBD, 2009).

²²⁰ Western South Pacific (November 2011); Wider Caribbean and Western Mid-Atlantic region (February-March 2012); Southern Indian Ocean region (July-August 2012); Eastern Tropical and Temperate Pacific region (August 2012); North Pacific region (February-March 2013); South-Eastern Atlantic region (April 2013); Arctic region (March 2014); North-West Atlantic region (March 2014); Mediterranean region (April 2014); North-East Indian Ocean region (March 2015); North-West Indian Ocean region and Adjacent Gulf Areas (April 2015). Source: <http://www.cbd.int/ebsa/meetings?tab=upcoming> (accessed: 1 January 2015).

²²¹ See: <http://www.cbd.int/ebsa/> (accessed: 1 January 2015).

²²² See, eg: 2006 BBNJ Report para 33 and annex 1 para 5; 2010 BBNJ Report para 13. See also Section 3.3.2.2 of Chapter 3 for more information on these approaches.

²²³ 2008 BBNJ Report para 12 and para 26; 2010 BBNJ Report para 50.

The BBNJ Working Group has consistently stressed the importance of environmental management tools, including EIAs for the conservation and management of marine biodiversity in ABNJ.²²⁴ It has also proposed developing global guidelines for the use of EIAs in ABNJ as an option to address the existing gap in addressing the cumulative impacts of cross-sectoral human activities in ABNJ.²²⁵ Voluntary guidelines for biodiversity-inclusive EIAs have been adopted by the CBD.²²⁶ The CBD has also developed Advisory Guidelines for EIA in marine and coastal areas as an advisory document which was endorsed by COP 11 in 2012.²²⁷ These Guidelines incorporate specific reference to the use of EIA in ABNJ.

2.6.7 Science, Monitoring, Technology Transfer and Capacity Building

At its 2006 and 2010 meetings, the BBNJ Working Group identified a need for increased capacity building, notably through training, technology transfer and particularly through data collection and data sharing, as well as a better involvement of developing countries in the conservation of high seas biodiversity.²²⁸ Research and science are also acknowledged by scholars and policy makers as being an important component for the conservation and sustainable use of high seas biodiversity.²²⁹

2.7 Regional Approach to High Seas Biodiversity Conservation

Despite the important negotiating groundwork laid by the BBNJ Working Group and States' commitment to taking a decision by the end of 2015 on the negotiation of an implementing agreement to the LOSC, progress at the global level remains a slow process with some contentious issues likely to hamper progress remaining (see Section 2.6.1 of this chapter).²³⁰ Should States agree to launch negotiations for such an

²²⁴ 2006 BBNJ Report para 34 and annex 1 para 5; 2008 BBNJ Report para 17 and para 46 and para 54; 2010 BBNJ Report para 14, para 43 and para 51; 2011 BBNJ Report para 30 and para 54; 2012 BBNJ Report para 24 and para 26; 2014b BBNJ Report para 65. See Section 3.3.2.2 of Chapter 3 for more information on EIAs.

²²⁵ 2008 BBNJ Report para 18.

²²⁶ The voluntary guidelines for biodiversity-inclusive EIAs were adopted in Convention on Biological Diversity, *Decisions Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Eighth Meeting*, UNEP/CBD/COP/DEC/VIII/28, Conference of the Parties to the Convention on Biological Diversity, 8th meeting, Agenda Item 27.4 (15 June 2006) para 3.

²²⁷ Convention on Biological Diversity, *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Eleventh Meeting*, UNEP/CBD/COP/DEC/XI/18, Conference of the Parties to the Convention on Biological Diversity, 11th meeting, Agenda Item 10.2 (5 December 2012). See also: Convention on Biological Diversity, *Report of the Expert Workshop on Scientific and Technical Aspects relevant to Environmental Impact Assessment in Marine Areas Beyond National Jurisdiction*, UNEP/CBD/EW-EIAMA/2, Expert Workshop on Scientific and Technical Aspects relevant to Environmental Impact Assessment in Marine Areas Beyond National Jurisdiction (20 November 2009).

²²⁸ 2006 BBNJ Report para 20 and para 43; 2010 BBNJ Report para 34.

²²⁹ 2006 BBNJ Report para 18; 2008 BBNJ Report para 10.

²³⁰ *The Future We Want* para 162.

agreement in 2015, it will likely take several years until a new instrument under the LOSC is negotiated, adopted and, most importantly, implemented.

This implementing agreement to the LOSC is advocated by scholars and by many States to contribute to a more comprehensive ocean governance framework and particularly to the conservation and sustainable use of marine biodiversity in ABNJ.²³¹ Given the lengthy timeframe that such negotiations may take, the use and strengthening of the current legal and institutional framework at the regional level is advocated by scholars and the international community in parallel.²³² This is seen as a necessary complement to this overarching legal agreement to improve the conservation and sustainable use of marine biodiversity in ABNJ. Global and regional approaches are complementary as the global level will provide for common governance and conservation principles that can be implemented at the regional level through regional organisations.²³³ As an ‘essential link between the global and national or local level of governance’, Druel et al also argue that the regional level is ‘the most operational’ one with the potential to ‘positively influence discussions in other international fora’.²³⁴ Rochette et al underscore that ‘the development of regional initiatives for the protection of the environment is a cornerstone of international environmental policies’ while Warner et al further emphasise that regional governance is critical to ensure the effective application and implementation of legal provisions for the conservation of high seas biodiversity.²³⁵

Progress in the conservation and sustainable use of high seas biodiversity at the regional level shows good promise to date, showing that a regional approach to high seas biodiversity conservation has many advantages. In contrast to a global approach, it involves fewer stakeholders who are able to take into account the environmental specificity and uniqueness of their region as well as their financial capacities to manage this environment.²³⁶ States may also impose more stringent measures for the

²³¹ See, eg: Gjerde et al, above n 120; Kristina M Gjerde, ‘Challenges to Protecting the Marine Environment Beyond National Jurisdiction’ (2012) 27 *The International Journal of Marine and Coastal Law* 839; Ardrón et al, above n 120; Wright et al, above n 55; 2014b *BBNJ Report* para 77.

²³² See, eg: Ardrón et al, above n 120; Ban et al, above n 143; Ascencio and Bliss, above n 139; Rayfuse and Warner, above n 30; Gjerde et al, above n 120; Gjerde et al, above n 55; Matz-Lück and Fuchs, above n 196; 2012 *BBNJ Report*; *JPOI*.

²³³ See, eg: Druel et al, above n 120; 2014b *BBNJ Report* para 36.

²³⁴ Druel et al, above n 120, 1; Rochette et al, above n 120, 109.

²³⁵ Rochette et al, above n 120, 109; Warner et al, above n 146.

²³⁶ Gjerde et al, above n 120; Rochette et al, above n 120; Julien Rochette and Raphaël Billé, ‘ICZM Protocols to Regional Seas Conventions: What? Why? How?’ (2012) 36 *Marine Policy* 977; Julien Rochette and Raphaël Billé, ‘Bridging the Gap between Legal and Institutional Developments within Regional Seas Frameworks’ (2013) 28 *The International Journal of Marine and Coastal Law* 433; Unger and Rochette, above n 143, 2; David E Johnson et al, ‘Building the Regional Perspective: Platforms for Success’ (2014) 24(Suppl. 2) *Aquatic Conservation: Marine and Freshwater Ecosystems* 75.

conservation of biodiversity than the ones agreed at the global level.²³⁷ A regional approach has also been shown to produce improved commitment to binding legal obligations and policy convergence by States in the region, to be more cost-effective and to be better at dealing with large-scale changes.²³⁸ Finally, a regional approach helps to increase cross-agency cooperation and contributes in this way to better coherence between biodiversity conservation and fisheries management.²³⁹

Several studies have also underlined the importance of regional cooperation, mainly through regional cross-sectoral cooperation, as a key requirement for successful high seas management and conservation and sustainable use of high seas biodiversity.²⁴⁰ The cooperation of appropriate international and regional institutions in ABNJ is fundamental to ensuring multi-sectoral and integrated management of these global commons areas.²⁴¹ In this respect, States have underlined the important role played by RFMOs and RSOs in promoting such integrated ocean management.²⁴² Rochette et al underscore the importance of RFMOs and RSOs in developing ‘scientific knowledge, regulatory practice and the elaboration of management tools in ABNJ’.²⁴³

As will be outlined in Chapter 4, both RFMOs and RSOs provide a platform for States in a region to cooperate and, in the case of RFMOs, to develop management principles and procedures.²⁴⁴ There are several processes currently underway at the regional level to conserve and sustainably use high seas biodiversity by RFMOs, RSOs and governmental or non-governmental partnerships.²⁴⁵ A number of scholars have identified the North-East Atlantic region as being one of the most advanced areas for the

²³⁷ Gjerde et al, above n 120; Rochette et al, above n 120 ; Rochette and Billé, above n 231.

²³⁸ B A Simmons cited in Moira L McConnell, ‘Observations on Compliance and Enforcement and Regional Fisheries Institutions: Overcoming the Limitations of the Law of the Seas’ in Dawn A Russell and David L VanderZwaag (eds), *Recasting Transboundary Fisheries Management Arrangements in Light of Sustainability Principles: Canadian and International Perspectives* (Martinus Nijhoff, 2010) 71, 79; Johnson et al, above n 231.

²³⁹ Johnson et al, above n 231.

²⁴⁰ See, eg: Gjerde et al, above n 120; Rayfuse and Warner, above n 30; Julien Rochette and Raphaël Billé, ‘Governance of Marine Biodiversity Beyond National Jurisdictions: Issues and Perspectives. Report of the International Seminar ‘Towards a New Governance of High Seas Biodiversity’ (Principality of Monaco, March 20-21, 2008)’ (2008) 51(12) *Ocean and Coastal Management* 779; Jon Birger Skjaereth, ‘Protecting the North-East Atlantic: Enhancing Synergies by Institutional Interplay’ (2006) 30 *Marine Policy* 157; O’Leary et al, above n 196; Kvalvik, above n 120; Elinor Ostrom et al, ‘Revisiting the Commons: Local Lessons, Global Challenges’ (1999) 284 *Science* 278; Druel et al, above n 120; Ardron et al, above n 120; Rochette et al, above n 120; 2011 *BBNJ Report*.

²⁴¹ Ostrom et al, above n 235; Ardron et al, above n 120.

²⁴² 2010 *BBNJ Report* para 46.

²⁴³ Rochette et al, above n 120, 116.

²⁴⁴ Alf Hakon Hoel, ‘Marine Biodiversity and Institutional Interplay’ (2003) 30 *Coastal Management* 25; O’Leary et al, above n 196.

²⁴⁵ See, eg: Druel et al, above n 120; Johnson et al, above n 231; David Freestone et al, ‘Can Existing Institutions Protect Biodiversity in Areas Beyond National Jurisdiction? Experiences from Two On-going Processes’ (2014) 49 *Marine Policy* 167.

conservation of marine biodiversity in ABNJ.²⁴⁶ This region showcases that regional cross-institutional cooperation, through coordinated efforts, can positively influence the conservation and sustainable use of marine biodiversity in ABNJ (see Section 2.7.1 below).²⁴⁷

2.7.1 North-East Atlantic

There are several regional organisations that have a mandate to work in the North-East Atlantic. The two main ones are the RSO, OSPAR (Oslo-Paris Commission), and the RFMO, NEAFC. Other global institutions with a mandate extending into the North-East Atlantic are: the IMO, which is responsible for vessel source pollution and safety of navigation matters related to international shipping;²⁴⁸ the ISA, which is responsible for control and administration of non-living resource related activities in the Area;²⁴⁹ the North Atlantic Salmon Conservation Organization (NASCO), which is responsible for the conservation and management of Atlantic salmon;²⁵⁰ the IWC, which is responsible for the conservation of whales and the management of whaling;²⁵¹ and the International Civil Aviation Organization (ICAO), which develops international standards and recommended practices for global civil aviation.²⁵²

OSPAR is an independent RSO and cooperative mechanism through which fifteen States of Western Europe and the EU protect the marine environment of the North-East Atlantic, both within and beyond national jurisdiction. ‘OSPAR’ is the abbreviation of the two conventions upon which the current mechanism is built, namely the 1972 *Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft* (Oslo Convention) and the 1974 *Convention for the Prevention of Marine Pollution from Land-Based Sources* (Paris Convention).²⁵³ These two conventions were updated

²⁴⁶ See, eg: Druel et al, above n 120.

²⁴⁷ Rochette et al, above n 120.

²⁴⁸ LOSC art 157. See, eg: International Convention for the Prevention of Pollution from Ships as modified by the Protocol of 1978, opened for signature 17 February 1978, ATS 9 (entered into force 2 October 1983); Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, opened for signature 13 November 1972, ATS 16 (entered into force 30 August 1975); Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, opened for signature 7 November 1996, 36 ILM 1 (entered into force 24 March 2006) amended in 2006; International Convention for the Control and Management of Ships’ Ballast Water and Sediments, opened for signature 13 February 2004 (not yet in force); International Convention for the Safety of Life at Sea, opened for signature 1 November 1974, 1184 UNTS 2 (entered into force 25 May 1980).

²⁴⁹ See: <https://www.isa.org.jm/> (accessed: 11 June 2015).

²⁵⁰ See: <http://www.nasco.int/index.html> (accessed: 11 June 2015).

²⁵¹ See: <https://iwc.int/home> (accessed: 11 June 2015).

²⁵² See: <http://www.icao.int/Pages/default.aspx> (accessed: 11 June 2015).

²⁵³ Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft, opened for signature 15 February 1972 (entered into force 7 April 1974); Convention for the Prevention of Marine Pollution from Land-Based Sources, opened for signature 4 June 1974, 13 ILM 352 (entered into force 6 May 1978).

and unified and became the 1992 *Convention for the Protection of the Marine Environment of the North-East Atlantic* (OSPAR Convention), which entered into force in 1998.²⁵⁴ OSPAR has a broad environmental mandate that addresses not only ‘the impact of fisheries on biodiversity and ecosystems [but also] eutrophication, hazardous substances, radioactive substances, impacts of the offshore oil and gas industry and other human activities such as dredging, military activities including dumping of ordnance munitions, artificial reefs, sand and gravel extraction and wind farms’.²⁵⁵

In 1998, States adopted Annex V to the 1992 OSPAR Convention ‘On the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area’, which entered into force in 2000. This Annex to the 1992 OSPAR Convention specifies States’ obligation to take measures to protect the OSPAR maritime area ‘against the adverse effects of human activities’, ‘to conserve marine ecosystems’, ‘restore marine areas which have been adversely affected’ and ‘develop strategies, plans or programmes for the conservation and sustainable use of biological diversity’.²⁵⁶ The OSPAR Commission must also ‘draw up programmes and measures for the control of the human activities’ that are to be identified by a list of criteria provided in the Appendix to Annex V.²⁵⁷

Although not mentioned in Annex V, OSPAR Ministers agreed in 1998 ‘to promote the establishment of a network of MPAs to ensure the sustainable use and protection and conservation of marine biological diversity and its ecosystems’.²⁵⁸ This commitment was reaffirmed in the 2002 Bergen Declaration.²⁵⁹ This led to the adoption of the ‘OSPAR’s Regulatory Regime for Establishing Marine Protected Areas (MPAs) in ABNJ of the OSPAR Maritime Area’ in 2009. This describes the legal competence of OSPAR to establish MPAs in ABNJ and procedural options for the designation of

²⁵⁴ Convention for the Protection of the Marine Environment of the North-East Atlantic, opened for signature 22 September 1992, 32 ILM 1072 (entered into force 25 March 1998) (‘OSPAR Convention’).

²⁵⁵ K Hoydal, D Johnson, and A H Hoel, ‘Regional Governance: The Case of NEAFC and OSPAR’ in Serge M Garcia, Jake Rice and Anthony Charles (eds), *Governance of Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution* (Wiley-Blackwell, 2014) 225, 233.

²⁵⁶ OSPAR Convention annex V art 2.

²⁵⁷ Ibid annex V art 3 and appendix 3.

²⁵⁸ OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic, ‘Sintra Statement’ (Ministerial Meeting of the OSPAR Commission, Sintra, Portugal, 22-23 July 1998, Annex 45, Ref. §B-10.2) 2.

²⁵⁹ OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic, ‘Bergen Declaration’ (Fifth International Conference on the Protection of the North Sea, Bergen, Norway, 20-21 March 2002) para 6.

OSPAR MPAs in ABNJ.²⁶⁰ Six MPAs were established within the ABNJ of the OSPAR Convention Area by the OSPAR Commission Meeting in September 2010, covering a total area of 287,065 km².²⁶¹ Another high seas MPA, Charlie-Gibbs North, covering a total area of 178,094 km², was established at the 2012 OSPAR Commission Meeting.²⁶² This MPA is only pelagic, as the deep-seabed is claimed by Iceland as an extended continental shelf.²⁶³

O’Leary et al and the BBNJ Working Group have endorsed the first network of high seas MPAs under OSPAR in the North-East Atlantic as a successful case of regional cooperation that needs to be taken for lessons learned to be applied to other regions.²⁶⁴ However, despite its pioneer efforts in conserving marine biodiversity in ABNJ, OSPAR has been criticised by Matz-Lück and Fuchs for having only non-legally binding policy documents providing guidance on the implementation of these MPAs that leave the implementation of specific conservation measures to the OSPAR member States themselves and for not having cross-sectoral management plans in place.²⁶⁵ They argue that OSPAR is currently ‘not a good example of effective implementation’ but might, should OSPAR’s shortcomings be dealt with, ‘truly become a model for other regions’.²⁶⁶

Some States have also expressed their concerns in the BBNJ Working Group over the legitimacy of the unilateral establishment of conservation measures in ABNJ through RFMOs and RSOs, such as the network of MPAs established by OSPAR in the North-East Atlantic, as there is no legal regime yet in place for such establishment.²⁶⁷ The Co-Chairs of the BBNJ Working Group have acknowledged States’ views that a legal basis for such establishment of MPAs in ABNJ is needed as well as consideration of the

²⁶⁰ OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic, ‘OSPAR’s Regulatory Regime for Establishing Marine Protected Areas (MPAs) in Areas Beyond National Jurisdiction (ABNJ) of the OSPAR Maritime Area’ (Meeting of the OSPAR Commission, Brussels, Belgium, 22-26 June 2009, Annex 6, Ref. §6.13c).

²⁶¹ OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic, ‘Bergen Statement’ (Meeting of the OSPAR Commission, Bergen, Norway, 20-24 September 2010, Annex 49, Ref. M6.2) para 27 and para 28. The following MPAs were established: Charlie-Gibbs South MPA, Milne Seamount Complex MPA, Altair Seamounts MPA, Antialtair Seamounts MPA, Josephine Seamounts MPA, and Mid-Atlantic Ridge North of the Azores MPA (Freestone et al, above n 240, 167).

²⁶² Freestone et al, above n 240, 167; OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic, ‘OSPAR Decision 2012/1 on the Establishment of the Charlie-Gibbs North High Seas Marine Protected Area’ (Meeting of the OSPAR Commission, Bonn, Germany, 25-29 June 2012, Annex 6, Ref. §5.19a).

²⁶³ OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic, ‘OSPAR Decision 2012/1 on the Establishment of the Charlie-Gibbs North High Seas Marine Protected Area’ (Meeting of the OSPAR Commission, Bonn, Germany, 25-29 June 2012, Annex 6, Ref. §5.19a) art 1 and art 3.

²⁶⁴ O’Leary et al, above n 196; *2011 BBNJ Report* para 29.

²⁶⁵ Matz-Lück and Fuchs, above n 196, 159; Freestone et al, above n 240, 167.

²⁶⁶ Matz-Lück and Fuchs, above n 196, 163 and 165.

²⁶⁷ *2012 BBNJ Report* para 22 and para 37; *2014a BBNJ Report* para 18.

compatibility of such MPAs with the LOSC framework.²⁶⁸ They have referred to States' suggestions that the North-East Atlantic could be used as a case study to see whether the establishment of such MPA networks in ABNJ could be undertaken using existing mechanisms and also that these MPAs could form part of a global network of areas enjoying enhanced protection under the a new implementing agreement.²⁶⁹ Other considerations that need to be taken into account and that have been noted by States in the BBNJ Working Group are which body should be in charge of designating and managing MPAs, the legal implications of such MPA designations for third parties, the role of regional and global institutions, which activities are to be allowed or restricted within MPAs noting the existing freedoms of navigation and of scientific research, and how to implement, monitor and enforce the regulations in force.²⁷⁰

Annex V to the 1992 OSPAR Convention also sets out the requirement for OSPAR to cooperate with the relevant institutions working on fisheries management and the IMO for maritime transport-related issues.²⁷¹ This has prompted OSPAR to develop formal collaborative agreements with other regional institutions, such as with NEAFC in 2008, IMO in 1999, ISA in 2010 and International Council for the Exploration of the Sea (ICES) in 2006.²⁷² These memoranda of understanding (MoUs) have been welcomed by the UNGA.²⁷³ At the same time OSPAR has initiated a non-legally binding 'Collective Agreement' to encourage voluntary collaboration.²⁷⁴

NEAFC is the other regional institution with competence over the North-East Atlantic. It is a RFMO that was established in 1980 by the *Convention on Future Multilateral Cooperation in North East Atlantic Fisheries*.²⁷⁵ Its objectives differ from OSPAR's in that it aims 'to provide a forum for consultation and exchange of information on the

²⁶⁸ 2011 BBNJ Report para 24; 2012 BBNJ Report para 37.

²⁶⁹ 2011 BBNJ Report para 29; 2014b BBNJ Report para 61.

²⁷⁰ 2011 BBNJ Report para 50; 2013 BBNJ Report para 31.

²⁷¹ OSPAR Convention annex V art 4.1 and 4.2.

²⁷² Memorandum of Understanding between the North East Atlantic Fisheries Commission (NEAFC) and the OSPAR Commission (2008) (www.ospar.org/html_documents/ospar/html/mou_neafc_ospar.pdf; accessed: 3 January 2015); Agreement Cooperation with IMO (OSPAR, 1999) (www.ospar.org/html_documents/ospar/html/imo_oneils_letter_30_nov_1999_and_attachments_from_imo.pdf; accessed: 3 January 2015); Memorandum of Understanding with the International Seabed Authority (the Authority) (2010) (Meeting of the OSPAR Commission, Bergen, Norway, 20-24 September 2010, annex 12, Ref. § 12.3); www.ices.dk/explore-us/Documents/Cooperation%20agreements/OSPAR/MoU%20OSPAR%20and%20ICES.pdf (accessed: 25 February 2015).

²⁷³ United Nations General Assembly, *Oceans and the Law of the Sea: Report of the Secretary-General*, GA Res 68/70, 68th sess, Agenda Item 76 (a), A/68/70 (27 February 2014) para 260; 2010 BBNJ Report para 59.

²⁷⁴ This 2011 Collective Agreement involves the OSPAR Commission, NEAFC, ISA and IMO. It aims to facilitate the exchange of information, promote cooperation in the implementation of EIAs and SEAs and improve knowledge on ecosystems.

²⁷⁵ *Convention on Future Multilateral Cooperation in North East Atlantic Fisheries*, opened for signature 18 November 1980, 2 SMTE (entered into force 17 March 1982).

state of fisheries resources in the North-East Atlantic and on related management policies to ensure the conservation and optimal utilisation of such resources, and to set conservation measures in waters outside national jurisdiction'.²⁷⁶ Species under NEAFC management include all fishery resources but exclude marine mammals, sedentary species, highly migratory species and anadromous stocks.²⁷⁷ It has five contracting parties, namely Kingdom of Denmark, in respect of the Faroe Islands and Greenland, the European Union, Iceland, Norway and the Russian Federation, as well as three cooperating non-contracting parties, namely Canada, New Zealand and St. Kitts and Nevis.²⁷⁸ NEAFC undertook its performance review in 2005 and 2014.²⁷⁹ It has also signed MoUs notably with OSPAR in 2008, and ICES in 2007.²⁸⁰

NEAFC has introduced measures to manage its fisheries and protect marine biodiversity in its area of responsibility. In 2002, it created a fisheries closure area in the Rockall Area for the protection of juvenile fish.²⁸¹ In 2004, it adopted measures for the protection of vulnerable deep-water habitats by, between 2005 and 2007, banning bottom fishing and long-line fishing over an area on the Reykjanes Ridge as well as on four adjacent seamounts.²⁸² In 2006, it prohibited gillnet fishing as well as entangling and trammel nets below 200 metres and adopted measures to minimise ghost fishing for the whole of the NEAFC Regulatory Area.²⁸³ In 2007, it banned bottom fishing for the protection of deep-water corals in the Rockall-Hatton Bank.²⁸⁴ In 2008, NEAFC adopted measures on the identification and assessment of existing bottom fishing activities within the NEAFC Regulatory Area and outlined an interim protocol on exploratory bottom fishing for new bottom fishing areas.²⁸⁵ In 2009, it closed several large areas on the Mid-Atlantic Ridge to bottom fisheries in order to protect VMEs,

²⁷⁶ Trond Bjørndal, 'Overview, Roles, and Performance of the North East Atlantic Fisheries Commission (NEAFC)' (2009) 33 *Marine Policy* 685, 686.

²⁷⁷ *Ibid* 687.

²⁷⁸ <http://www.neafc.org/about> (accessed: 3 January 2015).

²⁷⁹ NEAFC Performance Review Panel, 'Report of the North East Atlantic Fisheries Commission, NEAFC' (Report, NEAFC, 2006); NEAFC, *Report of the Performance Review Panel of the North East Atlantic Fisheries Commission, NEAFC* (2014) NEAFC <www.neafc.org/system/files/Final_Report_2014_NEAFC_Review.pdf> (accessed: 3 January 2015).

²⁸⁰ www.neafc.org/system/files/opsar_mou.pdf; www.neafc.org/system/files/ices_mou_2007.pdf (both accessed: 3 January 2015).

²⁸¹ Hoydal et al, above n 246, 230.

²⁸² *Ibid* 230. See: www.neafc.org/system/files/REC_IV%20Closure_Reccom_2005.pdf (accessed: 28 February 2015).

²⁸³ Hoydal et al, above n 246, 229 and 230. See: www.neafc.org/system/files/rec-3_deep-water-gillnet-.pdf (accessed: 28 February 2015).

²⁸⁴ Hoydal et al, above n 246, 230. See: www.neafc.org/system/files/rec-5-2007_rockall-haddock.pdf (accessed: 28 February 2015).

²⁸⁵ Hoydal et al, above n 246, 230. See: www.neafc.org/system/files/16-rec_bottom_fishing_em_2008.pdf (accessed: 28 February 2015).

which will remain closed until 2017 at least.²⁸⁶ It closed another VME area on the Edora Bank in 2012.²⁸⁷

With OSPAR and NEAFC covering the same geographic area in the North-East Atlantic and both their mandates extending to ABNJ; getting scientific advice from the same institution, ICES; and having an almost similar State membership, this region presents a well-established framework to work towards the conservation of marine biodiversity in ABNJ.²⁸⁸

2.8 Conclusion

The importance of the oceans and biodiversity in sustaining life on Earth cannot be underestimated. Particularly the high seas, representing 64 per cent of the oceans' surface, play a key role in our planet's functioning. With the increasing loss of biodiversity due to growing human pressures and the resulting reduction in the provision of ecosystem services, the international community has focused its attention on biodiversity conservation and taken steps to reduce this loss. The continuing decline of marine resources has prompted a focus on marine conservation and more sustainable fisheries management from the 1970s onward and, since the early 2000s, there has been growing attention to the conservation of high seas biodiversity.

As ABNJ is currently governed by a sector-based institutional and legal framework, the conservation of biodiversity on the high seas presents many challenges, mainly of an institutional, legal and cooperative nature. The proposed way forward, which has been endorsed by a majority of States in the BBNJ Working Group, is by negotiating, adopting and implementing an implementing agreement to the LOSC for the conservation and sustainable use of marine biodiversity in ABNJ. This is likely to take some years to materialise, underscoring the need for interim and ongoing efforts at the regional level to conserve and sustainably use marine biodiversity in ABNJ. The international community has therefore endorsed the regional governance of marine biodiversity in ABNJ as a complementary, critical and effective interim measure for the

²⁸⁶ <http://www.neafc.org/closures/vme> (accessed: 3 January 2015).

²⁸⁷ <http://www.neafc.org/closures/edorabank> (accessed: 3 January 2015).

²⁸⁸ Hoydal et al, above n 246, 225.

conservation and sustainable use of marine biodiversity in ABNJ, as showcased for instance by the work undertaken in the North-East Atlantic.

Notably, the importance of regional cooperation, mainly through regional cross-sectoral cooperation, is underlined as a key requirement for successful management and conservation and sustainable use of high seas biodiversity. In implementing a cooperative regional approach to management, RFMOs and RSOs can play a key role by bringing the fisheries and conservation streams of governance closer together and thereby promoting integrated ocean management. The incorporation of biodiversity obligations into RFMO mandates and their need to cooperate and collaborate more with RSOs has been suggested by many scholars and policy makers and is being explored in this thesis.

Given the importance of the Southeast Pacific region in terms of productivity and global fisheries catches, this region will be the focus of this research. With fishing recognised as the main threat to biodiversity in this region and the impact that fisheries have on biodiversity, this thesis will focus on the conservation of high seas biodiversity in the Southeast Pacific region from a fisheries-threat perspective. The more advanced North-East Atlantic region, with its RFMO-RSO collaboration and successful establishment of fisheries closure areas and MPAs in ABNJ, represents a good precedent for this research on the Southeast Pacific region.

3 INTERNATIONAL LAW AND POLICY FRAMEWORK FOR MARINE BIODIVERSITY CONSERVATION IN ABNJ

3.1 Introduction

This chapter provides an overview of the global legal framework in place for the conservation of marine biodiversity in areas beyond national jurisdiction (ABNJ). It examines the special status of the high seas and deep seabed and their resources in ABNJ in order to understand the implications that this has for the conservation of marine biodiversity in ABNJ. As will be highlighted in this chapter, biodiversity is a complex and multidimensional concept. It can only be conserved and sustainably used through its components, namely biological resources, also termed living resources, and ecosystems.¹ The global legal framework is then examined, focusing on the conservation, management and enforcement requirements for the protection of the marine environment and the conservation of marine living resources in ABNJ.

3.2 Status of ABNJ and its Resources

Marine areas beyond the national jurisdiction of States are legally constituted of the high seas, the water column beyond the national jurisdiction of States representing 64 per cent of the world's oceans, and the Area, the seabed area beyond the national jurisdiction of States (Figure 3.1).² The exact extent of the Area is currently unknown as many States are claiming the right to extended continental shelves since the adoption of the *United Nations Law of the Sea Convention* (LOSC) and many of these claims have yet to be processed by the Commission on the Limits of the Continental Shelf (CLCS). Being marine ABNJ, States cannot claim any sovereignty or sovereign rights over them or their resources.³ However, the LOSC differentiates between the high seas, governed by the principle of freedom of the high seas, and the Area, governed by the principle of common heritage of mankind.⁴ This latter principle was first proposed by Arvid Pardo of Malta during his speech at the United Nations General Assembly (UNGA) on 1

¹ Both the terms biological resources and living resources are used as synonyms throughout this thesis.

² *United Nations Convention on the Law of the Sea*, opened for signature 10 December 1982, ATS 31 (entered into force 16 November 1994) art 86 ('*LOSC*'). In this provision, the high seas are legally defined as: 'all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State'. In Article 1 of the *LOSC*, the Area is defined as: 'seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction'.

³ Ibid art 89 and art 137. Article 89, talking about the high seas, states that 'no State may validly purport to subject any part of the high seas to its sovereignty' while Article 137, on the Area, states that 'any part of the Area or its resources, nor shall any State or natural or juridical person appropriate any part thereof. No such claim or exercise of sovereignty or sovereign rights nor such appropriation shall be recognized'.

⁴ Ibid art 136.

November 1967. For the Area, the LOSC vests the rights in its non-living resources in mankind to be managed by the International Seabed Authority (ISA) on behalf of all nations.⁵ All States Parties to the LOSC are *ipso facto* members of the ISA.⁶ With headquarters in Kingston, Jamaica, the ISA has the mandate to organise, control and administer the exploration and exploitation of mineral resources in the Area, on behalf of the international community.⁷ At the early stage of seabed mining exploration, the ISA has the responsibility to ensure fair and equitable access to and sharing of mineral resources to all interested countries; develop adequate guidelines and regulations for the safe undertaking of mining activities both in terms of the protection of human life and the protection of the marine environment; and promote international cooperation to carry out marine scientific research in the Area.⁸

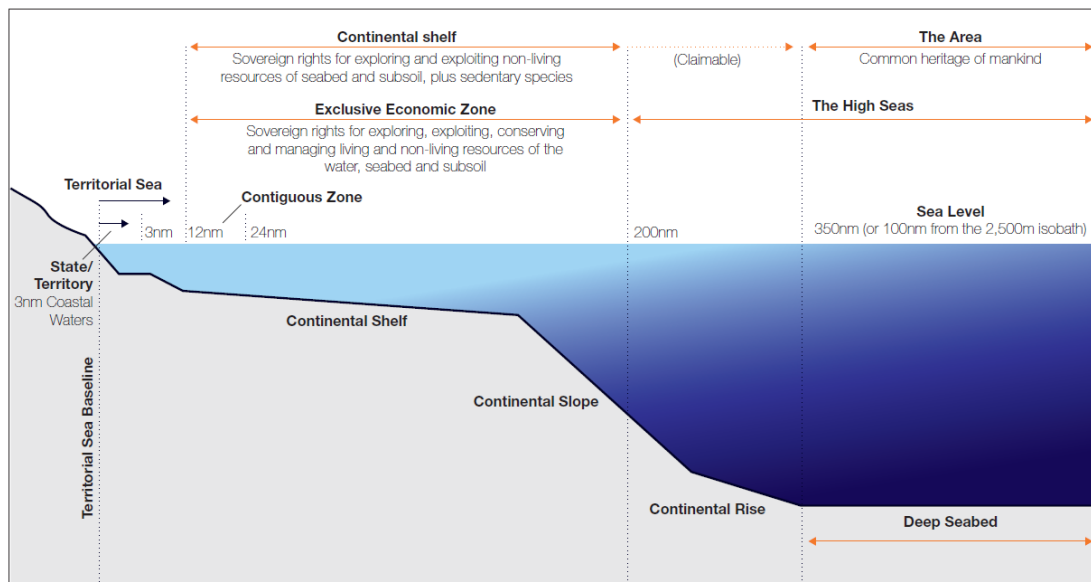


Figure 3.1: The Various Legally Defined Maritime Zones

(Source: Rogers et al 2014)⁹

The ISA does not have the mandate to manage or regulate marine living resources found on or in the seabed but has an obligation to ensure that the mining activities taking place in the Area do not adversely affect them or the marine environment.¹⁰ The high seas, on the other hand, are global commons and legally considered ownerless as they are not

⁵ Ibid art 137.2.

⁶ Ibid art 156.

⁷ Ibid art 133, art 137.2 and art 157.

⁸ Ibid art 140, art 143, art 145, art 146 and art 148.

⁹ A D Rogers, U R Sumaila, S S Hussain and C Baulcomb, 'The High Seas and Us: Understanding the Value of High Seas Ecosystems' (Report, Global Ocean Commission, 2014) 4.

¹⁰ LOSC art 145.

subject to States' sovereignty and all States, whether coastal or landlocked, have access to them.¹¹

The doctrine of freedom of the high seas originates from the time when large maritime powers, mainly the Dutch and the British, had an interest in the unrestrained accessibility to and non-regulation of the high seas for trade purposes.¹² Dutch lawyer Hugo Grotius was appointed by the Dutch East India Company to challenge the right of maritime powers to appropriate parts of the high seas to their sovereignty. He argued that the high seas cannot be acquired by any State, wealthy and powerful as it might be, due to the ocean's vastness and the inexhaustibility of resources.¹³ Grotius is credited as being the first to develop the concept of the freedom of the seas in his 1609 book *Mare Liberum*. Although these arguments are no longer applicable, this *laissez-faire* regime has prevailed over other viewpoints of the time and the doctrine of the freedom of the high seas continues to be applied to this date, albeit in a more restricted manner.¹⁴ Advances in science and technology and the codification of legal rights and obligations for the use and management of the ocean have challenged this unqualified notion of freedom of the high seas. Scientific discoveries brought to light the marine wealth found within as well as outside of coastal areas.

The compromise achieved through the 1958 *United Nations Convention on the High Seas*, namely a six nautical mile territorial sea annexed to a six nautical mile fishing zone, was under debate as States increased their interest in bringing under their jurisdiction larger marine areas adjacent to their coasts to make use of these resources.¹⁵ Chile, Ecuador and Peru were the first countries to claim sovereign rights over a 200 nautical mile zone, as formalised in the 1952 *Santiago Declaration*.¹⁶ One of the reasons for this claim was the negative impacts of marine resource exploitation by

¹¹ Ibid art 87 and art 89. Susan J Buck, *The Global Commons: an Introduction* (Earthscan, 1998) 1. She defines global commons as 'resource domains in which common pool resources are found'. Apart from the high seas, other global commons include Antarctica, the Atmosphere, Space as well as deep seabed minerals.

¹² R P Anand, 'Changing Concepts of Freedom of the Seas: a Historical Perspective' in Jon M Van Dyke, Durwood Zaelke and Grant Hewison (eds), *Freedom for the Seas in the 21st Century: Ocean Governance and Environmental Harmony* (Island Press, 1993) 72, 77.

¹³ Bruce McLennan, 'The History of Oceans Governance' (Monograph Series, No 9, Australian Defence College, 2006) 14; Feenstra, Robert, *Hugo Grotius Mare Liberum 1609-2009* (Brill Academic Publishers, 2009).

¹⁴ Anand, above n 12, 77. One divergent viewpoint was published in 1652 by John Selden as 'Mare Clausum: Of the Dominion, or, Ownership of the Sea' (Selden, John, *Mare Clausum seu de Dominio Maris Libri Duo* (Londini, 1635)). He argued that the oceans can be appropriated in the same way as terrestrial territory.

¹⁵ *United Nations Convention on the High Seas*, opened for signature 29 April 1958, ATS 12 (entered into force 30 September 1962).

¹⁶ CPPS, 'Declaración de Santiago ('Declaración sobre Zona Marítima')' (Santiago de Chile, 18 de agosto de 1952) in CPPS, *Textos Básicos* (CPPS Secretaría General, 4th ed, 2013) 5.

distant water fishing nation vessels (DWFNs) taking place in high seas areas adjacent to sovereign marine zones on coastal States' livelihood and economic development. This declaration triggered worldwide claims for an extension of State sovereign rights up to 200 nautical miles, notably in Latin America and Africa.¹⁷ The size of the high seas has hence been considerably reduced since the establishment of exclusive economic zones (EEZs). These were negotiated during the Third United Nations Conference on the Law of the Sea (UNCLOS III) and added to the 1982 LOSC as a compromise to increase States' use of the oceans' natural resources while keeping the principle of freedom of the high seas. Coastal States now have sovereign rights over marine resources up to 200 nautical miles from their territorial sea baselines. All these factors have contributed to the need to place qualifications on the freedom of the high seas.

The 1982 LOSC and an earlier version of its high seas provisions (the 1958 *United Nations Convention on the High Seas*) formally codified the principle of freedom of the high seas.¹⁸ This gives all States, whether coastal or land-locked, the right to carry out any activities on the high seas, including the ones expressly outlined in the LOSC, provided that these activities are exercised reasonably under the conditions outlined in Part VII of the LOSC and are not prohibited by the LOSC or international law.¹⁹ These conditions include the need for the high seas to be used for peaceful purposes;²⁰ to give due regard to other States' interests;²¹ to recognise the right of coastal States to claim and make use of their extended continental shelf beyond the 200 nautical mile cut-off which may constrain the freedoms enjoyed by all States on the high seas above these

¹⁷ See generally, Astrid Espaliat Larson and María José Henríquez, 'Conflictos Pesqueros Contemporáneos: la Búsqueda de una Gestión Racional' (2003) 36(143) *Estudios Internacionales* 127; Hugo Llanos Mansilla, 'La Comisión Permanente del Pacífico Sur y su Respuesta a la Corte Internacional de Justicia' (2011) 2(1) *Revista de la Facultad de Derecho* 95; Francisco Orrego Vicuña, 'La Aplicación de la Convención de las Naciones Unidas Sobre el Derecho del Mar en el Derecho y la Práctica de América Latina' (1994) *Tecnos* 337; Francisco Orrego Vicuña, 'Trends and Issues in the Law of the Sea as Applied in Latin America' (1995) 26(2) *Ocean Development and International Law* 93.

¹⁸ LOSC art 87. The International Law Commission decided at its first session in 1949 to start discussions on a legal regime for the oceans, which it carried out between 1950 and 1956, producing a Commission report containing drafts of legal regimes for the different marine zones. Following discussions on this report at the 1957 UNGA, UNCLOS I was convened in Geneva, Switzerland, in 1958. It resulted in the adoption of four conventions and an optional protocol: the *Convention on the Territorial Sea and the Contiguous Zone* (in force in 1964); the *Convention on the High Seas* (in force in 1962); the *Convention on Fishing and Conservation of the Living Resources of the High Seas* (in force in 1966); the *Convention on the Continental Shelf* (in force in 1964) and the *Optional Protocol of Signature Concerning the Compulsory Settlement of Disputes* (in force in 1962). UNCLOS II followed in 1960 but with no outcome. Finally, a third and final Conference (UNCLOS III) took place between 1973 and 1982 and resulted in the adoption of the LOSC (in force in 1994). Source: <http://legal.un.org/diplomaticconferences/> (accessed: 15 August 2014).

¹⁹ Ibid; Catherine Floit, 'Reconsidering Freedom of the High Seas: Protection of Living Marine Resources on the High Seas' in Jon M Van Dyke, Durwood Zaelke and Grant Hewison (eds), *Freedom for the Seas in the 21st Century: Ocean Governance and Environmental Harmony* (Island Press, 1993) 310, 312. These activities include the right to overfly and navigate the high seas, to lay submarine cables and pipelines, to construct artificial islands and other installations, to fish and to undertake marine scientific research.

²⁰ LOSC art 88.

²¹ Ibid art 87.2.

areas;²² to have regard to the activities taking place in the deep seabed beyond national jurisdiction (the Area);²³ to take measures for the conservation of high seas living resources and cooperate with other States in this regard;²⁴ to take measures to maintain or restore stocks of high seas harvested living resources and their dependent or associated marine species;²⁵ as well as to protect and preserve the marine environment.²⁶ A growing number of other global and regional, hard and soft law agreements and customary international law further impose a number of obligations and restrictions on States that limit their ability to freely use and access the resources of the high seas. Under these agreements, States also have a duty to conserve biodiversity and to apply modern conservation principles.²⁷ Furthermore, the freedoms are subject to the general legal principles of State responsibility, liability and accountability. Therefore, freedom of the high seas is restricted in scope by all the above-mentioned conditions so that effectively, States enjoy only conditional freedoms that must be carried out ‘under [these] agreed-on legal principles’.²⁸

The particular legal status conferred upon the high seas has important implications for the exploitation and conservation of high seas living resources. Because of the high seas’ status as global commons, States have no sovereignty or sovereign rights over these resources.²⁹ High seas resources are open access and common property resources that can be freely exploited by all States.³⁰ They are ownerless until they are caught, at which point they become the property of the person who caught it. One of the consequences of being open access resources is that they have a high subtractability.³¹

²² Ibid art 77. This provision allows the coastal State to exploit the natural resources of its continental shelf. However, the coastal State may not infringe or unjustifiably interfere with the freedoms of the high seas enjoyed by all States on its extended continental shelf (art 78.2). This is also applicable to marine scientific research conducted on the continental shelf (art 240.C).

²³ Ibid art 147.3.

²⁴ Ibid art 117 and art 118.

²⁵ Ibid art 119.

²⁶ Ibid art 192.

²⁷ *Convention on Biological Diversity*, opened for signature 5 June 1992, ATS 32 (entered into force 29 December 1993) (‘CBD’) art 6 and art 10; United Nations General Assembly, Report of the United Nations Conference on Environment and Development, A/CONF.151/26 (Vol. I) (12 August 1992) annex I (‘Rio Declaration on Environment and Development’) (‘Rio Declaration’). This soft law agreement encourages States to apply the precautionary approach (Principle 15), the polluter pays principle (Principle 16), inter- and intra-generational equity principles (Principle 3) as well as the application of environmental impact assessments (EIAs) (Principle 17).

²⁸ David Freestone, ‘Principles Applicable to Modern Oceans Governance’ (2008) 23 *International Journal of Marine and Coastal Law* 385; Anand, above n 12, 83.

²⁹ LOSC art 89.

³⁰ Also termed common pool resources. They are ‘subtractable resources managed under a property regime in which a legally defined user pool cannot be efficiently excluded from the resource domain’ (Buck, above n 11, 5). The legal status of high seas living resources is disputed. Some categorise them as falling under the property right regime *res communis*, which means that they belong to the whole community and therefore cannot be appropriated. They are accessible and exploitable by the whole community. Others categorise them as *res nullius*, which means that they belong to no-one and thus can be freely used by everyone.

³¹ Buck, above n 11, 5; Elinor Ostrom et al, ‘Revisiting the Commons: Local Lessons, Global Challenges’ (1999) 284 *Science* 278, 278-279.

any State has the right to access and exploit high seas living resources so there is no limit as to how many users can exploit these resources. Furthermore, no State can be excluded from exercising its right of exploitation.³² According to Ostrom et al there are four user types of common property resources: a) free-riders who behave only in their self-interest and never cooperate;³³ b) users who are unwilling to cooperate except when guaranteed that there is no risk from free-riders; c) users who are willing to cooperate trusting that others will follow; and d) altruists who will work towards higher yields for the group.³⁴ Open access rights imply that the exploitation of high seas living resources is based on the rival consumption of resources by States. Thus each user will maximise the use of the commons to their own benefit and profit without attention to the impact this may have on other users or on the condition of the commons. This maximisation of benefits eventually leads to the degradation of the commons as well as the depletion and overexploitation of its exhaustible resources, a phenomenon described by Hardin as the Tragedy of the Commons.³⁵ This comes as a consequence of sharing a commons where individual gain prevails at the expense of the community.³⁶

As will be shown in the following section, new legal agreements, such as the 1995 *United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks* (UNFSA), have contributed to the partial attribution of some high seas fish stocks, highly migratory and straddling fish stocks to regional fisheries organisations (RFO).³⁷ The RFOs have the mandate and power to restrict the access to and the exploitation of these high seas fisheries resources. It is a partial attribution of stocks as not all RFOs have a management mandate; most of them have an advisory mandate.

³² Ibid.

³³ Free-riders are defined as: 'those nations that fail to subscribe to a commitment undertaken by a majority of others, sometimes thwarting the efforts of others, sometimes profiting from their voluntary abstention' (Erik Franckx, '*Pacta Tertiis* and the Agreement for the Implementation of the Straddling and Highly Migratory Fish Stocks Provisions of the United Nations Convention on the Law of the Sea' (2000) 8 *Tulane Journal of International and Comparative Law* 4, 54).

³⁴ Ostrom et al, above n 31, 279.

³⁵ Garrett Hardin, 'The Tragedy of the Commons' (1968) 162 *Science* 1243.

³⁶ One of best known example of overexploitation of common resources comes from high seas fisheries. See: H Scott Gordon, 'The Economic Theory of a Common-Property Resource: The Fishery' (1954) 62(2) *Journal of Political Economy* 124; Stephanie F McWhinnie, 'The Tragedy of the Commons in International Fisheries: An Empirical Examination' (2009) 57 *Journal of Environmental Economics and Management* 321; Stefano B Longo and Rebecca Clausen, 'The Tragedy of the Commodity: The Overexploitation of the Mediterranean Bluefin Tuna Fishery' (2011) 24(3) *Organization and Environment* 312; Patrick Love, *Fisheries: While Stocks Last?* (OECD Publishing, 2010).

³⁷ *United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, opened for signature 8 September 1995, ATS 8 (entered into force 11 December 2001) ('UNFSA'). The UNFSA is the outcome of a conference requested at the United Nations Conference on Environment and Development held in June 1992 in Rio de Janeiro, Brazil.

Regional fisheries management organisations (RFMOs) have also not been established in all parts of the oceans so that a gap in geographical coverage remains. This limits the open access right of States – at least for specific fish stocks, not for all high seas living resources – and confers the responsibility of looking after the global commons to a group of States rather than individual States. This shared responsibility involves the need for States to cooperate and collaborate together. This duty to cooperate is discussed in more detail at the end of this chapter as well as in Section 4.5 of Chapter 4 on institutional interplay.

3.3 Global Legal Framework for Marine Biodiversity in ABNJ

3.3.1 Legal Framework for the Governance of the High Seas

The legal framework for the governance of the oceans consists of rules and norms from the 1982 LOSC and a wide-ranging complementary set of international and regional soft and hard law instruments. The LOSC is the umbrella convention for the oceans, described in Chapter 17 of the 1992 *Agenda 21* as ‘providing the international basis upon which to pursue the protection and sustainable development of the marine and coastal environment and its resources’.³⁸ The LOSC is the result of years of negotiations that led to its adoption in 1982 and its entry into force in 1994. It is perceived as one of the greatest achievements of international law. To date, 166 States have ratified the LOSC, which means that more than three quarters of the world’s States are party to this convention.³⁹ As a result of this, most of the LOSC provisions reflect customary international law by both parties and non-parties to the LOSC.⁴⁰ Underpinning this legal framework are rules and principles of international law that apply to the governance of the oceans for matters not regulated by the LOSC.

One of the main principles of international law underpinning the governance of the oceans is the principle of sovereignty and equality of States in their legal rights and responsibilities. The principle of sovereignty was first codified in the 1945 *Charter of the United Nations* and further reiterated in the 1970 *Declaration on Principles of*

³⁸ United Nations General Assembly, *Report of the United Nations Conference on Environment and Development*, Conference on Environment and Development, A/CONF.151/26 (Vol. II) (13 August 1992) chapter 17 (‘Protection of the Oceans, All Kinds of Seas, Including Enclosed and Semi-Enclosed Seas, and Coastal Areas and the Protection, Rational Use and Development of their Living Resources’) (‘Agenda 21, Chapter 17’) para 17.1.

³⁹ www.un.org/depts/los/reference_files/status2010.pdf (as of 10 October 2014; accessed: 31 December 2014).

⁴⁰ Jon M Van Dyke, ‘International Governance and Stewardship of the High Seas and its Resources’ in Jon M Van Dyke, Durwood Zaelke and Grant Hewison (eds), *Freedom for the Seas in the 21st Century: Ocean Governance and Environmental Harmony* (Island Press, 1993) 13, 13.

International Law Concerning Friendly Relations and Cooperation Among States.⁴¹

This sovereignty principle confers upon States the independent and exclusive authority over their territory, which does not extend beyond the water column of their internal waters or archipelagic waters and, under flag State jurisdiction, authority over their ships on the high seas.⁴² Two other principles of international law constrict to a certain degree this State sovereignty principle: the duty to comply in good faith with legal provisions to which States consented to be bound (*pacta sunt servanda*) and the duty to ensure that activities carried out under a State's jurisdiction or control do not cause damage to or harm the environment of other States or of ABNJ (*sic utere principle*).⁴³

This latter principle, also known as the principle of good neighbourliness, comes from the Latin term *sic utere tuo ut alienum non laedas*, which translates as 'use your property in such a manner as not to injure that of another'. This principle has been used in several multilateral conventions, including in the 1972 *Declaration of the United Nations Conference on the Human Environment* (Stockholm Declaration), the 1972 *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter*, the 1979 *Convention on Long-range Transboundary Air Pollution*, the 1974 *Charter of Economic Rights and Duties of States*, the 1982 *World Charter for Nature*, the 1982 LOSC, the 1992 *Rio Declaration* and the 1992 *Convention on Biological Diversity* (CBD).⁴⁴ These two principles increase State responsibility over environmental matters and thus further restrict their exercise of the freedom of the high seas.

The *pacta sunt servanda* principle applies to States that have given their consent to be bound by legal provisions. According to D'Amato, it 'requires parties to a transaction to

⁴¹ *Charter of the United Nations* art 2; United Nations General Assembly, *Declaration on Principles of International Law Concerning Friendly Relations and Cooperation Among States in Accordance with the Charter of the United Nations*, GA Res 25/2625, 25th sess, Agenda Item 85, A/RES/25/2625 (24 October 1970) ('*Declaration on International Law Principles*'). It was first mentioned in the Joint Four-Nation Declaration of 1943, in which the governments of the USA, the UK, the Soviet Union, and China emphasise the need to establish a United Nations (UN) Organisation (termed 'general international organization') under this principle of sovereign equality (*Joint Four-Nation Declaration* (1943) art 4).

⁴² LOSC art 2 and art 94.1.

⁴³ Ibid art 300; *Vienna Convention on the Law of Treaties*, opened for signature 23 May 1969, ATS 2 (entered into force 27 January 1980) ('*Vienna Convention*') preamble. The sentence *pacta sunt servanda* is Latin for 'agreements must be kept'.

⁴⁴ *Declaration of the United Nations Conference on the Human Environment* (1972) <<http://www.unep.org/Documents.Multilingual/Default.asp?documentid=97&articleid=1503>> (accessed: 12 March 2015) ('*Stockholm Declaration*') principle 21; *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter*, opened for signature 13 November 1972, ATS 16 (entered into force 30 August 1975) preamble; *Convention on Long-range Transboundary Air Pollution*, opened for signature 13 November 1979, 18 ILM 1442 (entered into force 16 March 1983) Preamble; United Nations General Assembly, *Charter of Economic Rights and Duties of States*, GA Res 29/3281, 29th sess, Agenda Item 48, A/RES/29/3281 (12 December 1974) art 30; United Nations General Assembly, *World Charter for Nature*, GA Res 37/7, 48th sess, A/RES/37/7 (28 October 1982) art 21.d; *LOSC* art 194.2; *Rio Declaration* principle 2; *CBD* art 3.

deal honestly and fairly with each other, to represent their motives and purposes truthfully, and to refrain from taking unfair advantage that might result from a literal and unintended interpretation of the agreement between them'.⁴⁵ As stated by Kiss and Shelton 'neither the rupture of diplomatic relations nor a change of government affects the continuity of treaty obligations'.⁴⁶ Third States, that is those States that have not ratified legal instruments, are not bound by and cannot be forced to be bound by treaties' provisions unless these provisions have been recognised as being part of customary international law (*pacta tertiis nec nocent nec prosunt*).⁴⁷ However, these States have the duty under international law to cooperate in maintaining international peace and security and not to undermine efforts, such as conservation and management efforts, undertaken by other States.⁴⁸

The responsibility of States to prevent transboundary harm when exercising their right to resource exploitation is generally recognised as expressing a fundamental norm of customary international law and provides the basis for the legal provisions on the protection of the marine environment in ABNJ. This principle has its roots in the *Trail Smelter Case* and was subsequently taken up in several legal instruments, including the 1972 *Stockholm Declaration*, the 1982 *World Charter for Nature*, the 1992 *Rio Declaration* and the 1992 CBD.⁴⁹ This principle underscores States' responsibility and liability when causing environmental damage and underlines the principles of due diligence to prevent such harm from occurring and reasonable use so as not to interfere unreasonably with other States' freedoms.

Although the LOSC provides the legal basis for the governance of the oceans, the legal provisions relevant to the high seas are limited in their number and outreach, mainly focusing on the status and duties of ships.⁵⁰ They are scarce and scattered across various

⁴⁵ Anthony D'Amato, 'Good Faith' in R Bernhardt, Max Planck Institute for Comparative Public Law and International Law (eds), *Encyclopedia of Public International Law* (1992) 599.

⁴⁶ Alexandre Kiss and Dinah Shelton, *Guide to International Environmental Law* (Martinus Nijhoff, 2007) 7.

⁴⁷ *Vienna Convention* art 34 and art 38.

⁴⁸ *Charter of the United Nations* art 2; United Nations Food and Agriculture Organization, *Code of Conduct for Responsible Fisheries* (1995) ('Code of Conduct') art 7.1.5. States that are not members of RFOs have the duty to cooperate in the conservation and management of fisheries resources by applying the conservation and management measures adopted by these RFOs.

⁴⁹ *Stockholm Declaration* principle 21; *World Charter for Nature* art 21.d; *Rio Declaration* principle 2; *CBD* art 3; *Trail Smelter Case (United States v Canada)* [1941] 3 UN Rep International Arbitral Awards 1905. The Tribunal decided upon two key principles: the first one that States have the duty to prevent transboundary harm; the second one that the polluting State has the duty to compensate the other State for the transboundary harm it has caused. This is known today as the polluters pay principle in Principle 16 of the 1992 *Rio Declaration*.

⁵⁰ The LOSC is seen as the main legal agreement for ocean management to which other compatible agreements have been added. See: Rüdiger Wolfrum and Nele Matz, 'The Interplay of the United Nations Convention on the Law of the Sea and the Convention on Biological Diversity' in Jochen A Frowein and Rüdiger Wolfrum (eds), *Max Planck Yearbook of United Nations Law* (Kluwer

hard and soft law instruments within a sector-based legal framework. Contributing to this global sector-based legal framework for the high seas and strengthening the LOSC provisions are several conventions and agreements. These include those established under the aegis of the International Maritime Organization (IMO) with regard to safety at sea and the prevention and control of marine pollution from shipping, including alien marine organisms found in ballast water, and oil pollution;⁵¹ under the Food and Agriculture Organization (FAO) and RFOs with regard to fisheries;⁵² under the United Nations Environment Programme (UNEP) with regard to environmental matters;⁵³ and under the International Whaling Commission (IWC) with regard to whaling.⁵⁴

Law International, 2000) 445, 477. Most of the LOSC provisions on the high seas were directly transferred from the 1958 *United Nations Convention on the High Sea* and reflect customary international law. See: Tullio Treves, *1958 Geneva Conventions on the Law of the Sea, Geneva, 29 April 1958* (2008) Audiovisual Library of International Law <<http://legal.un.org/avl/ha/gclos/gclos.html>> (accessed: 5 January 2015). General provisions for the high seas are found in Section 1 of Part VII of the LOSC (arts 86-115) and deal with the status of the high seas, the status of ships, the rights and duties of flag States, piracy, and the laying of submarine cables and pipelines. Section 2 focuses on the conservation and management of high seas living resources in arts 116-120.

⁵¹ The IMO, with headquarters in London, UK, was established through a 1948 Convention adopted in Geneva, in force in 1958, and was known up to 1982 as the Inter-Governmental Maritime Consultative Organization. It has 170 member States and three Associate Members. IMO's mission is: '(...) to promote safe, secure, environmentally sound, efficient and sustainable shipping through cooperation. This will be accomplished by adopting the highest practicable standards of maritime safety and security, efficiency of navigation and prevention and control of pollution from ships, as well as through consideration of the related legal matters and effective implementation of IMO's instruments with a view to their universal and uniform application' (International Maritime Organization, *Strategic Plan for the Organization (for the Six-Year Period 2014 to 2019)*, Resolution A. 1060(28), 29th sess, Agenda Item 8, A 28/Res. 1060 (27 January 2014) art 1.1). See: <http://www.imo.org/>. IMO has many treaties and protocols, of particular relevance: *International Convention for the Safety of Life at Sea*, opened for signature 1 November 1974, 1184 UNTS 2 (entered into force 25 May 1980); *Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships of 2 November 1973, as modified by the Protocol of 17 February 1978*, opened for signature 26 September 1997, ATS 37 (entered into force 19 May 2005); *Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships of 2 November 1973, as modified by the Protocol of 17 February 1978*, opened for signature 26 September 1997, ATS 37 (entered into force 19 May 2005); *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter*, opened for signature 13 November 1972, ATS 16 (entered into force 30 August 1975) ('*London Convention*'); *Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972*, opened for signature 7 November 1996, 36 ILM 1 (entered into force 24 March 2006) amended in 2006 ('*London Protocol*'); *International Convention on Oil Pollution Preparedness, Response and Co-operation*, opened for signature 30 November 1990, ATS 12 (entered into force 13 May 1995); *International Convention for the Control and Management of Ships' Ballast Water and Sediments*, opened for signature 13 February 2004 (not yet in force).

⁵² The FAO, founded in 1943 and based in Rome, Italy, is one of the UN specialised agencies with the mandate to ensure food security, including through sustainable fisheries and aquaculture. It has a membership of 191 States. Fisheries and aquaculture issues are discussed and global policies adopted through its Committee on Fisheries (COFI). COFI is mandated to review the work and the implementation of FAO's programme work on fisheries and aquaculture as well as review and provide advice regarding global issues related to fisheries and aquaculture. At the regional level, regional fishery organisations (RFOs) have been established to enhance and facilitate regional cooperation between States for the conservation and management of fisheries. The general functions of RFOs range from the collection, analysis and dissemination of information and data to the management of fisheries. Most of these bodies encompass national and regional waters and some have a competence area extending to the high seas (see Chapter 4 for more details on RFOs; FAO Fisheries and Aquaculture Department, *What are Regional Fisheries Bodies (RFBs)?* (27 March 2012); United Nations Food and Agriculture Organization <<http://www.fao.org/fishery/topic/16800/en>> (accessed: 20 December 2011)). FAO adopted several important legally binding agreements, including the 1995 *UNFSA; Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas* ('*Compliance Agreement*'), opened for signature 29 November 1993, ATS 26 (entered into force 24 April 2003); 1995 *Code of Conduct*; United Nations Food and Agriculture Organization, 'International Plan of Action for the Management of Fishing Capacity' (1999) ('*IPOA-Capacity*'); United Nations Food and Agriculture Organization, 'International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries' (1999) ('*IPOA-Seabirds*'); United Nations Food and Agriculture Organization, 'International Plan of Action for the Conservation and Management of Sharks' (1999) ('*IPOA-Sharks*'); United Nations Food and Agriculture Organization, 'International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing' (2001) ('*IPOA-IUU*'). See: <http://www.fao.org/>.

⁵³ UNEP was established in 1972 through the United Nations Conference on Human Environment with the mandate to promote the wise use and sustainable development of the global environment. The focus of UNEP is mainly on assessing environmental trends at the various political levels and developing environmental instruments. United Nations Environment Programme, *About UNEP* (27 March 2012) United Nations Environment Programme <<http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=43&ArticleID=3301&l=en>> (accessed: 29 February 2012). See: <http://www.unep.org/>.

This legal framework can be strengthened and updated through the adoption of further legally binding rules and norms of international law that can be established and prescribed by conventions, customs, the general practice of States (*opinio juris*) and judicial decisions.⁵⁵ Non-legally binding norms deriving from resolutions, declarations or codes of conduct also complement this global marine legal framework by showing States' intentions, concerns and 'desire to bring them into the law-making process'.⁵⁶ Reflecting the broad concerns of developed and developing States, States are more likely to agree and adhere to these soft law instruments, which can be negotiated and amended more quickly than their hard law counterparts.⁵⁷

Non-legally binding norms can make their way, albeit more slowly, into hard law through the customary recognition of States and therefore play an important role in contributing to the development and codification of the Law of the Sea. Of particular importance among the soft law agreements to influence the development of legal provisions and customs for the oceans are the 1972 *Stockholm Declaration*, the 1992 *Rio Declaration*, Chapter 17 on the oceans of the 1992 *Agenda 21*, the 2002 *Johannesburg Plan of Implementation* (JPOI) and the 1987 Brundtland Report, *Our Common Future*.⁵⁸ Chapter 17 of *Agenda 21* particularly contributed to the protection of the marine environment and the conservation of marine biodiversity. However, the fast proliferation of soft law in recent years has also contributed to the difficulties experienced by institutions in following and complying with these requirements.⁵⁹ The enforcement of the rules and standards appertaining to this sector-based legal framework is undertaken by national, regional and international institutions as there is no overarching institution for the enforcement and regulation of global marine legal issues (see Section 3.3.2.6).

⁵⁴ The IWC was established by the *International Convention for the Regulation of Whaling*, opened for signature 2 December 1946, ATS 18 (entered into force 10 November 1948) amended in 1956 ('*Whaling Convention*') to provide for the international regulation of whaling and the conservation of whale stocks. See: <https://iwc.int/home>.

⁵⁵ *Statute of the International Court of Justice* art 38(1).

⁵⁶ Kiss and Shelton, above n 46, 9.

⁵⁷ Ibid; Patricia Birnie, Alan Boyle and Catherine Redgwell, *International Law and the Environment* (Oxford University Press, 3rd ed., 2009) 111.

⁵⁸ World Summit on Sustainable Development, *Johannesburg Plan of Implementation* (2002) ('*JPOI*'); United Nations, *Report of the World Commission on Environment and Development*, Resolution A/42/427, 42nd sess, A/42/427 (4 August 1987) annex ('*Report of the World Commission on Environment and Development "Our Common Future"*'). The World Commission on Environment and Development, chaired by Gro Harlem Brundtland, was commissioned by the UNGA in its resolution 38/161 of December 1983 to notably 'propose long-term environmental strategies for achieving sustainable development by the year 2000'.

⁵⁹ Douglas M Johnston and David L VanderZwaag, 'The Ocean and International Environmental Law: Swimming, Sinking, and Treading Water at the Millennium' (2000) 43 *Ocean and Coastal Management* 141.

3.3.2 Legal Framework for the Management of Marine Living Resources in ABNJ

3.3.2.1 Conservation of Biodiversity as a Common Concern of Humankind

Biological diversity, shortened *biodiversity*, is a relatively recent term that was first defined in the 1992 CBD as:

*‘the variability among living organisms from all sources (...) and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems’.*⁶⁰

As shown by this definition, biodiversity is a complex and multidimensional concept which represents the variability within and among genes, species and ecosystems rather than their summation.⁶¹ Biodiversity is ‘the variability of life in all forms, levels and combinations’ and, therefore, an attribute of life that embraces the importance of connections and exchanges between species and with their environment, a concept that underpins ecosystem functioning and health.⁶² Given the conceptual nature of biodiversity, its conservation can only be achieved by defining legal obligations on the conservation and sustainable use of its tangible components, namely biological resources and ecosystems.⁶³ The existence of biological resources, also termed living resources, in their natural environment is hence a pre-requisite for biodiversity.⁶⁴

Recognising the vital role that biodiversity plays in sustaining life on Earth, the conservation of biodiversity has been designated as a common concern of humankind.⁶⁵ This underlies not only the global importance of biodiversity for the whole of humankind but also the interests that States have in the living resources encompassed within it. Consequently, the conservation of biodiversity becomes a matter of common interest and thus becomes a ‘legitimate matter for international regulation’.⁶⁶ This means that the sole responsibility that States commonly bear shifts towards a global

⁶⁰ CBD art 2.

⁶¹ Lyle Glowka et al, ‘A Guide to the Convention on Biological Diversity’ (Report, IUCN, 1994) 16.

⁶² Ibid.

⁶³ Ibid. Biological resources are defined as ‘genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity’ (CBD art 2) and thus are ‘tangible biotic components of ecosystems’ (Glowka et al, above n 61). Ecosystems are defined by the CBD as ‘a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit’ (CBD art 2).

⁶⁴ Rosemary Rayfuse, ‘Biological Resources’ in Daniel Bodansky, Jutta Brunnée and Ellen Hey (eds), *The Oxford Handbook of International Environmental Law* (Oxford University Press, 2007) 362, 366.

⁶⁵ CBD preamble.

⁶⁶ Kiss and Shelton, above n 46, 14.

responsibility borne by all States.⁶⁷ The compliance with this duty and the liability for infringements of duties in relation to biodiversity conservation becomes an *erga omnes* obligation, owed to all States, and is also a matter of international supervision enforceable by or on behalf of the whole international community.⁶⁸

Although the conservation of biodiversity is not part of customary international law, the 194 States Parties that have ratified the 1992 CBD, a near universal membership, acknowledge the conservation of biodiversity to be a common concern of humankind.⁶⁹ They have assumed global responsibility for their actions through the application of their duty to cooperate in the conservation of biodiversity in ABNJ.⁷⁰

However, as will be shown in Section 3.3.2.4 of this chapter, States assume fairly limited obligations under their international legal duty to cooperate for two main reasons. Firstly, the extent to which States have to cooperate is not explicitly defined in legal agreements, apart from some guidelines as to what successful cooperative outcomes should be, and can, therefore, be loosely interpreted by States.⁷¹ Secondly, the application of the duty to cooperate limits both States' sovereignty and their high seas freedoms, both of which are basic principles of international law, and hence may restrict States' willingness to enter into cooperative negotiations.

Owing to States' sovereignty and the absence of a supranational global oceans authority, there is no enforcement of this duty to cooperate. Cooperation must therefore be initiated, negotiated and enforced by States themselves, hence the fairly limited obligations imposed on States under this international legal duty.⁷² The adoption of the *Jakarta Mandate on Marine and Coastal Diversity* in 1995 emphasises the critical need to address marine and coastal biodiversity issues within the programme of action of the CBD, and stresses the importance that States should allocate to marine biodiversity

⁶⁷ The second meeting of the Group of Legal Experts to Examine the Concept of the 'Common Concern of Mankind' in Relation to Global Environmental Issues, which took place in Geneva, Switzerland, between 20 and 22 March 1991, emphasised that both responsibility and cooperation are an inherent part of the Common Concern of Humankind concept.

⁶⁸ Birnie et al, above n 57, 131.

⁶⁹ Convention on Biological Diversity, *List of Parties* Convention on Biological Diversity <<http://www.cbd.int/convention/parties/list/>> (accessed on 31 December 2014).

⁷⁰ CBD art 5. The duty to cooperate is a basic principle of international law. See Section 3.3.2.4 of this chapter for more details.

⁷¹ See Section 3.3.2.4 of this chapter on the duty to cooperate for the list of guidelines.

⁷² John Vogler, *The Global Commons: a Regime Analysis* (Wiley, 1995) 18.

conservation.⁷³ Since then, the need to conserve biodiversity and reduce biodiversity loss has been continuously emphasised demonstrating a global concern and interest of States in this issue. The reduction of biodiversity loss is one of the Millennium Development Goals (Target 7B), emphasising the existing link between sustainable development and the conservation of biodiversity.⁷⁴

Notwithstanding the responsibility that States have to conserve and sustainably use biodiversity, legal provisions on the conservation of marine biodiversity in ABNJ are scarce and scattered across several agreements that cover specific activity sectors, species related treaties or under the general obligation States have to protect the marine environment. The lack of a comprehensive legal framework for the management and conservation of marine biodiversity in ABNJ has been identified as one of the main concerns in achieving adequate conservation of this biodiversity. This led to the request at the UNGA in November 2004, 10 years after the entry into force of the LOSC, to establish the *Ad Hoc Open-ended Informal Working Group to Study Issues Relating to the Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction* (BBNJ Working Group) under the umbrella of the United Nations (UN). The objectives of the BBNJ Working Group are described in Section 2.6.1 of Chapter 2.⁷⁵

This request emphasised the global recognition by States of the importance of conserving and sustainably using biodiversity and the need to provide solutions to improve the legal and institutional framework. As highlighted in Chapter 2, a review process is underway in the BBNJ Working Group to explore the possibility of developing a multilateral agreement under the LOSC for the conservation and sustainable use of high seas biodiversity.

⁷³ Convention on Biological Diversity, *Decision Adopted by the Second Meeting of the Conference of the Parties*, UNEP/CBD/COP/2/19 Decision II/10, Conference of the Parties to the Convention on Biological Diversity, 2nd meeting (30 November 1995).

⁷⁴ United Nations, *Millennium Development Goal 7: Ensure Environmental Sustainability* United Nations <<http://www.un.org/millenniumgoals/enviro.html>> (accessed: 5 January 2015).

⁷⁵ United Nations General Assembly, *Resolution Adopted by the General Assembly*, GA Res 59/24, 59th sess, Agenda Item 49 (a), A/Res/59/24 (4 February 2005) para 73. Since its establishment, the BBNJ Working Group has met eight times: in 2006, 2008, 2010, 2011, 2012, 2013 and twice in 2014. It has met since 2010 on a yearly basis.

The LOSC does not address biodiversity as the convention preceded the introduction of this concept by a decade. Nevertheless, the LOSC's preamble explicitly mentions its aim to establish a:

'legal order for the seas and oceans (...) [to] promote (...) the equitable and efficient utilization of their resources, the conservation of their living resources, and the study, protection and preservation of the marine environment'.⁷⁶

Although not specifically mentioning the conservation of biodiversity, the LOSC does integrate the protection of the marine environment and the conservation of marine living resources into its overall objective. Other conventions dealing with marine issues must be consistent with this objective and, therefore, must be consistent with the protection and preservation of the marine environment and the conservation of marine life.⁷⁷

Because there are several components within the biodiversity concept, the legal framework for the management and conservation of marine biodiversity in ABNJ needs to be analysed within the broader framework of sector-based ocean management based on the three components that legally constitute biodiversity, namely ecosystems, biological resources and genetic resources. As explained at the beginning of this section, the conservation of biodiversity can only be achieved through the conservation and sustainable use of its two tangible components, namely biological resources and ecosystems. As this thesis' focus is on high seas biodiversity conservation from a fisheries threat perspective, the following section will outline the global legal framework for the conservation of marine biodiversity in ABNJ relating to two tangible components: firstly from an ecosystem perspective and secondly from a species perspective.

3.3.2.2 Protection of the Marine Environment

The conservation of marine biodiversity in ABNJ falls within the general obligation of customary international law for States to protect the marine environment and to

⁷⁶ LOSC preamble. Furthermore, art 192 specifically outlines the general legally binding obligation of States to protect and preserve the marine environment.

⁷⁷ Ibid art 237. See also: CBD art 22.2 'Contracting Parties shall implement this Convention with respect to the marine environment consistently with the rights and obligations of States under the law of the sea'. The UNFSA is less specific in this respect, simply highlighting that it 'shall be interpreted and applied in the context of and in a manner consistent with the Convention' (UNFSA art 4).

safeguard it from harm resulting from human activities.⁷⁸ This is a strong legally binding *erga omnes* obligation that applies to both marine areas within and beyond national jurisdiction and for which States are liable under international law for breaches in their fulfilment of this obligation.⁷⁹

This duty to protect the marine environment is an extension of the transboundary harm principle of international law. It includes the obligation for States to prevent harm to global common areas and to the shared resources of the high seas.⁸⁰ While it certainly limits States' freedoms on the high seas, this no-harm principle is 'neither an absolute prohibition on global or transboundary environmental damage, nor does it confer on [S]tates absolute freedom to exploit natural resources'.⁸¹ The exploitation of States' natural resources must, therefore, be consistent with their duty to protect the marine environment and be integrated within the general goal of sustainable development.⁸² The concept of sustainable development was first elaborated by IUCN (International Union for the Conservation of Nature) in its 1980 *World Conservation Strategy* and reiterated in the 1987 Brundtland Report.⁸³ It recognises the right of States to economic development corollary to their sovereignty but requires its integration with environmental protection. Economic development must, therefore, respect the no-harm principle, the sustainable use of living and non-living resources and the equitable allocation of resources.⁸⁴ As Principle 4 of the 1992 *Rio Declaration* states: 'In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it'.⁸⁵ The

⁷⁸ LOSC art 192; Jon M Van Dyke, 'Giving Teeth to the Environmental Obligations in the LOSC' in Alex G Oude Elferink and Donald R Rothwell (eds), *Oceans Management in the 21st Century: Institutional Frameworks and Responses* (Martinus Nijhoff, 2004).

⁷⁹ LOSC art 235; The 1982 *World Charter for Nature* encourages States to 'safeguard and conserve nature in areas beyond national jurisdiction' (United Nations General Assembly, *World Charter for Nature*, GA Res 37/7, 48th sess, A/RES/37/7 (28 October 1982) art 21.e). *Erga omnes* means 'duties owed to all' in Latin. Both Jutta Brunnée and Birnie et al take a cautious view as to whether these obligations are *erga omnes*. Birnie et al suggest that the protection of the environment has an *erga omnes* character, based on the International Law Commission reports (Jutta Brunnée, 'Common Areas, Common Heritage, and Common Concern' in Daniel Bodansky, Jutta Brunnée and Ellen Hey (eds), *The Oxford Handbook of International Environmental Law* (Oxford University Press, 2007) 550, 555; Birnie et al, above n 57, 131).

⁸⁰ Floit, above n 19, 314. The obligation for States to prevent harm to global common areas is outlined in LOSC art 194.2 and was mentioned in the United Nations General Assembly, *Cooperation between States in the Field of the Environment*, GA Res 2995/XXVII, 27th sess. (15 December 1972) and *Stockholm Declaration* principle 21. It was subsequently taken up in various other legal instruments, including in Principle 2 of *Rio Declaration*.

⁸¹ Birnie et al, above n 57, 115.

⁸² LOSC art 193. The duty to protect the marine environment is one of the three pillars necessary to achieve sustainable development as advocated by the United Nations.

⁸³ IUCN, 'World Conservation Strategy' (Report, IUCN, 1980); United Nations, *Report of the World Commission on Environment and Development*, Resolution A/42/427, 42nd sess, A/42/427 (4 August 1987) annex ('Report of the World Commission on Environment and Development "Our Common Future"').

⁸⁴ See: Birnie et al, above n 57, 115-116; *Rio Declaration* principles 3-8; *Pulp Mills on the River Uruguay (Argentina v Uruguay)* (Provisional Measures) [2006] ICJ Rep 135, 80; *Gabčíkovo-Nagymaros Dam Case* (Hungary v Slovakia) [1997] ICJ Rep 7, 140.

⁸⁵ *Rio Declaration* principle 4.

duty to protect the marine environment goes beyond the LOSC requirement for States to conserve high seas living resources to ensure their long-term exploitability as it includes the protection of habitats and ecosystems to ensure the continued balance of marine ecosystems.⁸⁶

The application of this duty requires an active role on the part of States. They must cooperate in taking concrete measures and elaborating rules and regulations for the prevention of damage to and the preservation of the condition of the marine environment from pollution from any sources and other high seas activities.⁸⁷ States must take into account the fragility and vulnerability of marine ecosystems and marine life as well as regional specificities of the marine environment.⁸⁸ The responsibility conferred upon States under LOSC Article 192 is both to conserve marine ecosystems and prevent, reduce and control marine pollution.⁸⁹

By taking into account marine ecosystems, States are required to protect the ‘whole biological equilibrium rather than just a species or its habitat’.⁹⁰ The LOSC does not specify which concrete measures to adopt, thus leaving States ‘to determine the level of environmental protection [they] aim to achieve’ and to use their duty to cooperate to adopt and implement measures.⁹¹ The regional seas programme (RSP) was established under the umbrella of UNEP to facilitate regional cooperation in the protection of the marine and coastal environments and the management of their living resources. It is one way States are fulfilling their duty to cooperate in protecting the marine environment.⁹²

Consistent with the requirement of furtherance of the general principles of marine environmental protection set out in the LOSC, other legal instruments have either reiterated or expanded this duty by specifically requesting the conservation of

⁸⁶ LOSC art 119. The protection of the marine environment is recognised as representing an ‘essential component of the global life-support system’ from which sustainable development is drawn (*Agenda 21, Chapter 17*, para 17.1).

⁸⁷ LOSC art 194.1 and 197. Pollution of the marine environment is defined as: ‘the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities’ (art 1). A non-exhaustive list of pollution sources is given in art 194.3.

⁸⁸ Ibid art 197.

⁸⁹ Ibid art 197; David Freestone, ‘Modern Principles of High Seas Governance: The Legal Underpinnings’ (2009) 39(1) *Environmental Policy and Law* 44.

⁹⁰ Rayfuse, above n 64, 381.

⁹¹ Kiss and Shelton, above n 46, 12.

⁹² To date, there are 13 regional seas organisations (RSOs) under this programme (Black Sea, Wider Caribbean, East Asian Seas, Eastern Africa, South Asian Seas, ROPME Sea Area, Mediterranean, North-East Pacific, Northwest Pacific, Red Sea and Gulf of Aden, South-East Pacific, Pacific and Western Africa) and five partner programmes (Antarctic, Arctic, Baltic Sea, Caspian Sea, North-East Atlantic). Source: <http://www.unep.org/regionalseas/about/default.asp> (accessed: 23 April 2014).

vulnerable and fragile marine ecosystems and habitats and the application of the ecosystem approach.⁹³ The LOSC has two legal provisions, which provide components of an ecosystem approach. These cover alien species introduction and fragile marine ecosystems protection.⁹⁴ However, they only implicitly suggest their application.⁹⁵ The 1982 *World Charter for Nature* also suggests their application by requesting that States manage exploited ecosystems and species in a way that does not endanger co-existing ecosystems or species.⁹⁶ The ecosystem approach was endorsed at the fifth Conference of the Parties (COP) to the CBD in 2000 and is ‘a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way’.⁹⁷ It is science-based, ‘focused on levels of biological organization, which encompass the essential structure, processes, functions and interactions among organisms and their environment’, and requires adaptive management for its application.⁹⁸ Within this approach, humans are an integral part of the ecosystem.⁹⁹

The CBD has developed the 12 Malawi principles and five points of operational guidance for the use of the ecosystem approach,¹⁰⁰ including:

- a) the need for management to be decentralised to the lowest appropriate level to guarantee amongst others a better participation, use of knowledge, responsibility, accountability, ownership and effectiveness;¹⁰¹
- b) the need to take into account the effects, both current and future, of activities on nearby ecosystems;¹⁰²

⁹³ LOSC art 237. Rules and regulations for the prevention and control of marine pollution have been codified in conventions such as the ones regulating shipping under the IMO or deep-seabed mining under the ISA. The FAO has adopted a series of legal instruments for the management of high seas fisheries and requests States to identify vulnerable marine ecosystems (VMEs) in need of protection. The IMO requests States to identify particularly sensitive sea areas (PSSAs). Under the CBD, States are required to identify ecologically or biologically significant areas (EBSAs).

⁹⁴ LOSC art 194.5 and 196.1.

⁹⁵ Wolfrum and Matz, above n 50, 451.

⁹⁶ United Nations General Assembly, *World Charter for Nature*, GA Res 37/7, 48th sess, A/RES/37/7 (28 October 1982) art 4.

⁹⁷ Convention on Biological Diversity, *Decisions Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Fifth Meeting*, UNEP/CBD/COP/5/23 Decision V/6, Conference of the Parties to the Convention on Biological Diversity, 5th meeting (22 June 2000) (‘*CBD Decision V/6*’) art A.1; Secretariat of the Convention on Biological Diversity, *The Ecosystem Approach* (2004) Convention on Biological Diversity <www.cbd.int/doc/publications/ea-text-en.pdf> (accessed: 9.12.2014) (‘*CBD Ecosystem Approach Guidelines*’) art 1. Russel and VanderZwaag highlight that the term ecosystem approach was used by the International Law Commission before the term *ecosystem* was enshrined in the 1992 CBD (Dawn A Russell and David L VanderZwaag, ‘Ecosystem and Precautionary Approaches to International Fisheries Governance: Beacons of Hope, Seas of Confusion and Illusion’ in Dawn A Russell and David L VanderZwaag (eds), *Recasting Transboundary Fisheries Management Arrangements in Light of Sustainability Principles: Canadian and International Perspectives* (Martinus Nijhoff, 2010) 25, 26-27).

⁹⁸ *CBD Decision V/6* art A.2 and A.4; *CBD Ecosystem Approach Guidelines* art 2 and art 4.

⁹⁹ *CBD Decision V/6* art A.2; *CBD Ecosystem Approach Guidelines* art 2.

¹⁰⁰ *CBD Decision V/6*. The 12 principles were developed at a Workshop on the Ecosystem Approach in Malawi in 1998. A list of the principles is available under: <http://www.cbd.int/ecosystem/principles.shtml> (accessed: 4 January 2015).

¹⁰¹ *CBD Ecosystem Approach Guidelines* principle 2.

¹⁰² *Ibid* principle 3.

- c) the need to conserve both the structure and functioning of ecosystems to maintain ecosystem services;¹⁰³
- d) the need to consider objective-adequate spatial and temporal scales;¹⁰⁴
- e) the need to consider a long-term perspective when establishing ecosystem management objectives to avoid short-term gains that could compromise long-term sustainability and to enable the integration of lessons learnt from past failures;¹⁰⁵
- f) the need to find a balance between the integration, conservation and use of biodiversity;¹⁰⁶ and
- g) the need to involve all relevant stakeholders.¹⁰⁷

With regard to fisheries, the 1995 UNFSA does not explicitly mention the term ecosystem approach but requests States to assess the impacts of activities and adopt conservation and management measures for same-ecosystem species as target fish stocks.¹⁰⁸ Following the request to apply the ecosystem approach to fisheries management in the 2001 *Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem* and at the 2002 World Summit on Sustainable Development (WSSD), the FAO published guidelines supplementing the *Code of Conduct on Responsible Fisheries* (Code of Conduct) on how to use the ecosystem approach to fisheries management in 2003.¹⁰⁹ In Annex 2 of these guidelines, the FAO developed 11 principles, which are more specific than the ones established by the CBD as they are specifically tailored to increase responsible fisheries management. These include: a) avoiding overfishing; b) minimising fisheries impact; c) considering species interactions; d) applying the precautionary approach; e) broadening stakeholders' participation; and f) maintaining ecosystem integrity.¹¹⁰

¹⁰³ Ibid principle 5.

¹⁰⁴ Ibid principle 7.

¹⁰⁵ Ibid principle 8; Russell and VanderZwaag, above n 97, 28.

¹⁰⁶ *CBD Ecosystem Approach Guidelines* principle 10.

¹⁰⁷ Ibid principle 12.

¹⁰⁸ UNFSA art 5d and art 5e.

¹⁰⁹ FAO, 'Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem' (Report of the Reykjavik Conference on Responsible Fisheries in the Marine Ecosystem FAO Fisheries Report No 658 Appendix I, FAO, 1-4 October 2001) ('*Reykjavik Declaration*') art 3 and art 5; *JPOI* para 30.d; FAO Fisheries Department. 'The Ecosystem Approach to Fisheries' (FAO Technical Guidelines for Responsible Fisheries No 4 Suppl 2, FAO, 2003) ('*FAO Guidelines for Responsible Fisheries*'). See: S M Garcia et al, 'The ecosystem approach to fisheries: Issues, terminology, principles, institutional foundations, implementation and outlook' (FAO Fisheries Technical Paper No 443, FAO, 2003).

¹¹⁰ *FAO Guidelines for Responsible Fisheries*, Annex 2.

The *Rio Declaration*, adopted at the 1992 United Nations Conference on Environment and Development, is important in terms of the new principles and standards it sets to expand the duty to protect the environment, including the marine environment. As pointed out by Birnie et al, it ‘constitutes at present the most significant universally endorsed statement of general rights and obligations of [S]tates affecting the environment’.¹¹¹ In particular, it introduces the precautionary approach which requires States to take action to protect the marine environment despite scientific uncertainty as to the specific harm caused by certain activities.¹¹²

Originally, the precautionary principle comes from German law, translated from the German term *Vorsorgeprinzip*. The terms precautionary approach and precautionary principle are both used, although most of the global environmental agreements refer to the precautionary approach.¹¹³ A 1994 information paper published by FAO states that both these terms ‘relate equally well to the concept of caution in management, [but are] differently perceived’.¹¹⁴ The term precautionary principle is viewed in a more negative and restrictive manner. For the precautionary principle,

*‘action is required even in the absence of certainty about the damage and without having to wait for full scientific proof of the cause-effect relationship. In addition, when there is disagreement on the need to take action, the burden of providing the proof is reversed and placed on those who contend that the activity has or will have no impact’.*¹¹⁵

The term precautionary approach is seen as implying ‘more flexibility, admitting the possibility of adapting technology, consistent with the requirement for sustainability’.¹¹⁶

The precautionary approach, as reflected in Principle 15 of the 1992 *Rio Declaration*, ‘is subtly different [than the precautionary principle] in that it reflects a softer

¹¹¹ Birnie et al, above n 57, 112.

¹¹² *Rio Declaration* principle 15: ‘In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation’. The precautionary approach has been broadly applied to international environmental conventions, for instance in the 1992 *United Nations Framework Convention on Climate Change*, the 1992 CBD, the 1995 UNFSA, the 1996 *London Protocol*, the 1992 *Helsinki Convention on the Protection and Use of Transboundary Watercourses and Lakes*, the 1992 *Paris Convention on the Protection of the Marine Environment of the North-East Atlantic*, the 1993 *Ministerial Declaration on the Protection of the Black Sea* or the 1992 *Helsinki Convention on the Protection of the Baltic Sea Area*.

¹¹³ Birnie et al, above n 57, 155.

¹¹⁴ United Nations General Assembly, *The Precautionary Approach to Fisheries with Reference to Straddling Fish Stocks and Highly Migratory Fish Stocks*, United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks, A/CONF.164/INF/8 (26 January 1994) para 21.

¹¹⁵ *Ibid* para 22.

¹¹⁶ *Ibid* para 21.

requirement, recognizing that there are differences in local “capabilities” to apply it and calling for “cost-effectiveness” ([that is] taking into account economic and social costs) (...).¹¹⁷

Birnie et al also highlight the fact that there is no distinction made between: a) the identification of the risk, that is should States, under scientific uncertainty, be more cautious about risk identification; and b) how to respond to this risk, that is should States, under scientific uncertainty, act with more caution by adopting relevant measures for risk mitigation. The latter sense is similar to Principle 2 on due diligence of the 1992 *Rio Declaration*.¹¹⁸

As highlighted by Freestone, the precautionary approach ‘changes the role of scientific data’ in that States need to take action even though scientific information may not be fully available or sufficiently advanced to deal with the problem at hand.¹¹⁹ However, as pointed out by Birnie et al, the prediction of possible harmful environmental effects still has to be based on ‘some scientific basis’.¹²⁰ If all uncertainties surrounding potential harmful effects of activities on the environment can be eliminated, then there is no need for the precautionary approach to be applied.¹²¹ However, there are no legal sanctions for States that fail to apply the precautionary approach.¹²² A precautionary approach was the basis for establishing the 1982 moratorium on commercial whaling, the 1992 UN ban on high seas large-scale pelagic driftnet fishing, and the 1996 ban on waste dumping at sea.¹²³ It has also been used in the case of fisheries, such as in the *Southern Bluefin Tuna Case*, in which the International Tribunal for the Law of the Sea (ITLOS)

¹¹⁷ Ibid para 29.

¹¹⁸ Birnie et al, above n 57, 155. See: Arie Trouwborst, *Evolution and Status of the Precautionary Principle in International Law* (Kluwer Law International, 2002); David Freestone and Ellen Hey, *The Precautionary Principle and International Law: the Challenge of Implementation* (Kluwer Law International, 1995).

¹¹⁹ David Freestone, ‘The Road from Rio: International Environmental Law After The Earth Summit’ (1994) 6(2) *Journal of Environmental Law* 193, 211.

¹²⁰ Birnie et al, above n 57, 156.

¹²¹ Ibid.

¹²² Ibid 164.

¹²³ 1946 International Convention for the Regulation of Whaling, *Notification of Amendments to the Schedule, as Amended by the Commission at the 64th Annual Meeting*, Panama City, Panama, July 2012 art 10.e: ‘Notwithstanding the other provisions of paragraph 10, catch limits for the killing for commercial purposes of whales from all stocks for the 1986 coastal and the 1985/86 pelagic seasons and thereafter shall be zero. This provision will be kept under review, based upon the best scientific advice, and by 1990 at the latest the Commission will undertake a comprehensive assessment of the effects of this decision on whale stocks and consider modification of this provision and the establishment of other catch limits.’

United Nations General Assembly, *Resolution Adopted by the General Assembly*, GA Res 46/215, 79th sess, A/Res/46/215 (20 December 1991) para 3.c: ‘Ensure that a global moratorium on all large-scale pelagic drift-net fishing is fully implemented on the high seas of the world’s oceans and seas, including enclosed seas and semi-enclosed seas, by 31 December 1992’.

Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, opened for signature 7 November 1996, 36 ILM 1 (entered into force 24 March 2006) amended in 2006 art 4: ‘Contracting Parties shall prohibit the dumping of any wastes or other matter with the exception of those listed in Annex 1’.

ruled on the adoption of protective measures because of scientific uncertainty and the necessity to act cautiously to prevent any further deterioration of the southern bluefin tuna stock.¹²⁴ It was also used by the South Pacific Regional Fisheries Management Organisation (SPRFMO) with its adoption of interim protection measures for Chilean jack mackerel in terms of catch and effort management and a ban on deep water gillnets until conservation measures are adopted by SPRFMO.¹²⁵

In contrast to the LOSC, the UNFSA requires a wide application of the precautionary approach to conservation, management and exploitation measures for highly migratory and straddling fish stocks to ensure the protection of marine living resources and the preservation of the marine environment.¹²⁶ This precautionary approach is to be used when information is uncertain, unreliable or inadequate. States are not to use the absence of adequate scientific information as a reason to postpone or fail to undertake conservation and management measures for highly migratory and straddling fish stocks.¹²⁷ This is also reiterated in the CBD with regard to biodiversity.¹²⁸ However, the application of the precautionary approach for sustainable fisheries has proved to be particularly difficult due to the ‘recurring tendency of RFMOs to ignore best scientific evidence available and allocate catch quotas on the basis of politics’.¹²⁹

States have an obligation under the LOSC to assess the potential effects of planned activities to be carried out under their control both within and beyond their national jurisdiction.¹³⁰ Environmental impact assessments (EIAs) are ‘a procedure for evaluating the likely impact of a proposed activity on the environment’.¹³¹ They are

¹²⁴ *Southern Bluefin Tuna Cases (New Zealand v Japan; Australia v Japan)* (Provisional Measures) [1999] ITLOS No 3-4 para 77: ‘Considering that, in the view of the Tribunal, the parties should in the circumstances act with prudence and caution to ensure that effective conservation measures are taken to prevent serious harm to the stock of southern bluefin tuna’; and para 80: ‘Considering that, although the Tribunal cannot conclusively assess the scientific evidence presented by the parties, it finds that measures should be taken as a matter of urgency to preserve the rights of the parties and to avert further deterioration of the southern bluefin tuna stock’. See: Simon Marr, ‘The Southern Bluefin Tuna Cases: The Precautionary Approach and Conservation and Management of Fish Resources’ (2000) 11(4) *European Journal of International Law* 815.

¹²⁵ *Final Act of the International Consultations on the Establishment of the Proposed South Pacific Regional Fisheries Management Organisation* (2009) annex II and annex III.

¹²⁶ UNFSA art 6.1.

¹²⁷ *Ibid* art 6.2.

¹²⁸ CBD preamble: ‘Noting also that where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat’.

¹²⁹ Rosemary Rayfuse, ‘Precaution and the Protection of Marine Biodiversity in Areas Beyond National Jurisdiction’ (2012) 27 *The International Journal of Marine and Coastal Law* 773, 776.

¹³⁰ LOSC art 206. See: Neil Craik, *The International Law of Environmental Impact Assessment: Process, Substance and Integration* (Cambridge University Press, 2008).

¹³¹ Birnie et al, above n 57, 164. EIA is defined in the 1987 UNEP Goals and Principles of EIA as: ‘An examination, analysis and assessment of planned activities with a view to ensuring environmentally sound and sustainable development’ and, more detailed, as ‘a process for the assessment of the nature, magnitude and persistence of the effects on the environment which might be caused by the proposal of the applicant, including a programme of subsequent monitoring of these effects and a mechanism for reassessment

used by States to inform decision-making and can also be used to fulfil States' obligations under the precautionary approach outlined in the 1992 *Rio Declaration*.¹³² The assessment of potential impacts on the environment from human activities pre-dates the adoption of the precautionary approach. It is mentioned in both the 1982 LOSC and 1982 *World Charter for Nature* and was first adopted in the 1969 United States (US) *National Environmental Policy Act* (NEPA).¹³³ However, this assessment obligation, as outlined in the LOSC is quite lax as the assessment only needs to be done when 'substantial pollution of or significant and harmful changes to the marine environment' can be expected.¹³⁴

In its commentary, the International Law Commission defines the term 'significant' as 'something more than "detectable" but need not be at the level of "serious" or "substantial"'.¹³⁵ Further, '[t]he harm must lead to a real detrimental effect on matters such as, for example, human health, industry, property, environment or agriculture in other States. Such detrimental effects must be susceptible of being measured by factual and objective standards'.¹³⁶ 'The term "significant", while determined by factual and objective criteria, also involves a value determination which depends on the circumstances of a particular case and the period in which such determination is made'.¹³⁷ What these assessments entail is not detailed in the LOSC. There is no mandatory obligation on States to undertake such an assessment for each activity. Rather, an assessment is undertaken when the activity is expected to have a significant impact on the marine environment. The provision also requires assessments to be done 'as far as practicable' meaning States that do not have the capacity to undertake assessments do not necessarily have to respect this obligation.¹³⁸

of conditions under which the issued authorization may have to be modified' (Source: <http://www.unep.org/regionalseas/publications/reports/rsrs/pdfs/rsrs122.pdf>, p. 8, accessed: 22 December 2014).

¹³² Birnie et al, above n 57, 165.

¹³³ *US National Environmental Policy Act of 1969*, Pub L No 91-190 § 102 C (1969); *LOSC* art 206. The 1982 *World Charter for Nature* also states that 'activities which might have an impact on nature shall be controlled, and the best available technologies that minimize significant risks to nature or other adverse effects shall be used; in particular: a) activities which are likely to cause irreversible damage to nature shall be avoided; b) activities which are likely to pose a significant risk to nature shall be preceded by an exhaustive examination; their proponents shall demonstrate that expected benefits outweigh potential damage to nature, and where potential adverse effects are not fully understood, the activities should not proceed; c) activities which may disturb nature shall be preceded by assessment of their consequences, and environmental impact studies of development projects shall be conducted sufficiently in advance, and if they are to be undertaken, such activities shall be planned and carried out so as to minimize potential adverse effects' (*World Charter for Nature* art 11 a-c).

¹³⁴ *LOSC* art 206.

¹³⁵ United Nations General Assembly, Commentaries to *Draft Articles of Transboundary Harm from Hazardous Activities*, in *Report of the International Law Commission*, UN GAOR, 53rd sess, Supp No 10, UN Doc A/56/10 (23 April-1 June and 2 July-10 August 2001), 388, para 4.

¹³⁶ *Ibid.*

¹³⁷ *Ibid* 389, para 7.

¹³⁸ *LOSC* art 206.

Since the 1982 LOSC, several other hard and soft law instruments have integrated EIAs within their conventions. In 1987, UNEP adopted the non-legally binding Goals and Principles of EIA.¹³⁹ These were formulated to support developing countries in the preparation of EIAs as part of the regional agreements on marine environmental protection within UNEP's RSP. The 1991 *Convention on Environmental Impact Assessment in a Transboundary Context*, or Espoo Convention, is, to date, the 'most comprehensive agreement' on activity assessment and environmental impacts.¹⁴⁰ This convention outlines the duties of States to prevent significant adverse transboundary impacts.¹⁴¹ These include taking 'appropriate and effective measures to prevent, reduce and control significant adverse transboundary environmental impact from proposed activities' and undertaking EIAs in the early activity planning stages.¹⁴²

Building on this convention, the 2003 *Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context*, known as the Kiev Protocol, introduces States' obligations in terms of performing strategic environmental assessments (SEAs).¹⁴³ It is through these assessments that assessment methodology is applied to policies, plans and programmes.¹⁴⁴ Although a soft law provision, Principle 17 of the 1992 *Rio Declaration* shows strong and global support by the international community for the application of EIAs.¹⁴⁵ The 2002 JPOI also promotes the use of EIAs for activities that can be potentially harmful to coastal and marine environments and their resources.¹⁴⁶

¹³⁹ United Nations Environment Programme, *Resolution 14/25 on Environmental Impact Assessment*, UNEP Governing Council, 14th mtg (17 June 1987). See report containing the three goals and 13 principles under: <http://www.unep.org/regionalseas/publications/reports/rsrs/pdfs/rsrs122.pdf> (accessed: 22 December 2014).

¹⁴⁰ *Convention on Environmental Impact Assessment in a Transboundary Context*, opened for signature 25 February 1991, 30 ILM 802 (entered into force 10 September 1997) ('*Espoo Convention*'); Birnie et al, above n 57, 168.

¹⁴¹ The 1991 *Espoo Convention* defines a transboundary impact as: 'any impact, not exclusively of a global nature, within an area under the jurisdiction of a Party caused by a proposed activity the physical origin of which is situated wholly or in part within the area under the jurisdiction of another Party' (art 1.viii). An impact is: 'any effect caused by a proposed activity on the environment including human health and safety, flora, fauna, soil, air, water, climate, landscape and historical monuments or other physical structures or the interaction among these factors; it also includes effects on cultural heritage or socio-economic conditions resulting from alterations to those factors' (art 1.vii).

¹⁴² *Espoo Convention* art 2.1 and art 2.3. It defines EIA as a: 'national procedure for evaluating the likely impact of a proposed activity on the environment' (art 1.vi).

¹⁴³ *Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context*, opened for signature 21 May 2003, UNTS 2685 (entered into force 11 July 2010) ('*Kiev Protocol*'). It defines a SEA as: 'the evaluation of the likely environmental, including health, effects, which comprises the determination of the scope of an environmental report and its preparation, the carrying out of public participation and consultations, and the taking into account of the environmental report and the results of the public participation and consultations in a plan or programme' (art 2.6).

¹⁴⁴ Craik, above n 130.

¹⁴⁵ Birnie et al, above n 57, 166; *Rio Declaration* principle 17: 'Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority'.

¹⁴⁶ JPOI para 36.c: 'Build capacity in marine science, information and management, through, inter alia, promoting the use of environmental impact assessments and environmental evaluation and reporting techniques, for projects or activities that are potentially harmful to the coastal and marine environments and their living and non-living resources'.

With regard to biodiversity, Article 14 of the 1992 CBD requests States, ‘as far as possible and as appropriate’, to ‘introduce appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects’.¹⁴⁷ It also requests States to promote and encourage information exchange on activities that are likely to impact on ABNJ, notably by adopting multilateral arrangements.¹⁴⁸ Finally, the International Law Commission’s 2001 ‘Draft Articles on Prevention of Transboundary Harm from Hazardous Activities’ also include risk assessment in case of transboundary harm.¹⁴⁹ Less global and more species-specific, the 1979 *Convention on the Conservation of Migratory Species of Wild Animals* (CMS) and the 2006 *Agreement on the Conservation of Albatrosses and Petrels* (ACAP) both include the obligation for States to conduct both EIAs and SEAs with regard to impacts on migratory species, albatrosses and petrels.¹⁵⁰

The law on the EIA of activities affecting the marine environment has developed considerably since the adoption of the LOSC. At the regional level this has been done particularly through the regional seas organisations (RSOs) and their corresponding conventions and protocols and for sectors such as deep-sea fishing, dumping at sea, ocean fertilisation and deep-seabed mining.¹⁵¹ However, despite this progress in various sectors, no comprehensive global guidelines or a legally binding global instrument on

¹⁴⁷ CBD art 14.a.

¹⁴⁸ Ibid art 14.c.

¹⁴⁹ International Law Commission, ‘Draft Articles on Prevention of Transboundary Harm from Hazardous Activities with Commentaries’ (2001) Vol II Part 2 *Yearbook of the International Law Commission* art 7: ‘Any decision in respect of the authorization of an activity within the scope of the present articles shall, in particular, be based on an assessment of the possible transboundary harm caused by that activity, including any environmental impact assessment’.

¹⁵⁰ Convention on the Conservation of Migratory Species of Wild Animals, *Resolution 7.2: Impact Assessment and Migratory Species*, Proceedings of the Seventh Meeting of the Conference of the Parties, Conference of the Parties to the Convention on the Conservation of Migratory Species of Wild Animals, 7th meeting, (18 to 24 September 2002); *Agreement on the Conservation of Albatrosses and Petrels*, opened for signature 19 June 2001, ATS 5 (entered into force 1 February 2004) (‘ACAP’) annex 3.

¹⁵¹ This falls under the responsibility of States members of such organisations and there is to date limited implementation of LOSC obligations under these agreements. See: Robin Warner, ‘Tools to Conserve Ocean Biodiversity: Developing the Legal Framework for Environmental Impact Assessment in Marine Areas Beyond National Jurisdiction’ (2012) 26 *Ocean Yearbook* 317). For the Southeast Pacific, see: *Protocolo para la Conservación y Administración de las Áreas Marinas y Costeras Protegidas del Pacífico Sudeste* [Protocol for the Conservation and Management of Protected Marine and Coastal Areas of the Southeast Pacific], opened for signature 21 September 1989 (entered into force 24 January 1995) art 8.

2009 International Guidelines for the Management of Deep-Sea Fisheries in the High Seas (‘Deep-Sea Fisheries Guidelines’) (<http://www.fao.org/docrep/011/i0816t/i0816t00.HTM>, accessed: 22 December 2014), which aim to prevent significant adverse impacts to VMEs and to prohibit bottom fishing activities. See: United Nations General Assembly, ‘Resolution adopted by the General Assembly on 8 December 2006’, A/RES/61/105, 61st sess, Item 71 (b) (6 March 2007) para 80-91; *London Convention* art IV and annex III; *London Protocol* art 4 and annex 2 with regard to the dumping at sea of substances that are not prohibited by the Convention; Convention on Biological Diversity, *Decisions Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Ninth Meeting*, UNEP/CBD/COP/DEC/IX/16, Conference of the Parties to the Convention on Biological Diversity, 9th meeting, (9 October 2008) section C; United Nations General Assembly, *Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982*, GA Res 48/263, 48th sess, Agenda Item 36, A/RES/48/263 (17 August 1994) annex para 7. See, eg: Robin Warner, ‘Oceans Beyond Boundaries: Environmental Assessment Frameworks’ (2012) 27 *The International Journal of Marine and Coastal Law* 481; Alex G Oude Elferink, ‘Environmental Impact Assessment in Areas Beyond National Jurisdiction’ (2012) 27 *The International Journal of Marine and Coastal Law* 449.

the use of EIAs exist. In addition, there is no institutional framework in place for the assessment of possible activity impacts on the marine environment for ABNJ.¹⁵² The obligation to conduct EIAs for activities that can potentially have a significant impact on the marine environment within and beyond national jurisdiction is part of customary international law.¹⁵³

Conducting EIAs prior to the undertaking of activities on the high seas has been discussed at the global level under the BBNJ Working Group and under the umbrella of the CBD. So far the CBD voluntary guidelines relevant to marine and coastal areas, which are broader than just for ABNJ, have only been noted by States.¹⁵⁴ There is an ongoing process under the BBNJ Working Group to include EIAs and SEAs in a possible implementing agreement to the LOSC as these have been recognised as important tools in the conservation and sustainable use of biodiversity in ABNJ.¹⁵⁵

3.3.2.3 Conservation of Living Resources on the High Seas

Apart from the strong yet general obligation for States to protect the marine environment contained in the LOSC and customary international law, most of the relevant provisions for addressing the conservation of marine biodiversity in ABNJ derive from the international legal framework for fisheries. This framework deals with the conservation and management of highly migratory and straddling fish stocks and includes both binding and soft law agreements.

¹⁵² Warner, above n 151, 482.

¹⁵³ See: *Request for an Examination of the Situation in Accordance with Paragraph 63 of the Court's Judgment of 20 December 1974 in the Nuclear Tests (New Zealand v France) Case* [1995] ICJ Rep 288; *Gabčíkovo-Nagymaros Dam Case* (Hungary v Slovakia) [1997] ICJ Rep 7; *MOX Plant Case (Ireland v United Kingdom)* (Provisional Measures) [2001] ITLOS No 10; *Case concerning Land Reclamation by Singapore in and around the Straits of Johor* (Malaysia v Singapore) (Provisional Measures) [2003] ITLOS No 12; *Pulp Mills on the River Uruguay (Argentina v Uruguay)* (Provisional Measures) [2006] ICJ Rep 135; *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area* (Request for Advisory Opinion submitted to the Seabed Disputes Chamber) [2011] ITLOS No 17; Warner, above n 151, 481; Birnie et al, above n 57, 169-170.

¹⁵⁴ Convention on Biological Diversity, *Decisions Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Eleventh Meeting*, UNEP/CBD/COP/11/35, Conference of the Parties to the Convention on Biological Diversity, 11th meeting, (5 December 2012), 209 para 1). In contrast to CBD's art 14, these guidelines apply both to marine areas within and beyond national jurisdiction but have the main emphasis on terrestrial and coastal environments. See Guidelines: <http://www.cbd.int/decision/cop/default.shtml?id=11042> (accessed: 21 December 2014). These Guidelines were developed at the 2009 Expert Workshop on Scientific and Technical Elements of CBD Voluntary Biodiversity-Inclusive EIA Guidelines for Marine Areas beyond National Jurisdiction that took place in Manila, Philippines.

¹⁵⁵ See: Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 16 March 2010 from the Co-Chairpersons of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/65/68, United Nations General Assembly, 65th sess, Item 75(a) of the preliminary list (17 March 2010) ('2010 BBNJ Report') para 14 and para 51; Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 30 June 2011 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/66/119, United Nations General Assembly, 66th sess, Item 77(a) of the preliminary list (30 June 2011) ('2011 BBNJ Report') para 30; Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 8 June 2012 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/67/95, United Nations General Assembly, 67th sess, Item 76(a) of the preliminary list (13 June 2012) ('2012 BBNJ Report') para 24; Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 25 July 2014 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/69/177, United Nations General Assembly, 69th sess, Item 75(a) of the preliminary list (23 July 2014) ('2014b BBNJ Report') para 65.

Building on the provisions of the 1958 *Convention on Fishing and Conservation of the Living Resources of the High Seas*, the LOSC requires States, when fishing on the high seas, take measures, individually or by cooperating with other States, for the conservation of high seas living resources.¹⁵⁶ Particularly, States have to take measures, based on best available scientific data, for the conservation of harvested living resources and their dependent or associated species as well as the conservation of straddling stocks and highly migratory species.¹⁵⁷ In his separate concurring opinion in the 1974 *Fisheries Jurisdiction Case*, Judge Dillard noted that the obligation to conserve high seas living resources ‘may qualify as a norm of customary international law’, which would mean that a failure to conserve them is a violation of customary international law.¹⁵⁸ Apart from determining a total allowable catch for targeted stocks and the need to maintain these stocks at levels capable of producing maximum sustainable yield (MSY), the measures to be adopted and applied for the conservation of these living resources are not specified in the LOSC.¹⁵⁹ States have to adopt and implement conservation and management measures on their own initiative or give effect to their duty to cooperate in this regard.

Complementing the LOSC, the 1995 UNFSA provides more stringent legal provisions for the conservation and management of straddling and highly migratory fish stocks and integrates modern and innovative conservation principles as outlined in its Article 5.¹⁶⁰ Not only do States Parties have to maintain these stocks at levels capable of producing MSY, they also have to adopt measures to ensure their long-term sustainability and the maintenance of populations of associated or dependent species, based on the best

¹⁵⁶ *Convention on Fishing and Conservation of the Living Resources of the High Seas*, opened for signature on 29 April 1958, ATS 12 (entered into force 20 March 1966) (*‘Convention on HS Fishing and Conservation’*); LOSC art 117. Fishing is one of the ‘freedoms’ explicitly mentioned in LOSC art 87. It was mentioned in 1958 *High Seas Convention* art 2.

¹⁵⁷ LOSC art 63.2, art 64, art 119.1b and art 119.2. The LOSC does not provide a definition of ‘living resources’ nor a clear indication as to which marine living resources should be conserved and managed. However, art 117 and art 118 emphasise the general duty of States to conserve high seas living resources with the explicit obligation in art 119 to adopt measures, including an allowable catch, for harvested species, taking into account dependent and associated species. It lists highly migratory species recognised under the Convention in Annex I. This list includes fish species as well as some oceanic sharks and cetaceans but is incomplete as it fails to list other existing highly migratory species, such as marine turtles. Straddling stocks occur both within the EEZ and in an area beyond and adjacent to this zone.

¹⁵⁸ *Fisheries Jurisdiction Case (United Kingdom of Great Britain and Northern Ireland v Iceland)* (Merits, Judgment) [1974] ICJ Rep 3, 6 (Judge Dillard): ‘Although Iceland was not a party to this Convention it is yet possible to surmise that, in light of the practice of States and the widespread and insistent recognition of the need for conservation measures that the principle it announces may qualify as a norm of customary international law’. He was referring to art 1.2 of the *Convention on HS Fishing and Conservation*, which is the same provision as LOSC art 117.

¹⁵⁹ LOSC art 119.1.

¹⁶⁰ Wolfrum and Matz, above n 50; LOSC art 1.c. This includes molluscs and crustaceans that are not sedentary. Sedentary species are defined in art 77 as: ‘organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil’. The UNFSA does not provide a definition of straddling and highly migratory fish stocks.

scientific evidence available.¹⁶¹ This includes the adoption of measures for the prevention and elimination of overfishing and for the minimisation of pollution, waste and discards.¹⁶² Furthermore, the UNFSA explicitly requests States to address the protection of marine biodiversity and to apply the precautionary approach promoted in the 1992 *Rio Declaration* and the 1992 Chapter 17 of *Agenda 21* to the conservation and management of these fish stocks.¹⁶³

This is further advocated by the complementary but voluntary 1995 *Code of Conduct* which sets out principles and standards for the management and conservation of fisheries both within and beyond the national jurisdiction of States.¹⁶⁴ What is meant by protecting marine biodiversity in the UNFSA is not defined and measures to conserve biodiversity are not outlined. However, it shows progress from the 1982 LOSC MSY and optimum utilisation approach towards an ecosystem approach. As with the LOSC, it is up to the States to decide which conservation measures are to be applied in the UNFSA and *Code of Conduct*. States have to give effect to their duty to cooperate, taking into account the status of the fisheries, their compatibility with other measures already in place, States' and fishermen's interests and situation and the condition of the living resources to be conserved.¹⁶⁵ A number of other soft law instruments also provide the basis for the conservation and management of fisheries and are, therefore, relevant for the conservation of marine biodiversity in ABNJ.¹⁶⁶

Similarly, the CMS requires State Parties to adopt specific conservation measures for endangered highly migratory species taking into account their habitat and range and to cooperate to adopt agreements for the protection of threatened migratory species.¹⁶⁷ The CMS provides a list of terrestrial and marine migratory species for which States have to adopt conservation and management measures. The 1973 *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES) regulates wildlife trade through the obligation of States to adopt and implement measures prohibiting or

¹⁶¹ UNFSA art 5a and art 5b.

¹⁶² Ibid art 5f and 5h.

¹⁶³ Ibid art 5c and art 5g; *Rio Declaration* principle 15; *Agenda 21*, Chapter 17 para 17.1. See Section 3.3.2.2 of this chapter for an explanation on the use of precautionary approach and precautionary principle.

¹⁶⁴ *Code of Conduct* art 6.5 and art 7.1.1. It underscores the right of States to fish but in a responsible manner (art 6.1).

¹⁶⁵ UNFSA art 5b, art 5i and art 7.

¹⁶⁶ 1999 *IPOA-Capacity*; 2001 *Reykjavik Declaration*; 2001 *IPOA-IUU*; *Deep-Sea Fisheries Guidelines* (<http://www.fao.org/docrep/011/i0816t/i0816t00.HTM>, accessed: 22 December 2014).

¹⁶⁷ *Convention on the Conservation of Migratory Species of Wild Animals*, opened for signature on 23 June 1979, ATS 32 (entered into force 11 January 1983) ('CMS'). List of highly migratory species in need of protection is included in its Appendix I (endangered species) and Appendix II (threatened species).

limiting the import and export of species listed in its three appendices.¹⁶⁸ Although not regulating the conservation of high seas living resources *in-situ*, CITES provides a way to discourage or limit the harvesting of these resources by encouraging the use of trade sanctions. Other hard and soft law instruments have specifically been adopted for the conservation and management of particular species, such as sharks, sea turtles, seabirds, and whales.¹⁶⁹

The CBD is the only treaty which provides legally binding guidelines and recommendations on the conservation and sustainable use of terrestrial and marine biodiversity.¹⁷⁰ It is also the first convention to focus entirely on biodiversity rather than harvestable species. The overarching principle under this convention is the no-harm principle of international law, upon which the duty to protect the marine environment is based.¹⁷¹ Building on this principle, the CBD requests States Parties adopt conservation measures to prevent and minimise harm and impacts on biodiversity by applying the ecosystem approach, as well as, implement these measures into their national and sectoral policies.¹⁷²

Specifically, the CBD provides a list of *in-situ* conservation measures that States must apply ‘as far as possible and as appropriate’, including the establishment of a system of protected areas, the management of biological resources both within and outside these protected areas, the protection of ecosystems and habitats, the restoration of degraded ecosystems, the development of regulatory provisions for the protection of threatened species, and the regulation of harmful activities.¹⁷³ Apart from the requirement to establish protected areas and consistent with the framework nature of other international environmental agreements, the CBD does not specify which conservation measures

¹⁶⁸ *Convention on International Trade in Endangered Species of Wild Fauna and Flora*, opened for signature 3 March 1973, ATS 29 (entered into force 1 July 1995) (‘CITES’). The CITES moved away from seeing species as harvested species and defined them in its preamble as being ‘an irreplaceable part of the natural systems of the earth (...)’ that are valued from ‘aesthetic, scientific, cultural, recreational and economic points of view’ and the need to protect them ‘for generations to come’.

¹⁶⁹ *Whaling Convention*; 1999 *IPOA-Sharks*; *Inter-American Convention for the Protection and Conservation of Sea Turtles*, opened for signature 1 December 1996, UNTS I-37791 (entered into force 2 May 2001); 1999 *IPOA-Seabirds*; 2001 *ACAP*.

¹⁷⁰ The recognition that biological resources, important for sustaining life on Earth, were threatened by extinction or degradation by human activities led in 1988 to the creation of the Ad Hoc Working Group of Experts on Biological Diversity by UNEP to review and assess the need for an international convention on biodiversity. With the need to establish such a convention, an Ad Hoc Working Group of Technical and Legal Experts was created in 1989 to prepare an international legal instrument for the conservation and sustainable use of biodiversity that was then adopted in 1992 as the CBD at the United Nations Conference on Environment and Development.

¹⁷¹ *CBD* art 3. See discussion on the *sic utere* principle in Section 3.3.1 of this chapter.

¹⁷² *CBD* art 6 and art 10.

¹⁷³ *Ibid* art 8. Art 2 defines protected areas as ‘geographically defined area[s] which [are] designated or regulated and managed to achieve specific conservation objectives’. It is to be noted that there is no mention of exclusively no-take areas. Rather, protected areas under this definition have to be designed according to the end objectives to be met.

should be adopted and implemented. Again, this is to be decided by individual States or a group of States exercising their duty to cooperate.¹⁷⁴ In 2004, the CBD adopted the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity. This is a list of 14 principles, which have been designed to prevent the long-term decline of biodiversity and reduce biodiversity loss through its sustainable use.¹⁷⁵

The CBD provides weak obligations for States to conserve and sustainably use biodiversity as the majority of its provisions are to be applied ‘as far as possible and as appropriate’. This gives many of its provisions the character of non-legally binding articles. The CBD provisions have been criticised as ‘leav[ing] considerable room for interpretation’ and being ‘fraught with loopholes’.¹⁷⁶ Furthermore, the CBD only has the mandate to address processes and activities in ABNJ rather than the components of biodiversity.¹⁷⁷ It has no mandate to impose legally binding obligations on States in relation to the conservation of the components of marine biodiversity in ABNJ. It can only request States Parties avoid damage to ABNJ when carrying out activities within their jurisdiction or control under the general no-harm principle of international law.¹⁷⁸ It also requests States Parties cooperate between them, optionally with the help of competent international organisations, to conserve and sustainably use biodiversity in ABNJ.¹⁷⁹ Therefore, the CBD only provides a very weak framework for the conservation of marine biodiversity in ABNJ.

Other CBD provisions applicable to marine biodiversity in ABNJ include the duty of States to identify and monitor processes and activities that are likely to have significant adverse impacts on high seas biodiversity as well as carrying out EIAs, research and training.¹⁸⁰ As far as ABNJ are concerned, the provisions under the CBD are to be interpreted as guidelines that can be voluntarily applied by States, or a group of States,

¹⁷⁴ Alf Hakon Hoel, ‘Marine Biodiversity and Institutional Interplay’ (2003) 30 *Coastal Management* 25.

¹⁷⁵ Convention on Biological Diversity, *Decisions Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Seventh Meeting*, UNEP/CBD/COP/DEC/VII/12, Conference of the Parties to the Convention on Biological Diversity, 7th meeting, Agenda Item 19.5 (13 April 2004) para 1. See: www.cbd.int/doc/publications/addis-gdl-en.pdf (accessed: 19 December 2014).

¹⁷⁶ Wolfrum and Matz, above n 50, 474; Elisa Morgera and Elsa Tsioumani, ‘Yesterday, Today, and Tomorrow: Looking Afresh at the Convention on Biological Diversity’ (Working Paper Series No 2011/21, University of Edinburgh School of Law, 2011). See also for instance the following papers for further critics on the CBD: Raustiala and Victor, cited in Hoel, above n 174, 19; Guruswamy, cited in Aðalheiður Jóhannsdóttir, Ian Cresswell and Peter Bridgewater, ‘The Current Framework for International Governance of Biodiversity: Is It Doing More Harm Than Good?’ (2010) 19(2) *Reciel* 139, 142.

¹⁷⁷ CBD art 4.

¹⁷⁸ Ibid art 3.

¹⁷⁹ Ibid art 5.

¹⁸⁰ Juan Manuel Gómez-Robledo and Philip D. Burgess, *Report of the Ad Hoc Open-ended Informal Working Group to Study Issues Relating to the Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction*, A/61/65, United Nations General Assembly, 61st sess, Item 69(a) of the preliminary list (20 March 2006) (‘2006 BBNJ Report’) para 23.

at the regional level. Nevertheless, the CBD provides a forum for discussions on biodiversity conservation in ABNJ under its COP. It is within this forum that voluntary guidelines for biodiversity-inclusive EIAs and scientific criteria for the identification of ecologically or biologically significant areas (EBSAs) have been adopted.¹⁸¹

The provisions in these hard law agreements are strengthened and standards developed at international diplomatic conferences and through the development of soft law provisions and targets. The main fora for discussions addressing marine biodiversity in ABNJ include the FAO and its Committee on Fisheries (COFI), the CBD COP, the UNEP, the Global Environment Facility (GEF) and the BBNJ Working Group. RFOs as well as RSOs also provide important fora for discussions on high seas biodiversity.¹⁸² Furthermore, resolutions adopted by the UN ‘tend to embody policies of developing customary international law, and they may function as sources of customary international law and treaty law’.¹⁸³

Under the LOSC, the UNFSA and the *Code of Conduct*, States are requested to cooperate to establish RFOs that will serve as fora for the establishment, implementation and regulation of conservation measures.¹⁸⁴ These conventions hence entrust the responsibility of conserving high seas living resources to RFOs representing a regional coalition of States rather than to individual States.

¹⁸¹ Convention on Biological Diversity, *Decisions Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Eighth Meeting*, UNEP/CBD/COP/DEC/VIII/28, Conference of the Parties to the Convention on Biological Diversity, 8th meeting, Agenda Item 27.4 (15 June 2006) para 3; Convention on Biological Diversity, *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Ninth Meeting*, UNEP/CBD/COP/DEC/IX/20, Conference of the Parties to the Convention on Biological Diversity, 9th meeting, Agenda Item 4.9 (9 October 2008) para 14. Together with the scientific criteria, the CBD adopted in this decision the scientific guidance for designing representative networks of MPAs. See Chapter 2 for more detail.

¹⁸² There are a total of 28 RFOs with high seas competency, amongst others the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). Section 4.2.2 of Chapter 4 provides a background on RFMOs. 13 RSOs have been established under the UNEP RSP and focus mainly on marine areas within national jurisdiction. Five independently established programmes form also part of the RSP network, some of which have jurisdiction extending to the high seas. This includes the North East Atlantic RSO run by the Commission for the Protection of the Marine Environment of the North-East Atlantic (OSPAR). See Section 4.2.1 of Chapter 4 for a background on RSOs.

¹⁸³ Floit, above n 19, 314.

¹⁸⁴ *LOSC* art 118: ‘[States] shall, as appropriate, cooperate to establish subregional or [RFOs] (...)’; art 63.2: ‘the coastal State and the States fishing for such stocks in the adjacent area shall seek, either directly or through appropriate subregional or regional organizations, to agree upon the measures necessary for the conservation of these stocks in the adjacent area’; art 64: ‘the coastal State and other States whose nationals harvest these species in the region shall cooperate to establish such an organization and participate in its work’.

UNFSA art 8.5: ‘Where there is no subregional or [RFMO] or arrangement to establish conservation and management measures for a particular straddling fish stock or highly migratory fish stock, relevant coastal States and States fishing on the high seas for such stock in the subregion or region shall cooperate to establish such an organization or enter into other appropriate arrangements to ensure conservation and management of such stock and shall participate in the work of the organization or arrangement’.

Code of Conduct art 7.1.3: ‘This should be achieved, where appropriate, through the establishment of a bilateral, subregional or [RFO] or arrangement’.

The role of these regional organisations was considerably strengthened through the adoption of the UNFSA. It entrusts them with a mandate to manage their living resources within their Convention Area and empowers them to impose more stringent obligations on States for the conservation and management of straddling and highly migratory fish stocks.¹⁸⁵ It explicitly gives them the mandate to grant or restrict access to fisheries within their jurisdiction to non-members, to establish and control members' catch limit, as well as to set and allocate quotas and impose fishing prohibitions on States Parties.¹⁸⁶ Non-members, although not directly involved in the RFMOs, have nevertheless the obligation to cooperate in the conservation and management of these stocks.¹⁸⁷ These obligations clearly define and limit States' freedom of fishing on the high seas. They also challenge the perception that all States have access to the fisheries resources of the high seas and cannot be excluded from exercising this right of exploitation. It further limits the perception that high seas living resources, particularly fish stocks, are open access resources.

The UNFSA puts more pressure on States to become members of RFMOs as they would otherwise not have access to the fish resources under the jurisdiction of the organisation. However, this is only applicable to States that have ratified the UNFSA as States have the duty to comply in good faith only with the legal provisions to which they have consented to be bound.¹⁸⁸ States that have not done so, referred to as third States, can still have access to these fisheries under the freedom of the high seas prescribed in the LOSC but should not undermine the work undertaken by the regional organisations.¹⁸⁹ The extent of RFMO control over high seas living resources is therefore limited, leaving these resources at risk of high subtractability.¹⁹⁰

¹⁸⁵ The UNFSA takes measures to prevent overfishing and other destructive methods, to protect biodiversity and to minimise pollution, wastes and discards resulting from such an activity.

¹⁸⁶ Under the UNFSA, only members of these RFOs are entitled to access the fishery resources under the organisation's management (art 8.4). Non-members do not have access (art 17.2) and non-parties have access as the freedom of fishing applies and they cannot be bound by a treaty to which they have not agreed to be bound. See Section 4.2.2 of Chapter 4.

¹⁸⁷ Ibid art 17.1.

¹⁸⁸ Vienna Convention art 34.

¹⁸⁹ Code of Conduct art 7.1.5: 'A State which is not a member of a subregional or [RFMO] or is not a participant in a subregional or [RFMO] should nevertheless cooperate, in accordance with relevant international agreements and international law, in the conservation and management of the relevant fisheries resources by giving effect to any conservation and management measures adopted by such organization or arrangement'.

¹⁹⁰ See Section 4.2.2 in Chapter 4 for more details on RFMOs.

3.3.2.4 Duty to Cooperate

Underlying all treaty obligations relating to the protection of the marine environment and the conservation of its living resources is the customary obligation for States to cooperate.¹⁹¹ It is one of the basic principles of international law that is enshrined in the Charter of the UN.¹⁹² Several non-binding texts have reiterated this principle of law, including the 1972 *Stockholm Declaration*, the 1992 *Rio Declaration* and the 1992 *Agenda 21* in Chapter 17.¹⁹³ States have a customary international obligation to cooperate in the conservation and management of high seas living resources and to establish conservation measures.¹⁹⁴ Cooperation between States as well as between institutions at various societal levels is a pre-requisite for the conservation and management of common property resources, such as high seas living resources.¹⁹⁵ Particularly, regional cooperation has been emphasised as an important requirement for the successful management of ABNJ, its protection and the management of its living resources.¹⁹⁶

Because of the lack of a supranational global ocean authority and the absence of State sovereignty in ABNJ, cooperation must frequently be implemented through what is referred to in regime theory as anarchy.¹⁹⁷ Game theory is used to understand under which circumstances cooperation will occur. Essentially, the non-zero sum game, commonly known as the Prisoner's Dilemma, is often used to understand cooperative regimes.¹⁹⁸ In this scenario, players have the choice to either cooperate or defect, that is,

¹⁹¹ The *Declaration on International Law* reiterated the duty to cooperate outlined in the UN Charter as a basic principle of international law (Kiss and Shelton, above n 46, 12).

¹⁹² *Charter of the United Nations* art 1, particularly para 3; Kiss and Shelton, above n 46. Cooperation is also one of the five aspects necessary to sustainable human development as outlined by United Nations Development Programme, *Governance for Sustainable Human Development: A UNDP Policy Document* (1997) UNDP <<http://www.pogar.org/publications/other/undp/governance/undppolicydoc97-e.pdf>> (accessed: 15 January 2014).

¹⁹³ *Agenda 21*, Chapter 17 para. 17.59; *Rio Declaration* principle 7 and principle 27; *Stockholm Declaration* principle 24.

¹⁹⁴ See: *Fisheries Jurisdiction Case (United Kingdom of Great Britain and Northern Ireland v Iceland)* (Merits, Judgment) [1974] ICJ Rep 3; Floit, above n 19, 314.

¹⁹⁵ See, eg, Birnie et al, above n 57, 195; Rosemary Rayfuse and Robin Warner, 'Securing a Sustainable Future for the Oceans Beyond National Jurisdiction: The Legal Basis for an Integrated Cross-Sectoral Regime for High Seas Governance for the 21st Century' (2008) 23(3) *The International Journal of Marine and Coastal Law* 399; Julien Rochette and Raphaël Billé, 'Governance of Marine Biodiversity Beyond National Jurisdictions: Issues and Perspectives. Report of the International Seminar "Towards a New Governance of High Seas Biodiversity" (Principality of Monaco, March 20-21, 2008)' (2008) 51(12) *Ocean and Coastal Management* 779; Françoise Burhenne-Guilmin, 'Hotspots in Biodiversity Law' (2009) 39(1) *Environmental Policy and Law* 40; Elinor Ostrom et al, above n 31.

¹⁹⁶ See, eg: 2011 *BBNJ Report* para 14, para 32, para 55 and para 56; Birnie et al, above n 57, 390.

¹⁹⁷ See: Eric Neumayer, 'How Regime Theory and the Economic Theory of International Environmental Cooperation Can Learn From Each other' (2001) 1(1) *Global Environmental Politics* 122, 122. There is an extensive literature on regime theory, international governance and cooperation. See notably the work by Oran R. Young, Stephan Haggard, Beth A Simmons, Andreas Hasenclever, Peter Mayer, and Volker Rittberger.

¹⁹⁸ This non-sum game is explained using the example of two prisoners as follows: 'two criminals have been arrested on suspicion of a crime and are thrown into prison in two separate cells. Both prisoners can choose either to cooperate (deny everything) or defect (confess to the crime and implicate the other man). The prison officers cannot arrest either of them without the confession of one or both men so attempt to cut a deal: a) if only one prisoner confesses, the confessor will be set free for collaborating and given a full pardon. The one who kept quiet will be thrown into jail with the harshest possible sentence as punishment for both the crime and for

not to cooperate. Although there is a high incentive for unilateral defecting, known as free-riding, cooperation is the optimal outcome for all players. Everyone would be worse off if all players were to defect. In the case of living resources in global commons such as high seas fish resources, if everyone were to free-ride and ignore their cooperation and conservation duties, this would result in overfishing and eventually in the extinction of the resources so that nobody would be able to enjoy these resources anymore. Therefore, the main issue with cooperation is that there is a conflict between individual and collective best interests.¹⁹⁹ Free-riding is particularly an issue in global commons such as on the high seas, where there are a large number of States with interest in these areas and no overarching ruling, monitoring and enforcing agency.

From a political standpoint, States may decide to cooperate in instances when: a) the procedure is fair and all cooperating parties can expect the same gains or losses; b) past cooperation experiences have proved to be fruitful; c) States, particularly developing countries, can expect benefits such as technology transfer and capacity building that will help them to comply with an agreement; or d) an exogenous crisis or shock necessitates States to cooperate.²⁰⁰ As noted by Ostrom et al ‘reciprocal cooperation can be established, sustain itself, and even grow if the proportion of those who always act in a narrow, self-interested manner is initially not too high’.²⁰¹ However, a State may choose not to cooperate if it knows that others ‘will gain relatively more from cooperation’.²⁰² ‘Users must be interested in the sustainability of the particular resource so that expected joint benefits will outweigh current costs’.²⁰³ Citing Schmidt, Neumayer points to the fact that ‘the reputation of being regarded as a responsible member of the international community of nation-states represents an important factor in the utility function of state actors’.²⁰⁴ He also highlights that a State is more inclined to cooperate if others do as well, out of ‘fairness’, as well as if there is a way to deter free-riders.²⁰⁵

withholding evidence; b) if both prisoners confess, they will both be sent to jail but with commuted sentences as a reward for their cooperation; c) both prisoners know full well that without a confession from either of them, the police will be forced to let them go’. Source: Sarah Gillinson, ‘Why Cooperate? A Multi-Disciplinary Study of Collective Action’ (Working Paper 234, Overseas Development Institute, 2004), 8-9.

¹⁹⁹ Ibid 9.

²⁰⁰ Neumayer, above n 197, 137-138.

²⁰¹ Ostrom et al, above n 31, 279.

²⁰² Neumayer, above n 197, 131.

²⁰³ Ostrom et al, above n 31, 281.

²⁰⁴ Neumayer, above n 197, 137.

²⁰⁵ Ibid 137-138.

As drivers of the process and sovereign entities, States are the ones that bind themselves, through agreements, to establish cooperative mechanisms and institutions. They affect the direction and response of these institutions to adopt management and conservation measures. They are the authors, addressees and guardians of international environmental law and are the ones that are imposed upon to deal with the issues and implement compliance and enforcement.²⁰⁶ Therefore, once a new regime is adopted, it changes States' expectations and constrains their behaviour.²⁰⁷ Nonetheless, regimes play an important role in bringing about international cooperation and provide political benefits, such as peace and stability, to States Parties.²⁰⁸

To what extent States have to cooperate is not defined in legal agreements. As a result, the duty to cooperate is a fairly loose term as it involves only an obligation for States to negotiate, hence a 'simple obligation of process', but does not necessarily require that an agreement should be reached.²⁰⁹ This is shown for instance by the 1974 *Fisheries Jurisdiction Case*, in which the International Court of Justice (ICJ) concluded that there is an obligation for States to negotiate conservation and equitable exploitation measures for high seas resources but it did not specify that such measures should be taken.²¹⁰ The exact cooperation content is to be established by the States themselves, which requires flexibility on the part of States and, therefore, means that such a duty can be interpreted in different ways by States.²¹¹

In his analysis, Barnes stipulates that 'cooperation is more than a minimal form of engagement between States' by highlighting the 1969 *North Sea Continental Shelf* and

²⁰⁶ Thilo Marauhn, 'Changing Role of the State' in Daniel Bodansky, Jutta Brunnée and Ellen Hey (eds), *The Oxford Handbook of International Environmental Law* (Oxford University Press, 2007) 727.

²⁰⁷ Neumayer, above n 197.

²⁰⁸ Sofia Frantzi, 'What Determines the Institutional Performance of Environmental Regimes? A Case Study of the Mediterranean Action Plan' (2008), 32 *Marine Policy* 618.

²⁰⁹ Richard A Barnes, 'Consolidating Governance Principles for Areas Beyond National Jurisdiction' (2012) 27 *The International Journal of Marine and Coastal Law* 261, 277; *Railway Traffic between Lithuania and Poland (Railway Sector Landwarów-Kaisiadorys) (Lithuania v Poland)* (Advisory Opinion) [1931] PCIJ ser A/B No 42, para 31; Eduardo Ramos Ferretti, 'El Régimen Jurídico Internacional de la Pesca en Alta Mar y la OROP del Pacífico Sur' (2013) 31 *Agenda Internacional* 71, 82.

²¹⁰ *Fisheries Jurisdiction Case (United Kingdom of Great Britain and Northern Ireland v Iceland)* (Merits, Judgment) [1974] ICJ Rep 3, para 72: 'It is one of the advances in maritime international law, resulting from the intensification of fishing, that the former *laissez-faire* treatment of the living resources of the sea in the high seas has been replaced by a recognition of a duty to have due regard to the rights of other States and the needs of conservation for the benefit of all. Consequently, both Parties have the obligation to keep under review the fishery resources in the disputed waters and to examine together, in the light of scientific and other available information, the measures required for the conservation and development, and equitable exploitation, of those resources, taking into account any international agreement in force between them, such as the North-East Atlantic Fisheries Convention of 24 January 1959, as well as such other agreements as may be reached in the matter in the course of further negotiation'.

²¹¹ Alex G Oude Elferink, 'Governance Principles for Areas beyond National Jurisdiction' (2012) 27 *The International Journal of Marine and Coastal Law* 205, 222; Barnes, above n 209, 277.

the 2001 *Mox Plant* cases.²¹² In the former case, the ICJ concluded that there is an obligation for States ‘to conduct themselves [so] that the negotiations are meaningful’.²¹³ In the latter case, Barnes cites the Separate Opinion by Judge Wolfrum, which states that the duty to cooperate ‘balances the principle of sovereignty of States and thus ensures that community interests are taken into account *vis-à-vis* individualistic State interests’.²¹⁴ This is consistent with the status of global commons of ABNJ, where any activity taking place affects the international community.²¹⁵ Oude Elferink specifies that cooperation between States in the context of the LOSC is both mandatory and dynamic.²¹⁶ This means that ‘if new issues covered by the [c]onvention arise which require cooperation, States are obliged to develop such cooperation in accordance with the [c]onvention’.²¹⁷ To this, Barnes adds that cooperation is also a systemic obligation applicable not only to States, but also to all other stakeholders involved in ABNJ.²¹⁸

Legal agreements do provide some guidance as to what the outcomes of successful cooperation between States should be. Cooperation should result in the elaboration of international rules and standards for the protection of the marine environment, the adoption and establishment of conservation measures for the conservation and sustainable use of high seas living resources, the establishment of RFOs, and the application of the precautionary approach.²¹⁹ There is, however, no explicit legal provision on the consequences of failure of States to cooperate.

The UNFSA further specifies the mechanisms by which States are to cooperate in the management and conservation of highly migratory and straddling stocks, particularly by encouraging States to become members of the RFOs in the regions where they fish and to apply these organisations’ conservation and management measures.²²⁰ The cooperation modalities within these RFMOs are likewise not specifically outlined and therefore are left to the authority of States.²²¹ Apart from these mechanisms specifically addressed to highly migratory and straddling fish stocks, there are no other mechanisms

²¹² *Ibid* 278.

²¹³ *North Sea Continental Shelf (Federal Republic of Germany v Denmark; Federal Republic of Germany v Netherlands)* (Judgment) [1969] ICJ Rep 47, para 85.a.

²¹⁴ Barnes, above n 209, 278.

²¹⁵ *Ibid*.

²¹⁶ Oude Elferink, above n 211.

²¹⁷ *Ibid*, 221.

²¹⁸ Barnes, above n 209, 279.

²¹⁹ LOSC art 117, art 118 and art 197; CBD art 5; UNFSA art 5 and art 8.5.

²²⁰ *Ibid* art 8.3.

²²¹ Ramos Ferretti, above n 209, 82.

explicitly mentioned in legal agreements for the conservation of high seas living resources.

While most of the general provisions on cooperation refer more broadly to international cooperation, Article 197 of the LOSC specifically makes reference to regional cooperation for the ‘formulat[ion] and elaborate[ion] of international rules, standards and recommended practices and procedures consistent with this [c]onvention, for the protection and preservation of the marine environment’.²²² With regard to fisheries management, the LOSC and UNFSA also emphasise the need for regional cooperation through RFMOs, in the case of UNFSA with regard to the conservation and management of highly migratory and straddling fish stocks.²²³ As highlighted by Oude Elferink, the regulation of certain high seas activities can be done at the regional level and not always regulated exclusively at the global level.²²⁴ In contrast to the LOSC and UNFSA, CBD’s Article 5 does not explicitly refer to regional cooperation for ABNJ, only that States must cooperate ‘where appropriate, through competent international organizations’.²²⁵ As competent international organisations can have a regional mandate or focus, the conservation and sustainable use of biodiversity in ABNJ is also to be undertaken at the regional level through regional cooperation.²²⁶ As shown in Chapter 2, regional cooperation has been underscored as an important step towards conservation and sustainable use of marine biodiversity in ABNJ.

The application of the duty to cooperate necessarily implies a limitation on States’ sovereignty and their freedoms on the high seas. As cooperation may limit, to a certain extent, their ability to fully undertake and control activities on the high seas, States might be reluctant to enter into cooperative negotiations. Because of their sovereignty status and the lack of a supranational global oceans authority, there is no enforcement of

²²² LOSC art 197. Oude Elferink highlights that, to be consistent with the LOSC, these rules, standards, practices and procedures developed at the regional level need to make sure they do not affect third States’ rights and obligations (Oude Elferink, above n 211, 219).

²²³ LOSC art 118; UNFSA art 8.

²²⁴ Oude Elferink, above n 211, 220.

²²⁵ CBD art 5.

²²⁶ There is a very broad literature on international institutions and international governance, see for instance authors such as Robert O Keohane or Oran R Young. Koremenos et al define international institutions as ‘explicit arrangements, negotiated among international actors, that prescribe, proscribe, and/or authorize behavior’ (Barbara Koremenos et al, ‘The Rational Design of International Institutions’ (2001) 55(4) *International Organization* 761, 762). Encyclopaedia Britannica defines an international organisation as an ‘institution drawing membership from at least three [S]tates having activities in several [S]tates, and whose members are held together by a formal agreement’. See: <http://www.britannica.com/EBchecked/topic/291157/international-organization> (accessed: 12 December 2014).

this duty to cooperate.²²⁷ This reinforces the looseness of the duty to cooperate and underlines the fact that cooperation must be initiated, negotiated and enforced by States themselves.

3.3.2.5 Further Principles for High Seas Governance

A series of workshops on high seas governance were organised by IUCN in 2007 and by the Global Forum on Oceans, Coasts, and Islands in 2008, examining key conservation and governance principles for modern ocean governance.²²⁸ Following these workshops, IUCN published a list of 10 principles for high seas governance.²²⁹ All these principles stem from existing legal instruments or form part of globally agreed international minimum standards that are widely recognised by the international community.²³⁰ There is a push to reaffirm, formalise and consolidate these key principles into a new implementing agreement under the LOSC. This is not only to emphasise States' collective responsibility towards high seas biodiversity conservation but also to ensure the application of global minimum standards and their consistency across all regions and develop a coherent ABNJ governance regime.²³¹ These principles should be viewed in conjunction with each other rather than in isolation.²³²

The key 10 principles also constitute basic modern conservation principles applicable for the conservation and sustainable use of marine biodiversity in ABNJ. Some of the principles already highlighted in this chapter include:

- 1) conditional freedom of activity on the high seas;²³³
- 2) protection and preservation of the marine environment;²³⁴
- 3) international cooperation;²³⁵

²²⁷ Vogler, above n 72, 18.

²²⁸ The workshop on high seas governance gathered over 50 marine leading experts was held in New York between 17 and 19 October 2007. It was co-chaired by Kristina Gjerde, Rosemary Rayfuse, David Vanderzwaag and David Freestone. See: IUCN, 'Co-Chair's Report of Workshop on High Seas Governance for the 21st Century' (Workshop Report, IUCN, 17-19 October 2007); Freestone, above n 28; Biliana Cicin-Sain and David Freestone, 'Moving Toward Ecosystem-Based Management and Integrated Coastal and Ocean Management in Marine Areas Beyond National Jurisdiction' (Report from the Strategic Planning Workshop on Global Ocean Issues in Marine Areas beyond National Jurisdiction in the Context of Climate Change, Global Forum on Oceans, Coasts, and Islands, 23-25 January 2008); Miriam C Balgos et al, 'Executive Summary on the Workshop on Governance of Marine Areas beyond National Jurisdiction: Management Issues and Policy Options' (Workshop Report, Global Forum on Oceans, Coasts, and Islands, 3-5 November 2008).

²²⁹ IUCN, *10 Principles of High Seas Governance* (2008) IUCN <http://cmsdata.iucn.org/downloads/10_principles_for_high_seas_governance_final.pdf> (accessed: 11 December 2014). See also a legal commentary on these principles: Freestone, above n 89.

²³⁰ David Freestone, 'International Governance, Responsibility and Management of Areas Beyond National Jurisdiction' (2012) 27 *The International Journal of Marine and Coastal Law* 191, 199-200; Oude Elferink, above n 211.

²³¹ Freestone, above n 28; Oude Elferink, above n 211, 206.

²³² Katherine Houghton, 'Identifying New Pathways for Ocean Governance: The Role of Legal Principles in Areas Beyond National Jurisdiction' (2014) 49 *Marine Policy* 118, 120.

²³³ See Section 3.2 of this chapter.

²³⁴ See Section 3.3.2.2 of this chapter.

- 4) science-based approach to management;²³⁶
- 5) precautionary approach;²³⁷
- 6) ecosystem approach;²³⁸
- 7) responsibility of States as stewards of the global marine environment;²³⁹ and
- 8) sustainable and equitable use of resources in ABNJ.²⁴⁰

Other principles identified in the IUCN document are:

- 9) public availability of information, which is outlined in Principle 10 of the 1992 *Rio Declaration* and the 1998 *Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters* (Aarhus Convention);²⁴¹ and
- 10) transparent and open decision-making processes, as outlined in UNFSA Article 12.²⁴²

The 2007 IUCN Workshop also included principles such as intergenerational and intragenerational equity, the polluter pays principle, as well as accountability.²⁴³

Oude Elferink also highlights another principle of international law, namely the respect for the law of the sea, in particular the LOSC and related instruments. The Netherlands valued this as an important general principle for high seas governance in their comments on an European Union (EU) draft position for the BBNJ Working Group.²⁴⁴ This includes not only high seas freedoms but also the international principle of good faith, the fulfilment of international obligations responsibility of States and all provisions related to the Area.²⁴⁵ The recognition of the LOSC as providing the basic legal framework for the conservation and sustainable use of high seas biodiversity is

²³⁵ See Section 3.3.2.4 of this chapter.

²³⁶ See Section 3.3.2.3 of this chapter.

²³⁷ See Section 3.3.2.2 of this chapter.

²³⁸ See Section 3.3.2.2 of this chapter.

²³⁹ *Sic utere principle*. See Section 3.3.1 of this chapter.

²⁴⁰ See Section 3.3.2.2 of this chapter.

²⁴¹ 1992 *Rio Declaration* principle 10; *Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters*, opened for signature 25 June 1998, 38 ILM 517 (entered into force 30 October 2001).

²⁴² UNFSA art 12.1: 'States shall provide for transparency in the decision-making process and other activities of subregional and [RFMOs] and arrangements' and art 12.2: 'Representatives from other intergovernmental organizations and representatives from non-governmental organizations concerned with straddling fish stocks and highly migratory fish stocks shall be afforded the opportunity to take part in meetings of subregional and [RFMOs] and arrangements as observers or otherwise, as appropriate, in accordance with the procedures of the organization or arrangement concerned. Such procedures shall not be unduly restrictive in this respect. Such intergovernmental organizations and non-governmental organizations shall have timely access to the records and reports of such organizations and arrangements, subject to the procedural rules on access to them'.

²⁴³ IUCN, above n 228, 24-25. The polluter pays principle stems from the general no-harm principle of international law.

²⁴⁴ See: Oude Elferink, above n 211.

²⁴⁵ LOSC art 87, art 138, art 139, art 235.1 and art 300. See Section 3.3.1 of this chapter.

widely recognised and reiterated at UN meetings by States.²⁴⁶ Barnes also emphasises the need for an integrated approach to ABNJ governance.²⁴⁷ At the BBNJ Working Group meetings, States have reiterated the importance of formulating a set of general principles for the high seas and particularly the application of the ecosystem and precautionary approaches.²⁴⁸ These general principles, should they be included in an implementing agreement for conservation and sustainable use of marine biodiversity in ABNJ, will need to be consistent with the general obligation to protect and preserve the marine environment under the LOSC and to conserve high seas living resources under the LOSC and the CBD.²⁴⁹

3.3.2.6 Enforcement of the Legal Framework

The predominant form of jurisdiction on the high seas is flag State jurisdiction.²⁵⁰ Each vessel sailing on the high seas is answerable to the State whose flag it flies.²⁵¹ The extent of flag States' responsibilities under flag State jurisdiction is dependent on States' membership of international treaties, such as the LOSC, UNFSA, the *Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas* (Compliance Agreement), as well as their membership status under RFMOs.²⁵²

Under the LOSC, States have to 'tak[e] the measures necessary' for the conservation and management of high seas living resources.²⁵³ The LOSC does not explicitly detail which measures are 'necessary', however, these measures will need to include conservation and management as well as enforcement and compliance measures. This

²⁴⁶ 2006 BBNJ Report para 22; Juan Manuel Gómez-Robledo and Robert Hill, *Letter dated 15 May 2008 from the Co-Chairpersons of the Ad Hoc Open-ended Informal Working Group to Study Issues Relating to the Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction Addressed to the President of the General Assembly*, A/63/79, United Nations General Assembly, 63rd sess, Item 73 of the preliminary list (16 May 2008) ('2008 BBNJ Report'), para 9; 2011 BBNJ Report para 10; 2012 BBNJ Report para 11; Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 5 May 2014 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/69/82, United Nations General Assembly, 69th sess, Item 75(a) of the preliminary list (5 May 2014) ('2014a BBNJ Report') Appendix A; 2014b BBNJ Report para 12.

²⁴⁷ Barnes, above n 209, 283.

²⁴⁸ See, eg: 2011 BBNJ Report para. 42; Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 23 September 2013 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/68/399, United Nations General Assembly, 68th sess, Item 76(a) of the preliminary list (23 September 2013) ('2013 BBNJ Report') para 49; 2014a BBNJ Report para 39; 2014b BBNJ Report para 36.

²⁴⁹ LOSC art 117, art 118, art 192 and art 311; CBD art 22.

²⁵⁰ LOSC art 94.1.

²⁵¹ The flag State is responsible for maintaining a register of its vessels, applying its internal law over vessels and crew, ensuring the safety of crew and vessel at sea as well as conforming to and applying the internationally adopted rules and regulations (Ibid art 94).

²⁵² Rosemary Rayfuse, 'Non-Flag State Enforcement and Protection of the Marine Environment: Responding to IUU Fishing' in Myron H Nordquist, Tommy T B Koh and John Norton Moore (eds), *Freedom of Seas, Passage Rights and the 1982 Law of the Sea Convention* (Martinus Nijhoff, 2009) 573, 578.

²⁵³ LOSC art 117 and art 118.

means the adoption, implementation and enforcement of measures for the conservation and management of high seas living resources falls within the competency of States that can exercise their responsibility either individually through their flag State jurisdiction or through a RFO.²⁵⁴ Furthermore, flag States have the responsibility to implement and enforce international laws and regulations in place for the prevention, reduction and control of vessel pollution.²⁵⁵

The 1995 UNFSA provides more detailed and stringent obligations on the types of enforcement measures that need to be adopted and applied by States both towards their own vessels and vessels of other RFMO member States. For their own vessels, States are required to restrict the access to fisheries by issuing and regulating fishing licenses, establish a national record of authorised fishing vessels as well as monitor, report and verify the position, catch and effort of their vessels.²⁵⁶ States also have the responsibility to enforce conservation and management measures through effective monitoring, control and surveillance, ensure the compliance of their vessels with measures adopted by RFMOs of which they are members and ensure that their national agencies cooperate in the implementation of these measures.²⁵⁷ States must also cooperate with the other RFMO members to ensure that all States Parties to the UNFSA comply and enforce the measures adopted by RFMOs.²⁵⁸ This is to be done through the establishment of procedures for boarding and inspection of vessels and the taking of actions against such States Parties that have violated the rules of the regional organisation.²⁵⁹

This duty to cooperate is incumbent on all States, regardless of their RFMO memberships.²⁶⁰ The UNFSA aims to have States comply with both its legal provisions and conservation and management measures adopted by RFMOs.²⁶¹ As highlighted by Rayfuse, the cooperation duty comprises the duty of effective vessel control, which, in the case where a State fails in this duty, would mean that this State forfeits its right to

²⁵⁴ Ibid art 118 states that '[States] shall, as appropriate, cooperate to establish subregional or [RFOs] to this end', that is to 'tak[e] the measures necessary for the conservation of the living resources concerned'.

²⁵⁵ Ibid art 217.

²⁵⁶ UNFSA art 5.1, art 10.h and art 18.3.

²⁵⁷ Ibid art 5.1, art 10.1, art 18.1 and art 19.1.

²⁵⁸ Ibid art 20.1.

²⁵⁹ Ibid art 21.2.

²⁶⁰ Rayfuse, above n 252, 592.

²⁶¹ Rosemary Rayfuse, 'To Our Children's Children's Children: From Promoting to Achieving Compliance in High Seas Fisheries' (2005) 20(3) *The International Journal of Marine and Coastal Law* 509, 514.

participate in the freedom of fishing.²⁶² The adoption and implementation of enforcement and compliance measures as well as measures to control and monitor activities on the high seas are also advocated in the 1995 *Code of Conduct*.²⁶³

These UNFSA enforcement measures are only applicable to the conservation and management of straddling and highly migratory fish stocks, not to high seas living resources as a whole. They are to be adopted by States either individually through flag State jurisdiction or collectively through regional or international cooperative mechanisms. In this context, it is interesting to note that the 1992 CBD does not prescribe any enforcement measures for States for the conservation and sustainable use of biodiversity. The LOSC is, therefore, the only legally binding text for which enforcement measures, even if not explicitly outlined, are applicable to all high seas living resources.

The legally binding 1993 *Compliance Agreement* complements the enforcement provisions highlighted above by outlining the general responsibility of flag States on the high seas. This is ‘to take such measures as may be necessary to ensure that fishing vessels entitled to fly its flag do not engage in any activity that undermines the effectiveness of international conservation and management measures’.²⁶⁴ This means that States need to ensure that any activity not in line with the *Compliance Agreement* is punishable under national laws and that severe sanctions against offenders will be taken.²⁶⁵ States also have to establish and maintain a record of vessels authorised to fish on the high seas – this is now considered to be part of customary international law – and cooperate in promoting vessel compliance on the high seas.²⁶⁶ If flag States are not able or willing to control vessels’ activity and behaviour at sea, they are not to accept them on their registry.²⁶⁷

Port States play a complementary role, although flag States have the principal legal responsibility and liability for taking and enforcing appropriate measures for the conservation and management of high seas living resources and for the protection and

²⁶² Rayfuse, above n 252, 594.

²⁶³ *Code of Conduct*, art 6.10 and art 7.1.7.

²⁶⁴ *Compliance Agreement* art III.1.

²⁶⁵ Rayfuse, above n 252, 579.

²⁶⁶ *Compliance Agreement* art IV and art V; Rayfuse, above n 252, 582.

²⁶⁷ Rayfuse, above n 252, 582.

preservation of the marine environment.²⁶⁸ Port States are given the mandate to investigate and institute proceedings against any vessel for illegal discharges on the high seas²⁶⁹ as well as adopt enforcement measures to support the conservation and management measures adopted at the global or regional levels, particularly in relation to illegal, unreported and unregulated (IUU) fishing.²⁷⁰ As noted by Molenaar, customary international law recognises that foreign vessels do not have a general access right to States' ports and that port States may exercise jurisdiction over their ports at their discretion.²⁷¹ The latter is part of the sovereign right of States to exercise jurisdiction within their own territory.²⁷² The use of port State measures as an important and cost-effective compliance and enforcement measure to combat IUU and to deter free-riders has also been encouraged within RFMOs, through the adoption of non-discriminatory catch landings and transshipments prohibition schemes against non-RFMO members.²⁷³ Such schemes have found growing support amongst RFMOs, particularly within the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), the International Commission for the Conservation of Atlantic Tunas (ICCAT), the Northwest Atlantic Fisheries Organization (NAFO), the North East Atlantic Fisheries Commission (NEAFC), the South East Atlantic Fisheries Organisation (SEAFO), the Inter-American Tropical Tuna Commission (IATTC), the Indian Ocean Tuna Commission (IOTC) and the Western and Central Pacific Fisheries Commission (WCPFC).²⁷⁴

²⁶⁸ LOSC art 235: 'States are responsible for the fulfilment of their international obligations concerning the protection and preservation of the marine environment. They shall be liable in accordance with international law'.

²⁶⁹ Ibid art 218.

²⁷⁰ UNFSA art 23.1; The 2009 FAO *Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing*, opened for signature 22 November 2009 (not yet in force) has the objective 'to prevent, deter and eliminate IUU fishing through the implementation of effective port State measures, and thereby to ensure the long-term conservation and sustainable use of living marine resources and marine ecosystems' (art 2). It qualifies ports, the right or denial of entry into these ports and their use, as well as inspection procedures to be undertaken with a view to combat IUU fishing. The 2001 non-legally binding *IPOA-IUU* also encourages States to use port State measures against IUU fishing (art 52). See, eg: FAO, 'Model Scheme on Port State Measures to Combat Illegal, Unreported and Unregulated fishing' (Report, FAO, 2007); Erik Jaap Molenaar, 'Port State Jurisdiction: Towards Comprehensive, Mandatory and Global Coverage' (2007) 38 *Ocean Development and International Law* 225; High Seas Task Force, 'Closing the Net: Stopping Illegal Fishing on the High Seas' (Report, Governments of Australia, Canada, Chile, Namibia, New Zealand and the United Kingdom, WWF, IUCN and the Earth Institute at Columbia University, 2006); Stefan Flothmann et al, 'Closing Loopholes: Getting Illegal Fishing Under Control' (2010) 328 *Science* 1235; Judith Swan, 'Port State Measures to Combat IUU Fishing: International and Regional Developments' (2006) 1(7) *Sustainable Development Law and Policy* 38.

²⁷¹ Erik Molenaar, 'Port State Jurisdiction to Combat IUU Fishing: The Port State Measures Agreement' in Dawn A Russell and David L VanderZwaag (eds), *Recasting Transboundary Fisheries Management Arrangements in Light of Sustainability Principles: Canadian and International Perspectives* (Martinus Nijhoff, 2010) 369, 376.

²⁷² LOSC art 2 and art 11.

²⁷³ *IPOA-IUU* art 63. Port State measures are more cost-effective than at-sea enforcement measures.

²⁷⁴ See detailed analysis by the Pew Environment Group on port State performance within RFMOs: http://www.portstateperformance.org/index.php/_rfmo (accessed: 22 December 2014).

While it is necessary for port State measures to be applied regionally, there is also a need to ensure global compatibility and coverage through the creation of global minimum standards.²⁷⁵ Port State measures are used within RFMOs to strengthen their enforcement policy towards third States and other non-compliant States. They have also been used by individual States that advocate the right to conserve and manage highly migratory and straddling fish stocks found on the high seas near their EEZ against excessive fishing by DWFNs. This is the case for Chile who took unilateral port State measures against foreign and Chilean fishing vessels who caught swordfish on the high seas outside of the Chilean EEZ in contravention of the conservation regulations adopted in the 1989 Chilean National Fisheries Law.²⁷⁶ This started a legal dispute, the *Swordfish Case*, between the European Community (EC) and Chile. The dispute was brought to the World Trade Organization (WTO) by the EC and to ITLOS by Chile and resulted in 2002 in the suspension of both cases and the adoption by Chile and EC of a political solution in the form of a provisional arrangement in 2001 and an agreement in 2010.²⁷⁷

While port State jurisdiction through the implementation of port State measures is growing, flag State jurisdiction remains the main channel through which compliance and enforcement measures are applied on the high seas.²⁷⁸ The UNFSA emphasises that only flag States that can effectively apply and implement conservation and enforcement measures should be allowed to fish on the high seas.²⁷⁹ However, flag State jurisdiction

²⁷⁵ Molenaar, above n 271, 374.

²⁷⁶ *Chilean National Fishery Law Consolidated by Supreme Decree 430 of 1991 and Extended by Decree 598 of 1999* art. 165. See also: Orrego Vicuña, above n 17, 366.

²⁷⁷ *EC-Chile Provisional Arrangement concerning the Conservation and Sustainable Exploitation of Swordfish Stocks in the South-Eastern Pacific Ocean*, signed on 25 January 2001. It established an EC/Chile Bilateral Scientific and Technical Commission, which serves notably as mean to exchange information, advise on conservation measures, and monitor the swordfish stock status (see: World Trade Organization, 'Arrangement between the European Communities and Chile' (WT/DS193/3, WTO, 6 April 2001). This Provisional Arrangement was replaced by the *Agreement in the Form of an Exchange of Letters between the European Union and the Republic of Chile on the Provisional Application of the Understanding concerning the Conservation of Swordfish Stocks in the South-Eastern Pacific Ocean*, opened for signature 20 June 2010 (entered into force 20 June 2010) (see: European Union, 'Official Journal of the European Union' (L 155/10, EU, 22 June 2010) ('Journal of the European Union')). This Agreement puts an end to the Swordfish case dispute under the WTO and ITLOS. The EU and Chile have also sponsored a Multilateral Consultation (Journal of the European Union para 6), which has established a Multilateral Arrangement on Exchange of Information. Parties to this Arrangement include the EC, Chile, Chinese Taipei, Colombia, Ecuador, Japan and Peru, with IATTC and the Comisión Permanente del Pacífico Sur (CPPS) as observers (see: SPRFMO, 'First International Meeting on the Establishment of the South Pacific Regional Fisheries Management Organisation' (Paper No SP/01/Inf4 rev2, SPRFMO, 14-17 February 2006), 12.

See also: Peter-Tobias Stoll and Silja Vöneky, 'The Swordfish Case: Law of the Sea v. Trade' (2002) 62 *Max-Planck-Institut für Ausländisches Öffentliches Recht und Völkerrecht* 21; John Shamsey, 'ITLOS vs. Goliath: The International Tribunal for the Law of the Sea Stands Tall with the Appellate Body in the Chilean-EU Swordfish Dispute' (2002) 12 *Transnational Law and Contemporary Problems* 513; Marcos A Orellana, 'The Swordfish Dispute between the EU and Chile at the ITLOS and the WTO' (2002) 71 *Nordic Journal of International Law* 55; Marcos Orellana, 'The EU and Chile Suspend the Swordfish Case Proceedings at the WTO and the International Tribunal of the Law of the Sea' (2001) 6(1) *American Society of International Law Insights*.

²⁷⁸ See, eg: Dorota Englender et al, 'Cooperation and Compliance Control in Areas Beyond National Jurisdiction' (2014) 49 *Marine Policy* 186, 186.

²⁷⁹ UNFSA art 18.2: 'A State shall authorize the use of vessels flying its flag for fishing on the high seas only where it is able to exercise effectively its responsibilities in respect of such vessels under the Convention and this Agreement'.

has also been seen as a weakness and a legal obstacle to compliance by fishing vessels on the high seas as many flag States do not exercise their jurisdiction on the high seas effectively.²⁸⁰

3.4 Conclusion

This chapter provided an overview of the current global legal framework applicable to the conservation of marine biodiversity in ABNJ. Through the global commons status conferred on the high seas, States benefit from several high seas freedoms, including the freedom of fishing, albeit now with several restrictions and obligations imposed by international law. This special status makes high seas resources common property resources, which become prone to overexploitation through the Tragedy of the Commons. Under the LOSC, providing the basic legal framework for the oceans, and the growing soft and hard provisions of international law, States have the duty to protect and preserve the marine environment and conserve high seas living resources. They also have the duty to cooperate to that effect, an obligation of customary international law.

Biodiversity conservation is a common concern resulting in a global conservation responsibility for all States. It encompasses the conservation and sustainable use of biological resources and ecosystems. Although States have this global responsibility to conserve biodiversity, the special legal regime of the high seas as global commons and the principle of State sovereignty have implications for the conservation of marine biodiversity in ABNJ. Marine biodiversity conservation in ABNJ is entirely dependent on States' willingness to become Parties to relevant treaties, to adopt, implement and enforce conservation measures and to cooperate, optionally through competent international and regional organisations, to this end.

The legal provisions covering the conservation of marine biodiversity in ABNJ are scarce and scattered across several global, regional and sectoral agreements, most of which come from the international legal framework for fisheries, with very few concrete measures involving the conservation of marine biodiversity in ABNJ. Legal provisions on the types of conservation and enforcement measures to be adopted are lacking and there are no explicit enforcement measures to be adopted by States for high seas living

²⁸⁰ See, eg: Engländer et al, above n 278.

resources other than for highly migratory and straddling fish stocks. The CBD is the only global convention on the conservation of biodiversity. It contains only weak provisions that depend on the cooperation of its Contracting Parties in the conservation of marine biodiversity in ABNJ as the convention does not have the mandate to cover the conservation of components of biodiversity in ABNJ.

Through both the LOSC and UNFSA, the responsibility to conserve high seas living resources has been given to RFOs, particularly RFMOs. There is a general duty for States to cooperate in the establishment of such organisations and for the adoption and establishment of conservation and management measures for the conservation and sustainable use of high seas living resources, particularly with regard to highly migratory and straddling fish stocks. The extent of cooperation is not defined in legal agreements, although several treaties devolve this duty to cooperate to the regional level. In addition, the special status of the high seas provides a high incentive for States to free-ride.

The conservation and sustainable use of marine biodiversity in ABNJ is not fully covered under the current global legal framework. Regional cooperation has been underscored as an important requirement for the management of high seas living resources, and particularly through RFMOs for the conservation and sustainable use of highly migratory and straddling fish stocks. The focus of international law on the regional level will be explored in the next chapter, which will examine the regional institutional framework and the work accomplished under RFMOs.

4 THE REGIONAL INSTITUTIONAL FRAMEWORK FOR THE CONSERVATION OF HIGH SEAS BIODIVERSITY OF THE SOUTHEAST PACIFIC

4.1 Introduction

Both the duty to cooperate and the duty to conserve high seas living resources under international law provide the basis for the conservation and sustainable use of high seas resources and biodiversity. Several legal agreements entrust the responsibility of environmental protection and high seas living resources' management to both the global and regional levels thus giving regional institutions an important role to play, alongside global organisations, in furthering the development of conservation and management measures beyond the national jurisdiction of States. The conjunction of global and regional organisations' efforts as well as their collaboration is important to achieve better conservation and management of high seas resources and biodiversity.

This chapter focuses on the regional institutional approach to the conservation of high seas biodiversity, focusing on the duty of States to cooperate. The regional institutional framework of the Southeast Pacific relevant to the conservation of high seas biodiversity is outlined and the interaction and cooperation between the Inter-American Tropical Tuna Commission (IATTC), the South Pacific Regional Fisheries Management Organisation (SPRFMO) and the Comisión Permanente del Pacífico Sur (CPPS) assessed. The manner and extent to which these institutions interact in the region affects the conservation and management of high seas biodiversity. This is the first of three chapters that will be dealing with the question: even in the absence of a global legal framework for conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction (ABNJ), does the legal and regional institutional framework in the Southeast Pacific provide comprehensive and adequate conservation and management of high seas biodiversity?

As highlighted in Chapter 2, it is important to differentiate between the term biodiversity, which is the variability within and amongst ecosystems, species and genetic material, and the term biological resources, which is a component of

biodiversity.¹ Biological resources, also termed living resources, are the ‘tangible biotic components of ecosystems’.² Given the conceptual nature of biodiversity, legal obligations towards its conservation can only be achieved through the conservation and sustainable use of its tangible components, namely biological resources and ecosystems.³ As highlighted by Birnie et al, high seas living resources conservation ‘requires inclusion of plants, animals, micro-organisms, and the non-living elements of the environment on which they depend’.⁴ Throughout this thesis, biological resources and living resources will be used interchangeably.

4.2 Regional Institutionalisation of the Cooperation and Conservation Duties

Although States enjoy freedoms on the high seas set out in Article 87 of the *United Nations Law of the Sea Convention* (LOSC), these freedoms are qualified by important responsibilities, including the duty to conserve living resources on the high seas, the duty to protect and preserve the marine environment and the duty to cooperate for these purposes.⁵ While States are obliged under these overarching provisions of the LOSC to adopt measures for the protection and conservation of the marine environment and its living resources, the conservation and management of high seas living resources also depends to a large extent on the establishment of regional agreements and institutions that will adopt and implement measures for the conservation and management of high seas living resources.⁶ The implementation of the LOSC provisions through regional institutions is particularly promoted in the *United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks* (UNFSA), which sees regional

¹ The CBD defines biodiversity as ‘the variability among living organisms from all sources (...) and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems’ (*Convention on Biological Diversity*, opened for signature 5 June 1992, ATS 32 (entered into force 29 December 1993) (‘CBD’) art 2). The CBD defines biological resources as ‘genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity’ (CBD art 2).

² Glowka et al, ‘A Guide to the Convention on Biological Diversity’ (Report, IUCN, 1994) 16.

³ Ibid. Ecosystems are defined by the CBD as ‘a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit’ (CBD art 2).

⁴ Patricia Birnie, Alan Boyle and Catherine Redgwell, *International Law and the Environment* (Oxford University Press, 3rd ed., 2009) 586.

⁵ *United Nations Convention on the Law of the Sea*, opened for signature 10 December 1982, ATS 31 (entered into force 16 November 1994) (‘LOSC’) art 87, art 117 and art 118.

⁶ LOSC art 63.2, art 64 and art 118; *United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, opened for signature 8 September 1995, ATS 8 (entered into force 11 December 2001) (‘UNFSA’) art 8.5; United Nations Food and Agriculture Organization, *Code of Conduct for Responsible Fisheries* (1995) (‘Code of Conduct’) art 7.1.3. Provisions on the establishment of regional bodies for the conservation and management of living resources is found in both the exclusive economic zone (EEZ) and the high seas sections of the LOSC. Although the LOSC provides for the creation of regional ‘fisheries’ organisations, art 118’s chapeau mentions the ‘conservation and management of living resources’ rather than just fish stocks. The UNFSA and Code of Conduct on the other hand only focus on fisheries.

cooperation as a means of fulfilling the conservation duty in the case of straddling and highly migratory fish stocks.⁷

Although the *Convention on Biological Diversity* (CBD) is the principal convention on the conservation of biodiversity, its provisions do not provide specific information on how cooperation towards the conservation and management of biodiversity in ABNJ should be achieved.⁸ It gives States the option to fulfil their duty to cooperate through ‘competent international organisations’.⁹ The CBD therefore leaves to States the form and degree of cooperation that they want to exercise for the conservation and sustainable use of biodiversity, referring them back to international law and other legal agreements. The LOSC, as a framework convention, takes precedence over the relevant CBD provisions and provides the basis for the implementation of the cooperation and conservation duties on the high seas.

This contrasts with the provisions on the protection of the marine environment in the LOSC. Environmental protection also needs to take place at the regional level but States have the option to either cooperate between themselves or to do so through ‘competent international organizations’.¹⁰ States Parties to the LOSC do not necessarily need to work through institutions at the regional level, although this has been partially done through the work of the United Nations Environment Programme (UNEP) regional seas programme (RSP) and through some non-UNEP marine environmental protection organisations such as the Oslo-Paris Commission (OSPAR) in the North-East Atlantic, as will be shown below.¹¹ However, States may also work through international organisations that have already been previously established.

⁷ UNFSA art 7.1.a, art 7.1.b and 8.1.

⁸ The CBD has provisions for areas within national jurisdiction (ABNJ). Under Article 5 of the CBD, States are required to cooperate for the conservation and sustainable use of biological diversity in ABNJ but this provision does not specify explicitly how States should cooperate.

⁹ CBD art 5.

¹⁰ LOSC art 197.

¹¹ OSPAR is a cooperative mechanism through which fifteen States of Western Europe protect the marine environment of the North-East Atlantic. OSPAR is the abbreviation of the two conventions upon which the current mechanism is built, namely the *Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft*, opened for signature 15 February 1972 (entered into force 7 April 1974) (*‘Oslo Convention’*) and the *Convention for the Prevention of Marine Pollution from Land-Based Sources*, opened for signature 4 June 1974, 13 ILM 352 (entered into force 6 May 1978) (*‘Paris Convention’*). These two conventions were updated and unified and became the *Convention for the Protection of the Marine Environment of the North-East Atlantic*, opened for signature 22 September 1992, 32 ILM 1072 (entered into force 25 March 1998) (*‘OSPAR Convention’*). In 1998, a new annex on biodiversity and ecosystems was adopted, which includes non-polluting human activities affecting the marine environment. http://www.ospar.org/content/content.asp?menu=00010100000000_000000_000000 (accessed: 13.08.2014).

Many marine species, and particularly fish stocks, have a wide geographical distribution and either straddle the exclusive economic zones (EEZs) of coastal States and the high seas or undertake long migrations over wide ocean regions. These fish stocks, because of their nomadic nature, require States' cooperation to ensure that the conservation and management measures applied are compatible within and beyond national jurisdiction as well as within a specific region. Whether States should take unilateral action or cooperate towards the conservation of high seas living resources as prescribed in the LOSC depends on whether the living resources of an area are being exploited by one or several States. Since most of the high seas living resources are exploited by several States, it follows that measures for their conservation and management need to be taken cooperatively by States and, particularly, must be adopted through a regional fisheries organisation (RFO) that will have already been established as a fulfilment of their duty to cooperate.¹² The conservation and management of high seas living resources is therefore a matter of cooperation that cannot be left to individual States. As highlighted by Henriksen, it is a requirement for all States to coordinate their conservation efforts.¹³

While the LOSC entrusted the responsibility of conserving and managing high seas living resources to States and RFOs, it was not until the UNFSA was adopted that mechanisms detailing how these living resources should be conserved and managed were introduced. Although UNFSA also addresses associated and dependent species to target fish stocks, the focus of this agreement remains primarily on targeted highly migratory and straddling fish stocks.¹⁴ States have to cooperate in the management and conservation of high seas living resources through RFOs.

There is an institutionalisation of the cooperation and conservation duty for the management of high seas living resources, particularly migratory fish stocks, at the

¹² RFOs, also known as regional fisheries bodies (RFBs), are international organisations that have been established by States to manage certain fish stocks within a specific region. Throughout this chapter, both terms will be used interchangeably. A detailed explanation on RFOs is found in Section 4.2.2 of this chapter.

¹³ Tore Henriksen, 'Revisiting the Freedom of Fishing and Legal Obligations on States Not Party to Regional Fisheries Management Organizations' (2009) 40 *Ocean Development and International Law* 80, 90.

¹⁴ Unlike the CBD, the UNFSA does not have a Conference of the Parties (COP) so that its provisions are to be implemented by RFOs (identified as 'arrangements' meaning 'cooperative mechanisms' under UNFSA art 1.d). However, informal consultations of States Parties to the UNFSA have taken place yearly between 2002 and 2010. Another consultation took place in April 2014. These informal consultations review the regional and global implementation of the UNFSA. Also, two Review Conferences of the UNFSA have taken place (in May 2006 and May 2010) to review its effectiveness in conserving and managing straddling and highly migratory fish stocks.

regional level through RFOs.¹⁵ Whether the current focus of international law on these specific high seas fisheries stocks is enough to ensure the conservation and management of all components of high seas biodiversity will be discussed in this chapter as well as the next chapters.

4.2.1 Regional Seas Organisations

Under the umbrella of the UNEP RSP, regional seas organisations (RSOs) were established from 1974 onwards to facilitate regional cooperation in the protection of marine and coastal environments and the conservation and management of their living resources. RSOs

*‘provide valuable regional frameworks for: (i) assessing the state of the marine environment; (ii) addressing key developments (e.g. socio-economic activities, coastal settlements, land-based activities) that interact with the marine environment; and (iii) agreeing on appropriate responses in terms of strategies, policies, management tools, and protocols’.*¹⁶

The establishment of RSOs for particular regions is not explicitly required under international law but it is a means for States to fulfil their duty to cooperate to protect and preserve the marine environment under Article 197 of the LOSC. Since 2008, the United Nations General Assembly (UNGA) has encouraged States in its yearly Resolution on Oceans and the Law of the Sea to become parties to regional seas conventions.¹⁷ To date, 13 RSOs have been established under the UNEP RSP and are either administered by UNEP or by a regional institution.¹⁸ Five other independent organisations are also part of the regional seas network (Figure 4.1).¹⁹

¹⁵ See also: M Cecilia Engler, Establishment and Implementation of a Conservation and Management Regime for High Seas Fisheries, with Focus on the Southeast Pacific and Chile: From Global Developments to Regional Challenges (UN-Nippon Foundation Fellowship, 2007).

¹⁶ David E Johnson et al, ‘Building the Regional Perspective: Platforms for Success’ (2014) 24(Suppl. 2) *Aquatic Conservation: Marine and Freshwater Ecosystems* 75, 76.

¹⁷ The last recommendation was issued in December 2013: United Nations General Assembly, *Resolution Adopted by the General Assembly*, GA Res 68/70, 68th sess, Agenda Item 76(a), A/Res/68/70 (27 February 2014), para 161. This recommendation is made under section IX ‘Marine Environment and Marine Resources’ of the UNGA Resolution and is made in the context of marine environmental protection and preservation: ‘Encourages States that have not done so to become parties to regional seas conventions addressing the protection and preservation of the marine environment’.

¹⁸ These include conventions and organisations for the following regions: Black Sea, Wider Caribbean, East Asian Seas, Eastern Africa, South Asian Seas, ROPME Sea Area, Mediterranean, North-East Pacific, Northwest Pacific, Red Sea and Gulf of Aden, South-East Pacific, Pacific and Western Africa. Source: <http://www.unep.org/regionalseas/about/default.asp> (accessed: 23 April 2014).

¹⁹ Antarctic, Arctic, Baltic Sea, Caspian Sea, North-East Atlantic. Source: <http://www.unep.org/regionalseas/about/default.asp> (accessed: 23 April 2014).

The Southeast Pacific's RSP is administered by CPPS.²⁰ Most of the RSOs have been created by a regional convention to which an action plan, several protocols and other legal agreements have been added to manage the specific challenges of the region, mainly focusing on marine pollution.²¹ Except for the Antarctic, North-East Atlantic, Southwest Pacific and Mediterranean conventions, all the other RSO conventions apply to areas within the national jurisdiction of the participating States.²² Even for the ones with an ABNJ mandate, there are 'very few initiatives [by such RSOs] in ABNJ that go beyond the establishment of [marine protected areas (MPAs)]'.²³

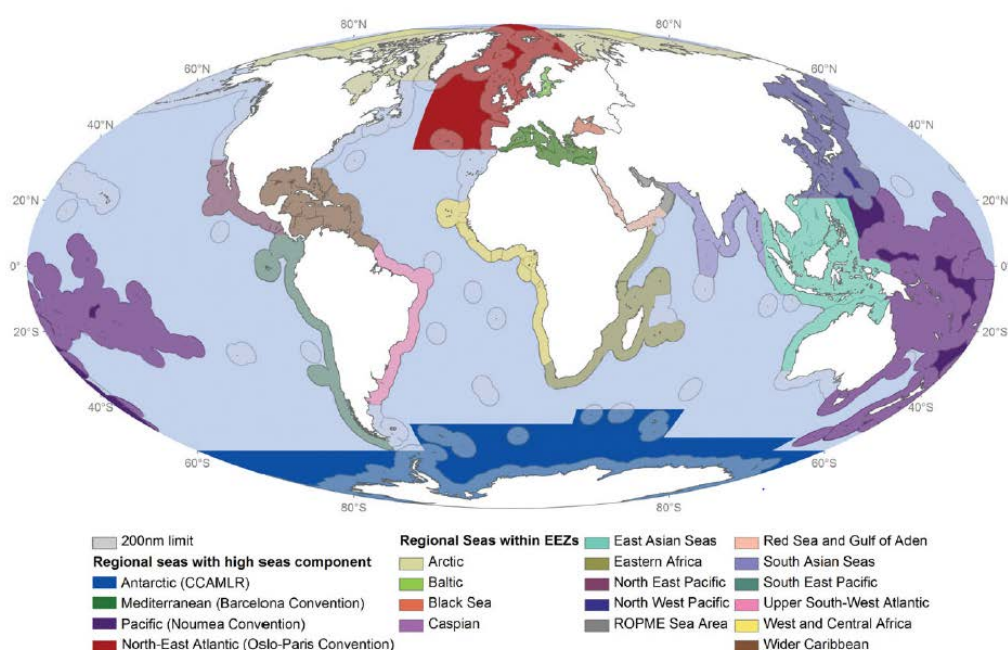


Figure 4.1: Overview of the Geographical Distribution of RSOs
(Source: Ban et al 2014)²⁴

²⁰ *Convenio para la Protección del Medio Marino y la Zona Costera del Pacífico Sudeste* [Convention for the Protection of the Marine Environment and Coastal Area of the Southeast Pacific], opened for signature 12 November 1981 (entered into force 19 May 1986) ('CPPS Marine Environmental Protection Convention').

²¹ LOSC art 1 defines pollution of the marine environment as: 'the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities'. This means that marine pollution includes land-based sources of pollution.

²² Convention on the Conservation of Antarctic Marine Living Resources, opened for signature 20 May 1980, ATS 9 (entered into force 7 April 1982) art 1; OSPAR Convention art 1a; Convention for the Protection of the Natural Resources and Environment of the South Pacific Region, opened for signature 24 November 1986, ATS 31 (entered into force 22 August 1990) art 2a.ii; Convention for the Protection of the Mediterranean Sea against Pollution, opened for signature 16 February 1976, 15 ILM 290 (entered into force 12 February 1978) art 1.

²³ Sebastian Unger and Julien Rochette, 'Governance of Areas Beyond National Jurisdiction – Developing and Strengthening Regional Approaches' (UNEP(DEPI)/RS.15/WP.6.RS, UNEP, 2013), 4.

²⁴ Source: Natalie C Ban et al, 'Systematic Conservation Planning: A Better Recipe for Managing the High Seas for Biodiversity Conservation and Sustainable Use' (2014) 7(1) *Conservation Letters* 41, 47.

These RSOs involve the participation of 145 States across 18 regions. So far, they have had varying degrees of success in the protection of the marine environment within their Convention Area.²⁵ Scholars have identified several factors that have contributed to limiting the effectiveness of RSOs in the conservation of biodiversity and environmental protection, such as: a) limited human and funding resources; b) lack of political will and/or political instability; c) geographical scope and mandate not based on large marine ecosystems or marine ecoregions and most of RSOs' mandates are not extending to ABNJ; d) lack of capacity; e) lack of reference in their mandate of sustainable development and marine biodiversity use; f) weak enforcement mechanisms and implementation of measures and lack of compliance and enforcement measures and sanctions; g) lack of an intersectoral approach to environmental protection and of specific collaboration mechanisms with regional fisheries management organisations (RFMOs); h) lack of an integrated approach to management, marine spatial planning and application of the ecosystem approach; and i) 'frozen' institutional frameworks that have not been updated.²⁶

Regional seas conventions usually incorporate a broader ecosystem approach and provide for the conservation of vulnerable and fragile marine ecosystems and habitats that are to be fulfilled under international law.²⁷ The ecosystem approach was endorsed

²⁵ UNEP, 16th Global Meeting of the Regional Seas Conventions and Action Plans (2014) UNEP(DEPI)/RS.16/WP.7.RS <www.unep.org/ecosystemmanagement/water/regionalseas40/Portals/50221/16%20RSCAPs%20meetingreport.pdf> (accessed: 25 December 2014).

²⁶ Johnson et al, above n 16, 77; Julien Rochette and Raphaël Billé, 'Bridging the Gap between Legal and Institutional Developments within Regional Seas Frameworks' (2013) 28 *The International Journal of Marine and Coastal Law* 433, 434-435; Christophe Lefebvre, *Protection et Préservation du Milieu Marin: Les Apports des Conventions Régionales sur les Mers aux Dispositions de la Convention des Nations Unies sur le Droit de la Mer* (2010) Hors-série 8 Vertigo – La Revue Électronique en Sciences de l'Environnement <<http://vertigo.revues.org/10288>> (accessed: 25 December 2014); R Warner, K M Gjerde and D Freestone, 'Regional Governance for Fisheries and Biodiversity' in Serge M Garcia, Jake Rice and Anthony Charles (eds), *Governance of Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution* (Wiley-Blackwell, 2014) 211.

²⁷ Examples of some RSOs that have incorporated an ecosystem approach to their management: the OSPAR Commission (OSPAR Convention, annex V, particularly art 3.1.b.iv); the Caribbean Environment Programme (Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, opened for signature 24 March 1983, 22 ILM 221 (entered into force 11 October 1986) preamble and art 10; The East Asian Environment Programme (1994 Action Plan for the Protection and Sustainable Development of the Marine and Coastal Areas of the East Asian Region); the Eastern African Environment Programme (Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region, opened for signature 21 June 1985 (entered into force 30 May 1996) art 10 and art 12).

Examples of some RSOs that have incorporated the conservation of vulnerable and fragile marine ecosystems and habitats into their action plans and programmes: the Caribbean Environment Programme (Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, opened for signature 24 March 1983, 22 ILM (entered into force 11 October 1986) art 10; Protocol Concerning Specially Protected Areas and Wildlife to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, opened for signature 18 January 1990, 19 EPL 224 (entered into force 18 June 2000)); The East Asian Environment Programme (1994 Action Plan for the Protection and Sustainable Development of the Marine and Coastal Areas of the East Asian Region); the Eastern African Environment Programme (Protocol Concerning Protected Areas and Wild Fauna and Flora in the Eastern African Region, opened for signature 21 June 1985 (entered into force 30 May 1996)); the Mediterranean Environment Programme (Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean, opened for signature 10 June 1995, 6 YbIEL 887 (entered into force 12 December 1999); 1995 Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, Art. 10).

Rules and regulations for the prevention and control of marine pollution have been codified in conventions regulating shipping under the International Maritime Organization (IMO) such as the *International Convention for the Prevention of Pollution from Ships as modified by the Protocol of 1978*, opened for signature 17 February 1978, ATS 9 (entered into force 2 October 1983). The

at the fifth Conference of the Parties (COP) to the CBD in 2000 and is ‘a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way’.²⁸ Within this approach, humans are an integral part of the ecosystem. The CBD has developed 12 principles and five points of operational guidance for the use of the ecosystem approach.²⁹

4.2.2 Regional Fisheries Management Organisations

RFMOs are international organisations that have been established by States to conserve and manage certain fish stocks within a specific region ‘usually in response to specific, often pragmatic, problems related to regional fisheries’.³⁰ They serve as fora for the establishment, implementation and enforcement of legally binding management and conservation measures. As with any international organisation, RFMOs’ success in managing and conserving the resources under their jurisdiction depends on the political will of their member States, who are sovereign States.³¹ RFMOs do not have supranational authority and hence only provide the institutional setting within which States can cooperate to adopt, implement and enforce measures agreed within these RFMOs.³² As emphasised by Barkin and DeSombre, ‘RFMOs generally operate under

Food and Agriculture Organization (FAO) has adopted a series of legal instruments for the management of high seas fisheries and, in the FAO, ‘International Guidelines for the Management of Deep-Sea Fisheries in the High Seas’ (Guidelines, FAO, 2009), requested States to identify vulnerable marine ecosystems (VMEs) in need of protection, that is ecosystems that are either physically or functionally vulnerable to fishing activities (<http://www.fao.org/fishery/topic/166303/en>, accessed: 6 May 2014). In their particularly sensitive sea areas (PSSAs) Guidelines, the IMO provides a process through which States can identify PSSAs. A PSSA is ‘an area that needs special protection through action by IMO because of its significance for recognized ecological, socio-economic, or scientific attributes where such attributes may be vulnerable to damage by international shipping activities. (International Maritime Organization, *Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas*, Res A.982(24), 24th sess, Agenda Item 11, A/24/Res.982 (6 February 2006) para 1.2). The CBD COP has overseen a process in which Contracting Parties have cooperated to identify ecologically or biologically significant areas (EBSAs). These are ‘special areas in the ocean that serve important purposes, in one way or another, to support the healthy functioning of oceans and the many services that it provides’ (<http://www.cbd.int/ebsa/about>, accessed: 6 May 2014).

²⁸ Convention on Biological Diversity, *Decisions Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Fifth Meeting*, UNEP/CBD/COP/5/23 Decision V/6, Conference of the Parties to the Convention on Biological Diversity, 5th meeting (22 June 2000) part A para 1.

²⁹ See Section 3.3.2.2 in Chapter 3.

³⁰ Are K Sydnès, ‘Regional Fishery Organizations: How and Why Organizational Diversity Matters’ (2001) 32(4) *Ocean Development and International Law* 349, 352. RFOs can either have a management mandate that enables them to establish and enforce legally binding management measures, known as RFMOs, or be advisory in nature, known as regional fisheries arrangements (RFAs). This distinction depends upon the nature of their establishment. RFOs can either be established: a) under the FAO constitution; b) outside of the FAO framework but with FAO fulfilling depositary functions; or c) outside of the FAO framework, with no direct link to FAO. RFOs established outside of FAO are independent bodies that have regulatory powers. The ones established under the FAO Constitution fall either under the Article VI category, which means they are advisory bodies that are based on FAO legal texts and its Constitution, or the Article XIV category, which means that they are established by treaty and are dependent to some extent on FAO but are more autonomous than Article VI bodies and have regulatory powers, thus they can establish and enforce legally binding management measures (source: <http://www.fao.org/fishery/topic/16918/en> (accessed on 15 May 2014)).

³¹ FAO Fisheries and Aquaculture Department, ‘The State of World Fisheries and Aquaculture 2012’ (Report, FAO, 2012) (‘*FAO 2012 SOFIA*’), 17; Howard S Schiffman, ‘The Evolution of Fisheries Conservation and Management: A Look at the New South Pacific Regional Fisheries Management Organization in Law and Policy’ (2010) 28(2) *Thomas M. Cooley Law Review* 182, 182.

³² Sydnès, above n 30, 363.

the assumption that [S]tates (or at least member [S]tates) will act as rational users from the perspective of international management'.³³

States exploiting high seas living resources, particularly when done within the same region, are required under international law to cooperate to establish sub-regional or RFOs.³⁴ Under the LOSC, only cooperation towards the establishment of RFMOs is required, not the establishment itself.³⁵ Consequently, by cooperating, States fulfil their duty under the LOSC. The further establishment of a RFMO is a logical extension of that cooperation but is not obligatory under the LOSC. UNFSA formally institutionalises the conservation duty by explicitly requesting States to cooperate in the conservation of straddling and highly migratory fish stocks – and not all high seas living resources as indicated in the LOSC – through the work of RFMOs or regional fisheries management arrangements (RFMAs).³⁶

Although RFOs should be established for the conservation and management of high seas living resources in general under the LOSC, they are explicitly required to be established for straddling and highly migratory fish stocks under the UNFSA. UNFSA particularly requests States to cooperate in good faith and without delay in the establishment of such RFOs for the conservation and management of straddling and highly migratory fish stocks, particularly when fish stocks in a given region are threatened with overexploitation; when a fishery for a fish stock not previously fished is being developed; and in regions where no RFOs exist.³⁷

The UNFSA augments the requirements for the fulfilment of the duty to cooperate further, by requiring States to either become members of RFMOs once they are established or to agree to apply their conservation and management measures, as

³³ J Samuel Barkin and Elizabeth R DeSombre, *Saving Global Fisheries: Reducing Fishing Capacity to Promote Sustainability* (MIT Press, 2013) 39.

³⁴ LOSC art 118.

³⁵ See also: Henriksen, above n 13, 87.

³⁶ UNFSA art 8.1. According to UNFSA, States should establish 'appropriate arrangements', that is 'a cooperative mechanism established in accordance with the Convention and this Agreement by two or more States for the purpose, inter alia, of establishing conservation and management measures in a subregion or region for one or more straddling fish stocks or highly migratory fish stocks' (art 1.d). The regional organisations to be established therefore must be able to establish conservation measures and must also serve other purposes (that is, *inter alia*) that need to be established by States. The voluntary *Code of Conduct* also recommends the establishment of bilateral, sub-regional or RFOs or arrangements for the conservation and management of highly migratory and transboundary fish stocks (art 7.1.3).

³⁷ UNFSA art 8.2 and art 8.5.

cooperative non-members.³⁸ This means that, under UNFSA, States are not required to become active members of RFMOs, but only to participate in the work of such organisations.³⁹ Active and passive memberships are not fully differentiated under UNFSA as both have the same right of access to the fishery resources governed by the RFMOs.⁴⁰ However, as highlighted by Rayfuse, if a State does not honour its duty to cooperate, ‘it forfeits the right for its nationals to participate in the freedom of fishing’.⁴¹ If a State Party to the UNFSA allows unauthorised vessels under its flag to fish within the RFMO Convention Area and to infringe the RFMO’s conservation and management measures, this State is in breach of its cooperation duty.⁴²

In contrast to the LOSC, the UNFSA empowers RFMOs by giving them the mandate to fully conserve and manage highly migratory and straddling fish stocks and the associated and dependent species under their area of competence and by imposing more stringent obligations on States.⁴³ It explicitly gives them the mandate to grant or restrict non-members’ access to the fisheries within their jurisdiction, to establish and control members’ catch limits by allocating quotas and imposing fishing prohibitions on member States flag vessels.⁴⁴ The implementation of conservation and management measures is not a legally binding obligation under the UNFSA as States only have to agree to apply them to fulfil their duty to cooperate. The binding nature of conservation and management measures is more evident at the regional level where RFMOs adopt conservation and management measures which are legally binding on their member States.

RFMOs serve as a cooperative mechanism to facilitate and enhance regional cooperation between States with the aim of conserving and managing high seas living

³⁸ Ibid, art 8.3 differentiates between RFOs with a management mandate and those without. Under this article, States only have to become members of RFOs with a management mandate, that is, they have ‘the competence to establish conservation and management measures (...)’. The requirement to become members is not a firm duty either as States can choose between becoming members or agreeing to apply the conservation measures of the organisation, that is as cooperative non-members, to fulfil their duty to cooperate. It is to be noted that the obligation of States to become members of RFOs applies only to States that have ratified the UNFSA.

³⁹ Ibid art 8.5. Note that the voluntary *Code of Conduct* promotes both the membership and the active participation of States in the work of RFOs (art 7.1.4).

⁴⁰ UNFSA art 8.4.

⁴¹ Rosemary Rayfuse, ‘To Our Children’s Children’s Children: From Promoting to Achieving Compliance in High Seas Fisheries’ (2005) 20(3) *The International Journal of Marine and Coastal Law* 509, 513.

⁴² Ibid.

⁴³ The LOSC on the other hand does not provide any information as to the role and mandate of these RFOs.

⁴⁴ Under the UNFSA, only members of these RFOs are entitled to access the fishery resources under the organisation’s management (art 8.4). Non-members do not have access to the resources under the organisation’s management (art 17.2) and non-parties to UNFSA have access to them under the freedom of fishing that is applicable on the high seas as they cannot be bound by a treaty to which they have not agreed to be bound (*pacta tertiis* principle – this principle is explained in Section 3.3.1 of Chapter 3).

resources, particularly highly migratory and straddling fish stocks.⁴⁵ They also represent important mechanisms for the exchange and sharing of scientific information.⁴⁶ These international cooperation mechanisms are outlined in Part III of UNFSA.⁴⁷ The species coverage of RFMOs ranges from single species management to broader ecosystem mandates. As high seas biodiversity conservation involves the conservation of both high seas living resources and ecosystems, RFMOs with a broader ecosystem mandate are more likely to include and better cover high seas biodiversity conservation in comparison to the ones that focus on particular highly migratory and straddling fish stocks.

The functions of RFMOs include the conduct of scientific assessments, the collection, analysis and dissemination of fisheries information, statistics and data, the establishment, implementation and regulation of conservation and management measures to ensure the long-term sustainability of fish stocks, the adoption of decision-making procedures, the establishment of monitoring, control, surveillance and enforcement measures and the adoption and establishment of participatory rights.⁴⁸ The role and mandate of a particular RFMO is usually determined by the coastal States concerned and any other State fishing for the same stock in the subject region. States establish the scope of the RFMO by agreeing on: a) the stocks to be conserved; b) the geographical scope of the organisation; c) the relationship between this new organisation and other existing ones in the particular region; and d) the ways in which the organisation will obtain scientific advice and will assess the fish stocks under its jurisdiction.⁴⁹

According to the United Nations Food and Agriculture Organization (FAO), 42 RFOs have been established worldwide to date: 16 in the Atlantic Ocean, six in the Indian Ocean, and 14 in the Pacific Ocean as well as one in the Mediterranean.⁵⁰ Five

⁴⁵ LOSC art 118 mentions the establishment of RFOs for the conservation and management of high seas living resources. Although this term is not defined in the LOSC, it involves more than just high seas fish stocks. High seas living resources includes both harvested marine species and marine species that are dependent on or associated with them (art 119). The case of marine mammals is considered separately from high seas living resources (art 120).

⁴⁶ Ibid art 119.2.

⁴⁷ UNFSA art 8.

⁴⁸ Ibid art 10.

⁴⁹ Ibid art 9.

⁵⁰ Considering only RFOs (both with a management and advisory mandate) that cover marine and coastal waters (not inland waters) and not including the *Agreement on the Conservation of Albatrosses and Petrels*, opened for signature 19 June 2001, ATS 5 (entered into force 1 February 2004) ('ACAP'). Source: <http://www.fao.org/fishery/rfb/search/en> (accessed on 15 May 2014). Atlantic Ocean RFOs include: the Fishery Committee for the Eastern Central Atlantic (CECAF), the Ministerial Conference on Fisheries Cooperation among African States Bordering the Atlantic (COMHAFAT-ATLAFCO), the Regional Fisheries Committee

organisations are global or trans-ocean fisheries bodies.⁵¹ Less than half of these RFOs have a management mandate while the rest have an advisory position.⁵² Overall, 28 RFOs have competency that extends to the high seas, with a majority of them having a management mandate.⁵³ RFMOs with a conservation and management mandate do not cover all high seas areas (Figure 4.2 and Figure 4.3). Many RFMOs are established under international conventions and have the authority to adopt legally binding provisions with regard to the conservation and management of fish stocks.

Four RFOs have competency over parts of the Southeast Pacific. IATTC and SPRFMO are RFMOs while CPPS, which is also the RSO for the Southeast Pacific, and the Latin American Organization for Fisheries Development (OLDEPESCA) only have advisory mandates. OLDEPESCA mainly focuses on Central America and has a mandate to work exclusively in marine areas within national jurisdiction. For these reasons, OLDEPESCA is not considered in this thesis.

for the Gulf of Guinea (COREP), the Caribbean Regional Fisheries Mechanism (CRFM), the Joint Technical Commission of the Maritime Front (CTMFM), the Fishery Committee of the West Central Gulf of Guinea (FCWC), the International Commission for the Conservation of Atlantic Tunas (ICCAT), the International Council for the Exploration of the Sea (ICES), the Joint Norwegian-Russian Fisheries Commission (JointFish), the Northwest Atlantic Fisheries Organization (NAFO), the North Atlantic Marine Mammal Commission (NAMMCO), the North Atlantic Salmon Conservation Organisation (NASCO), the North-East Atlantic Fisheries Commission (NEAFC), the South East Atlantic Fisheries Organisation (SEAFO), the Subregional Fisheries Commission (SRFC), the Western Central Atlantic Fishery Commission (WECAFC).

Indian Ocean RFOs include: the Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO), the Indian Ocean Tuna Commission (IOTC), the Regional Organisation for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA), the Regional Commission for Fisheries (RECOFI), the South Indian Ocean Fisheries Agreement (SIOFA), the Southwest Indian Ocean Fisheries Commission (SWIOFC).

Pacific Ocean RFOs include: the Asia-Pacific Fishery Commission (APFIC), the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea (CCBSP), the Permanent Commission for the South Pacific (CPPS), the Forum Fisheries Agency (FFA), the Inter-American Tropical Tuna Commission (IATTC), the International Pacific Halibut Commission (IPHC), the North Pacific Anadromous Fish Commission (NPAFC), the North Pacific Fisheries Commission (NPFC), the North Pacific Marine Science Organisation (PICES), the Pacific Salmon Commission (PSC), the Southeast Asian Fisheries Development Center (SEAFDEC), the Secretariat of the Pacific Community (SPC), the South Pacific Regional Fisheries Management Organisation (SPRFMO), the Western and Central Pacific Fisheries Commission (WCPFC).

The General Fisheries Commission for the Mediterranean (GFCM) has competency over the Mediterranean, the Black Sea and connecting waters.

⁵¹ Global and trans-ocean RFOs include: the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), the Commission for the Conservation of Southern Bluefin Tuna (CCSBT), the International Whaling Commission (IWC), the Latin American Organization for Fisheries Development (OLDEPESCA), the Central America Fisheries and Aquaculture Organization (OSPESCA). Source: <http://www.fao.org/fishery/rfb/search/en> (accessed on 15 May 2014).

⁵² 16 of these RFOs have a management mandate while 26 have an advisory position.

⁵³ 16 out of 28 RFOs with a high seas mandate are management bodies. These are: IWC, CCAMLR, CCSBT, IATTC, IPHC, GFCM, NPAFC, SPRFMO, WCPFC, IOTC, SIOFA, ICCAT, NAFO, NASCO, NEAFC, SEAFO.

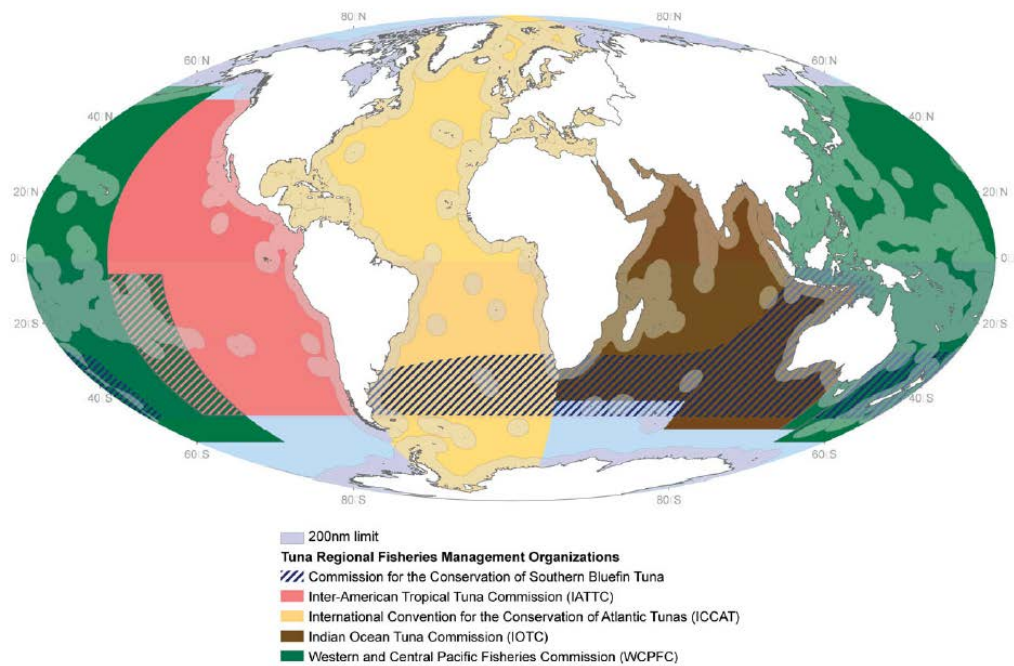


Figure 4.2: Geographical Coverage of RFMOs Responsible for the Management of Tuna and Tuna-like Species
(Source: Ban et al 2014)⁵⁴

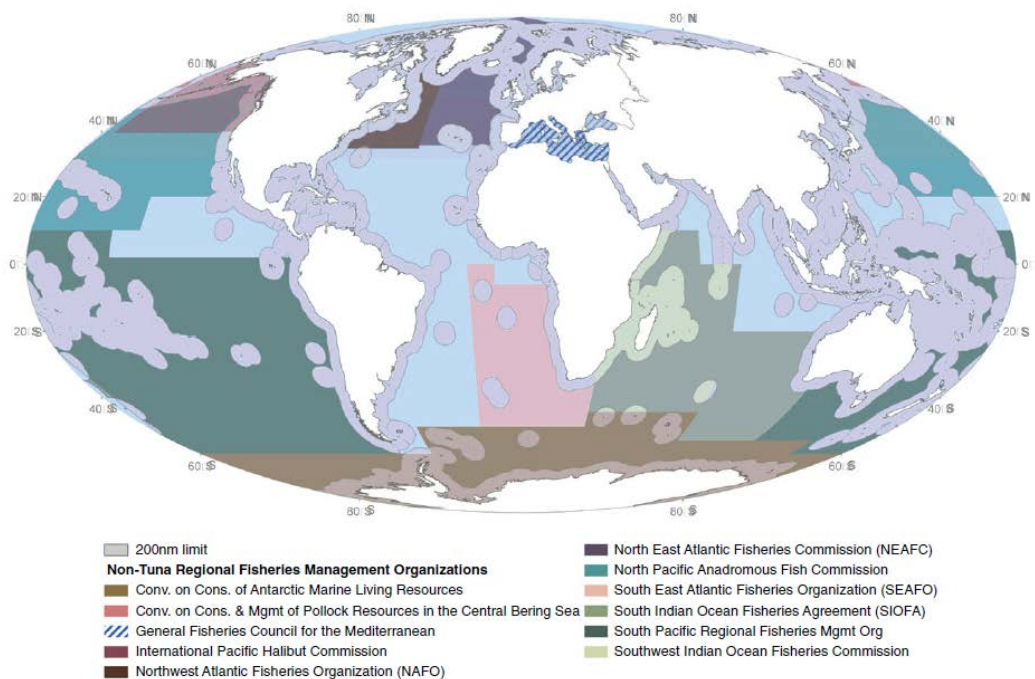


Figure 4.3: Geographical Coverage of RFMOs Responsible for the Management of Non-Tuna like Species
(Source: Ban et al 2014)⁵⁵

⁵⁴ Source: Ban et al, above n 24, 45.

⁵⁵ Source: Ban et al, above n 24, 44. The North Pacific Fisheries Commission (NPFC) is not shown on this map.

4.2.2.1 Rights and Duties of Members of RFMOs

Any State, regardless of whether they are parties to the LOSC or the UNFSA, can become a member of a RFMO. Each RFMO will be established under an agreement that requires parties to fulfil certain membership requirements. However, these requirements must be in line with the terms of participation set forward in the UNFSA, namely that there should be no discrimination against any State applying for a membership and that all States having a real interest in the fisheries should be allowed to become members of the RFMO.⁵⁶ Although there is no legal definition of ‘real interest’, States generally have to be either bordering coastal States or have been fishing in the area for a couple of years to be eligible to become members of RFMOs.⁵⁷

Only States that have agreed to become members of RFMOs are bound by the rules and regulations established by such institutions. Cooperative non-members are States that agree to apply the conservation and management measures of a RFO without formally taking part in the institution’s decisions and management. The benefits that States get out of a full membership to RFMOs are manifold. Firstly, they are entitled to access the fishery resources under the jurisdiction of the organisation of which they are members, thereby securing a fair and equitable share of the fish stocks under the institution’s management.⁵⁸ Secondly, they actively participate in the organisation’s decisions thus ensuring that their rights and wishes, particularly with regard to management and conservation measures and quota distribution, are taken into account. Lastly, together with the other member States, they form a more powerful lobby against any non-member State that may overfish or undermine the measures put in place by the RFMO. This leads to direct, as well as collective benefits to States, particularly in the case of fighting illegal, unreported and unregulated (IUU) fishing.⁵⁹

⁵⁶ UNFSA art 8.3.

⁵⁷ See, eg: Erik Jaap Molenaar, ‘The Concept of “Real Interest” and Other Aspects of Co-operation through Regional Fisheries Management Mechanisms’ (2000) 15 *International Journal of Marine and Coastal Law* 475.

⁵⁸ UNFSA art 8.4.

⁵⁹ United Nations Food and Agriculture Organization, ‘International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing’ (2001) (*IPOA-IUU*) art 3 defines IUU fishing as: ‘Illegal fishing refers to activities: [a)] conducted by national or foreign vessels in waters under the jurisdiction of a State, without the permission of that State, or in contravention of its laws and regulations; [b)] conducted by vessels flying the flag of States that are parties to a relevant [RFMO] but operate in contravention of the conservation and management measures adopted by that organization and by which the States are bound, or relevant provisions of the applicable international law; or [c)] in violation of national laws or international obligations, including those undertaken by cooperating States to a relevant [RFMO]. Unreported fishing refers to fishing activities: [a)] which have not been reported, or have been misreported, to the relevant national authority, in contravention of national laws and regulations; or [b)] undertaken in the area of competence of a relevant [RFMO] which have not been reported or have been misreported, in contravention of the reporting procedures of that organization. Unregulated fishing refers to fishing activities: [a)] in the area of application of a relevant [RFMO] that are conducted by vessels without nationality, or by those flying the flag of a State not party to that organization, or by a fishing entity, in a manner that is not consistent with or contravenes the conservation and management measures of that organization; or [b)] in areas or for fish stocks in relation to which there are no applicable

The UNFSA provides legally binding obligations for its States Parties with regard to the functioning of RFMOs.⁶⁰ RFMO members have to take part in the functioning of the relevant RFMO and cooperate with other member States notably in the adoption of international minimum standards and the establishment of conservation and management measures for the long-term sustainability of straddling and highly migratory fish stocks as well as cooperative mechanisms for the effective monitoring, control, surveillance and enforcement of these measures.

They must also undertake scientific assessments and monitor the state of the fish stocks under the RFMO's jurisdiction and how fishing impacts them. Furthermore, member States must agree on participatory rights and the distribution of fish catch and effort amongst existing member States. They must also take into account how this fish catch and effort distribution will be affected by the participation in the fishery of new member States. States must define the terms of reference for the RFMO by adopting rules of procedure for decision-making and a dispute settlement process.⁶¹ Conservation and management measures established by each RFMO must be publicly displayed. In particular, States are obliged to take measures against non-members that undermine the conservation and management efforts of RFMOs.⁶²

States Parties to UNFSA must also cooperate in conserving biodiversity in the marine environment. However, the methodology to be used for such protection is not outlined in the UNFSA.⁶³ A precautionary approach needs to be taken by both States and RFMOs.⁶⁴ Member States must continuously improve the effectiveness of these organisations by strengthening their mandate and scope to ensure the conservation and management of straddling and highly migratory fish stocks.⁶⁵ In practice, this involves a regular performance review of the organisation and necessary adjustments to ensure that the organisation's mandate reflects modern conservation and management norms.⁶⁶

conservation or management measures and where such fishing activities are conducted in a manner inconsistent with State responsibilities for the conservation of living marine resources under international law.

⁶⁰ The UNFSA is the only legal agreement that contains legally binding provisions for States parties regarding their duties and rights as members of RFMOs. Even if some States have not signed the UNFSA, many RFMOs have updated their conventions to include provisions from the UNFSA so that these are binding on non-parties even without UNFSA ratification. See Section 4.2.2.2 of this chapter.

⁶¹ *UNFSA* art 10.

⁶² *Ibid* art 17.4.

⁶³ *Ibid* art 5g.

⁶⁴ *Ibid* art 6.

⁶⁵ *Ibid* art 13.

⁶⁶ Not all RFMOs have undertaken performance reviews. To date, CCAMLR (in 2008), CCSBT (in 2008), ICCAT (in 2007-2008), IOTC (in 2008-2009), NAFO (in 2012), NASCO (in 2012), NEAFC (in 2006 and 2014), GFCM (in 2009-2010), SEAFO (in 2010)

4.2.2.2 Rights and Duties of Non-Members to RFMOs

One of the main factors affecting the performance of RFMOs is the relationship between non-members and these organisations. Non-members, by not taking part in the RFMO, can undermine the conservation and management efforts of the organisation and its member States. Convincing non-members to join the work of RFMOs either as full members or as cooperating non-members is a key challenge for these organisations. For a State to become a member of a particular RFMO there must be more benefits to the State as a member than it would obtain by remaining a non-member. In practice, the notion of being a free-rider is usually more beneficial to most States as they do not have to give up any of their rights. They can continue to fish on the high seas without being limited by quotas under the LOSC principle, albeit now limited, of freedom of fishing.⁶⁷

Non-members fall into two categories: a) States that are Parties to the UNFSA and therefore bound by its provisions but are not members of any relevant RFMO; b) States that are neither members of any relevant RFMO nor Parties to the UNFSA and consequently that are not bound by any of these treaty provisions.⁶⁸ States that have not ratified the UNFSA are not obliged to become members of RFMOs as this is not explicitly required under the LOSC.

According to the UNFSA, only members and cooperative non-members of RFMOs are entitled to access the fishery resources under the organisation's management.⁶⁹ Non-members do not have access to these fishery resources and must refrain from fishing in areas under the management of RFMOs of which they are not members, or else they are in breach of their cooperation duty under the LOSC and international law and this would make them liable under international law.⁷⁰

and WCPFC (2013) have undertaken such reviews. The modernising of RFMOs is a priority that was highlighted at the 2010 United Nations UNFSA Review Conference.

⁶⁷ LOSC art 87.1.e.

⁶⁸ See, eg: Erik Franckx, 'Pacta Tertiis and the Agreement for the Implementation of the Straddling and Highly Migratory Fish Stocks Provisions of the United Nations Convention on the Law of the Sea' (2000) 8 *Tulane Journal of International and Comparative Law* 49 for a detailed analysis on the relationship between *pacta tertiis* and the UNFSA.

⁶⁹ UNFSA art 8.4. See, eg: Rosemary Rayfuse, *Regional Allocation Issues or Zen and the Art of Pie Cutting* (2007) UNSW Legal Research Series 10 <<http://www.austlii.edu.au/au/journals/UNSWLRS/2007/10.html>> (accessed: 1 December 2014); Robin Allen, James Joseph and Dale Squires, *Conservation and Management of Transnational Tuna Fisheries* (Wiley-Blackwell, 2010) for more information on allocation issues.

⁷⁰ UNFSA art 17.2; Michael W Lodge et al, 'Recommended Best Practices for Regional Fisheries Organizations: Report of an independent panel to develop a model for improved governance by Regional Fisheries Management Organizations' (Report, Chatham House, 2007) 6; Rosemary Rayfuse, 'Non-Flag State Enforcement and Protection of the Marine Environment: Responding to IUU Fishing' in Myron H Nordquist, Tommy T B Koh and John Norton Moore (eds), *Freedom of Seas, Passage Rights and the 1982 Law of the Sea Convention* (Martinus Nijhoff, 2009) 573, 581.

Even if States have ratified the UNFSA, the practicalities of denying access to these resources to the flag vessels of all States is difficult.⁷¹ Being shared resources, they are unowned and cannot be appropriated by any States or organisations. The only options that RFMOs have to restrict the access of third parties to the fishery resources in question are to: a) adopt stringent port State and flag State measures to deter non-members; b) implement a reciprocal boarding and inspection scheme on the high seas between parties to the RFMO; and c) request its active members to promote the membership to other non-members.⁷² Non-members, although not directly involved in RFMOs, have the obligation to cooperate in the conservation and management of these stocks.⁷³ They have to provide relevant catch and effort data to the RFMO and take part in the negotiations for the establishment of management and conservation measures.⁷⁴ They also should not undermine the work undertaken by the RFMOs.⁷⁵ Non-members can decide to become cooperating non-members under a RFMO by agreeing to apply the management and conservation measures established by the RFMO.⁷⁶

States which are both non-parties to the UNFSA and non-members of RFMOs cannot be bound by these UNFSA and RFMO agreement obligations as the third party rule applies, that is, States cannot be bound by a treaty to which they have not agreed to be bound, and therefore can have access to relevant high seas fisheries under the freedom of fishing provision in Article 87(1)(e) of the LOSC.⁷⁷ The freedom of fishing is limited by other more general obligations, as discussed in Chapter 3.⁷⁸ Third parties have obligations under international law to protect and preserve the marine environment and

⁷¹ LOSC art 119.3 also provides that 'States concerned shall ensure that conservation measures and their implementation do not discriminate in form or in fact against the fishermen of any State'.

⁷² UNFSA art 17.3, art 17.4, art 20, art 21 and art 23; IPOA-IUU para 83. This reciprocal boarding and inspection scheme will only target delinquent member States vessels as well as vessels of flag States that are parties to the UNFSA. This scheme has for instance been implemented under the WCPFC.

⁷³ UNFSA art 17.1; *Code of Conduct* art 7.1.5; IPOA-IUU para 79.

⁷⁴ Henriksen, above n 13, 89: 'the obligation to negotiate in good faith with the other states on the conservation measures necessary to conserve high seas living resources clearly requires third-party participation in the process. Further, the good faith negotiation obligation can be read as implying a right for third states to influence measures adopted by an RFMO'.

⁷⁵ UNFSA art 17; *Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas*, opened for signature 29 November 1993, ATS 26 (entered into force 24 April 2003) ('*Compliance Agreement*') art III.1: general responsibility of flag States to 'take such measures as may be necessary to ensure that fishing vessels entitled to fly its flag do not engage in any activity that undermines the effectiveness of international conservation and management measures'.

⁷⁶ UNFSA art 8.3.

⁷⁷ Under the *pacta tertiis* principle, third parties are not bound by a treaty without their consent (*Vienna Convention on the Law of Treaties*, opened for signature 23 May 1969, ATS 2 (entered into force 27 January 1980) ('*Vienna Convention*') art 34). The consent can be expressed either in writing (art 35) or can be assumed if the State does not indicate to the contrary (art 36), that is for instance if it integrates elements of the treaty into its national legislation or applies these rules de facto within its national jurisdiction. Also, the *pacta tertiis* becomes invalid when legislation becomes an international customary law rule and therefore legally binding on third States (art 38). Under this *pacta tertiis* principle, decisions taken by RFOs are not binding on third States.

⁷⁸ See Section 3.2 of Chapter 3.

to conserve its living resources and biodiversity.⁷⁹ One of these obligations includes taking into account the interests of coastal States when fishing on the high seas.⁸⁰ This means that non-member States fishing on the high seas are under a general obligation to cooperate and work together to ensure that conservation measures are applied both within and beyond national jurisdiction in the region and that they are compatible for marine mammals, anadromous and catadromous species, straddling marine species and the highly migratory species listed in Annex I of the LOSC.

Parties to the UNFSA are encouraged to promote the agreement to non-parties and deter them from activities that may undermine the implementation of UNFSA.⁸¹ Some third States, although not parties to UNFSA, might recognise some of its provisions by enacting them into their national laws or adhering to them within their national jurisdiction. In this case, these States may not necessarily undermine the functioning of RFMOs. The degree to which a particular State's law incorporates UNFSA requirements is a key determinant of the degree of cooperation between these third parties and RFMO members. Even without incorporation of UNFSA provisions into national law, the relationship between third States and RFMO member States is governed by the general obligations to conserve high seas living resources and protect and preserve the marine environment under the LOSC.⁸²

As will be shown in Section 4.6.3 of this chapter, all but two States that are currently fishing in the Southeast Pacific region are members of the applicable RFMO for the fish type that they reportedly catch.⁸³ Only Chile and Japan have an incomplete RFMO membership according to the composition of their current catches and, in the case of Chile, such a membership assessment is actually difficult to make as there is no differentiation in the FAO data between fish caught within and beyond national jurisdiction. Even though several States currently fishing in the Southeast Pacific are not parties to the LOSC or the UNFSA, as they are members of RFMOs, they are bound by the RFMO rules and therefore indirectly bound by LOSC and UNFSA provisions

⁷⁹ LOSC art 117, art 118, art 119 and art 192; CBD art 5.

⁸⁰ LOSC art 116.

⁸¹ UNFSA art 33.

⁸² Henriksen, above n 13, 87.

⁸³ This analysis was done with data obtained from FAO Fisheries and Aquaculture Department, Statistics and Information Service FishStatJ: Universal software for fishery statistical time series. Copyright 2011. FishstatJ Version 2.1.1 was used to analyse the data. This version includes the FAO Capture Production data 1950-2012 released in March 2014. The database was accessed on 8 May 2014 (source: <http://www.fao.org/fishery/statistics/software/fishstatj/en>).

(Appendices C and D).⁸⁴ According to the RFMO and treaty membership analyses for States currently fishing in the Southeast Pacific, there are no identified third States in this region.⁸⁵ As highlighted by McDorman, State sovereignty and political will influence the functioning of RFMOs, particularly their decision making.⁸⁶ Hence, non-UNFSA party States may influence decisions adopted by their respective RFMOs so that these decisions ‘may not be fully consistent with the wording or spirit of UNFSA’.⁸⁷

4.2.2.3 Cooperation among and between Regional Institutions and other International Bodies

The performance of RFMOs in the conservation and management of high seas living resources is also dependent on the cooperation and interaction of individual RFMOs with other international and regional organisations that have a similar scope or mandate. There are no direct legal obligations for regional institutions to collaborate and cooperate among and between themselves. The legal duty to cooperate applies to individual States but, as States have to cooperate either directly or through regional institutions, this implicitly means that the institutions of which these States are members also need to cooperate and collaborate to fulfil their conservation obligations.⁸⁸ The voluntary 1995 FAO *Code of Conduct for Responsible Fisheries* (Code of Conduct) is the only instrument that explicitly mentions the need for RFOs to cooperate and coordinate their fisheries management work.⁸⁹ The need for State and institutional cooperation both at the international and regional levels has been further highlighted in the UNGA Resolutions on Oceans and the Law of the Sea and in the *Ad Hoc Open-ended Informal Working Group to Study Issues Relating to the Conservation and*

⁸⁴ Current fishing States not parties to the LOSC are: Colombia, Peru and Venezuela. Current fishing States not parties to the UNFSA are: Chile, China, Colombia, Ecuador, Guatemala, Mexico, Nicaragua, Peru, Vanuatu, and Venezuela. See Section 4.6.3 of this chapter for more information on the membership analysis. For more information on the relationship between Latin American States and the LOSC and UNFSA, see, eg: Francisco Orrego Vicuña, ‘La Aplicación de la Convención de las Naciones Unidas Sobre el Derecho del Mar en el Derecho y la Práctica de América Latina’ (1994) *Tecnos* 337; Andy Thorpe and Elizabeth Bennett, ‘Globalisation and the Sustainability of World Fisheries: A View from Latin America’ (2001) 16 *Marine Resource Economics* 143; Astrid Espaliat Larson and María José Henríquez, ‘Conflictos Pesqueros Contemporáneos: la Búsqueda de una Gestión Racional’ (2003) 36(143) *Estudios Internacionales* 127; *Declaración Conjunta de los Países Miembros de la CPPS, OLDEPESCA y OSPESCA para la Reanudación de la Conferencia de Revisión del Acuerdo de Naciones Unidas Sobre las Poblaciones de Peces Transzonales y las Poblaciones de Peces Altamente Migratorios (Acuerdo de Nueva York)* (5 May 2010).

⁸⁵ List of current fishing States derived from the latest and most current FAO Capture Production data 1950-2012 released in March 2014. Source: <http://www.fao.org/fishery/statistics/software/fishstatj/en> (accessed: 8 May 2014).

⁸⁶ Ted L. McDorman, ‘Implementing Existing Tools: Turning Words into Actions – Decision-Making Processes of Regional Fisheries Management Organisations (RFMOs)’ (2005) 20(3) *The International Journal of Marine and Coastal Law* 423.

⁸⁷ *Ibid.*, 427.

⁸⁸ See, eg: CBD art 5; UNFSA art 8.1.

⁸⁹ *Code of Conduct* art 7.3.4.

Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction (BBNJ Working Group) reports.⁹⁰

Most RFMOs have provisions in their conventions on cooperation with other international and regional bodies. Cooperation between regional institutions usually takes place through the development of memoranda of understanding (MoUs), the exchange of data, information and best practices, cross-participation in each others' meetings, and cooperation in the application of management and compliance measures (see Section 4.5 of this chapter).⁹¹ For instance, many RFMOs are cooperating to eliminate IUU fishing through the development of a more global IUU fishing vessel list.⁹² Several processes also exist to enhance collaboration and cooperation amongst regional institutions. The Regional Fishery Body Secretariats Network (RSN) provides a forum for all RFOs, including RFMOs, to meet, exchange views and cooperate.⁹³ Also under the Kobe Process, tuna RFMOs meet regularly with a view to harmonising their activities regarding the management of tuna fisheries worldwide.⁹⁴

4.3 Regional Institutional Framework of the Southeast Pacific

4.3.1 Inter-American Tropical Tuna Commission (IATTC)

IATTC, one of the oldest RFMOs and the first tuna RFMO, was established by the 1949 *Convention for the Establishment of an Inter-American Tropical Tuna Commission* signed between the Governments of the United States of America (USA) and Costa

⁹⁰ See, eg: United Nations General Assembly, *Oceans and the Law of the Sea: Report of the Secretary-General*, GA Res 67/78, 67th sess, Agenda Item 75 (a), A/67/78 (18 April 2013) para 246 and para 262; United Nations General Assembly, *Oceans and the Law of the Sea: Report of the Secretary-General*, GA Res 68/70, 68th sess, Agenda Item 76 (a), A/68/70 (27 February 2014) para 260 and para 275; Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 8 June 2012 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/67/95, United Nations General Assembly, 67th sess, Item 76(a) of the preliminary list (13 June 2012) ('2012 BBNJ Report') para. 13 and para 38.; Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 5 May 2014 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/69/82, United Nations General Assembly, 69th sess, Item 75(a) of the preliminary list (5 May 2014) ('2014a BBNJ Report') para 8.

⁹¹ International and regional organisations with an interest in fisheries management are to be allowed to take part in meetings of RFOs (UNFSA art 12.2; *Code of Conduct* art 7.1.6.).

⁹² The five tuna RFMO are collaborating in this regard and their IUU vessel lists are available on their common website: <http://www.tuna-org.org/vesselneg.htm> (accessed: 3 January 2015).

⁹³ The first four meetings were known as the meetings of 'FAO and NON-FAO Regional Fishery Bodies or Arrangements' and took place in 1999, 2001, 2003 and 2005. The meeting title was changed to 'Regional Fishery Body Secretariats Network (RSN)' at the fifth meeting in 2007. Since then, the RFO secretariats have met three more times, in 2009, 2011 and 2012. Source: <http://www.fao.org/fishery/rsn/en> (accessed on 15 May 2014). During these meetings, the Secretariats of the various RFOs can discuss and share information and experience with regard to their management and conservation challenges. The main concern across RFOs remain IUU fishing (FAO Fisheries and Aquaculture Department, 'The State of the World Fisheries and Aquaculture 2014' (Report, FAO, 2014) ('FAO 2014 SOFIA') 176).

⁹⁴ This Process regroups the following tuna RFMOs: IATTC, CCSBT, ICCAT, IOTC, and WCPFC. The first meeting took place in 2007. Two others have taken place since in 2009 and 2011. Source: <http://www.tuna-org.org/meetingspast.htm> (accessed: 15 May 2014).

Rica.⁹⁵ The original purpose of this bilateral convention was to study the populations and monitor the state of the fisheries of yellowfin and skipjack tuna as well as to adopt joint actions to maintain these fish stocks' populations.⁹⁶ The 1949 Convention was considerably updated and strengthened by the adoption of the 2003 *Convention for the Strengthening of the Inter-American Tropical Tuna Commission established by the 1949 Convention between the United States of America and Costa Rica* (IATTC Antigua Convention). It incorporates modern conservation principles, such as the precautionary approach promoted in the 1992 *Rio Declaration*, and the need for compatibility between conservation and management measures for the high seas and the EEZ.⁹⁷

The 2003 IATTC Antigua Convention incorporates provisions reflecting more modern fisheries and biodiversity conservation agreements and declarations adopted in the 1990s and early 2000s, including the 1992 *Agenda 21* and *Rio Declaration*, the 1993 *Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas* (Compliance Agreement), the 1995 *Code of Conduct* and UNFSA as well as the 2002 *Johannesburg Plan of Implementation* (JPOI) agreed at the World Summit on Sustainable Development (WSSD).⁹⁸ Since its adoption, the 2003 IATTC Antigua Convention has officially replaced the 1949 Convention. All Parties to the 1949 Convention remain members of the Commission and Parties to the 2003 IATTC Antigua Convention, unless they have officially cancelled their membership.⁹⁹ To date, 21 States and four cooperating non-members are members of the IATTC.¹⁰⁰

⁹⁵ Convention for the Establishment of an Interamerican Tropical Tuna Commission, opened for signature 31 May 1949 (entered into force 3 March 1950) ('IATTC 1949 Convention').

⁹⁶ *IATTC 1949 Convention* art 2. IATTC member States recognised early on that the region needed a legal agreement specifying the rights and obligations of countries when fishing in the Eastern Pacific Ocean (EPO). The negotiations around the development of a new or modified tuna agreement started in 1977. The *Eastern Pacific Ocean Tuna Fishing Agreement*, opened for signature 15 March 1983 (not yet in force) was designed as a complementary treaty to the IATTC and consisted on legally binding rules regarding the issuance of fishing licence for the Eastern Pacific tuna fishery. However, this agreement did not achieve the number of ratification necessary to bring it into force.

⁹⁷ Convention for the Strengthening of the Inter-American Tropical Tuna Commission established by the 1949 Convention between the United States of America and the Republic of Costa Rica, opened for signature 27 June 2003 (entered into force 27 August 2010) ('*IATTC Antigua Convention*'). To date, 15 of the member States have ratified the Antigua Convention. These are: Belize, Canada, China, Costa Rica, El Salvador, European Union, France, Guatemala, Japan, Kiribati, Republic of Korea, Mexico, Nicaragua, Panama and Taiwan Province of China. Source: <https://www.iattc.org/IATTCdocumentationENG.htm> (accessed: 15 May 2014).

⁹⁸ See Section 3.3.2 of Chapter 3.

⁹⁹ *IATTC Antigua Convention* art 31.

¹⁰⁰ The members of the IATTC are: Belize, Canada, China, Colombia, Costa Rica, Ecuador, El Salvador, European Union, France, Guatemala, Japan, Kiribati, Republic of Korea, Mexico, Nicaragua, Panama, Peru, Taiwan Province of China, USA, Vanuatu and Venezuela. Source: <https://www.iattc.org/HomeENG.htm> (accessed: 15 May 2014). The cooperating non-members of IATTC are: Bolivia, Honduras, Indonesia and Liberia. Source: <https://www.iattc.org/HomeENG.htm> (accessed: 26 December 2014).

The IATTC was established outside of the FAO framework and is an independent body with regulatory powers to manage tuna, tuna-like species and other bycatch fish species within the Eastern Pacific Ocean (EPO) (Figure 4.4), with the objective of their long-term conservation and sustainable use.¹⁰¹

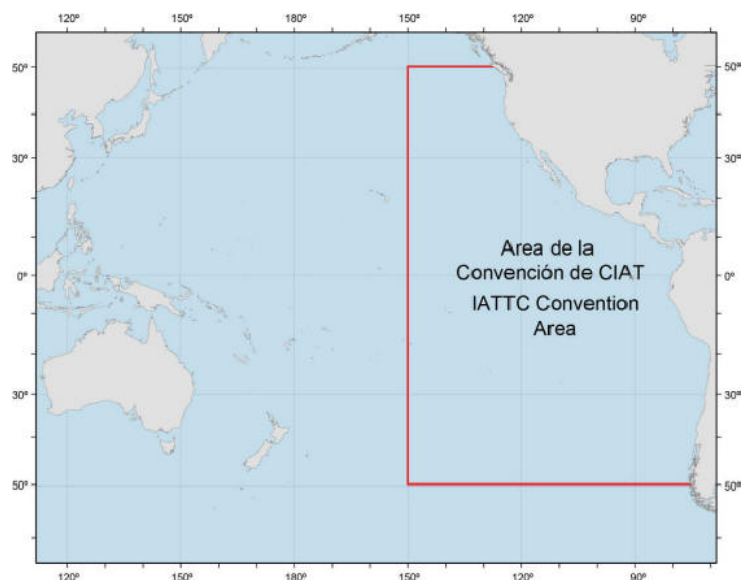


Figure 4.4: IATTC Convention Area covers both Areas within and beyond National Jurisdiction

(Source: IATTC Website)¹⁰²

IATTC is also the Secretariat for the *Agreement on the International Dolphin Conservation Program* (AIDCP), which aims to reduce the levels of dolphin bycatch and mortality in the tuna purse-seine fishery to levels close to nil.¹⁰³ Outside of its scope, IATTC collaborates through the Kobe Process with the other four tuna RFMOs to harmonise management and enforcement measures at the global level.¹⁰⁴ It is also involved in the Global Environment Facility (GEF)-funded global project ‘Sustainable Management of Tuna Fisheries and Biodiversity Conservation in ABNJ’. This is a five year project, which aims to ‘achieve sustainable and efficient tuna fisheries production

¹⁰¹ IATTC *Antigua Convention* art 2 and art 3. The IATTC has its headquarters in San Diego (California), USA. Its official languages are English and Spanish.

¹⁰² www.iattc.org/EPOMap.htm (accessed: 4 April 2013).

¹⁰³ This agreement, which entered into force in 1999 and replaced the *La Jolla Agreement for the Reduction of Dolphin Mortality in the Eastern Pacific Ocean*, opened for signature 21 April 1992 (entered into force 21 April 1992), is legally binding on the States that have ratified it, namely: Belize, Colombia, Costa Rica, Ecuador, El Salvador, European Union, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, USA, Vanuatu and Venezuela. Bolivia agreed to provisionally apply the provisions of this Agreement.

¹⁰⁴ See Section 4.2.2.3 of this chapter.

and biodiversity conservation through the systematic application of an ecosystem approach'.¹⁰⁵

The IATTC is composed of a Commission, which does the decision-making, as well as a Reviewing Committee and a Scientific Advisory Committee, both with an advisory role to the Commission. The Reviewing Committee reviews and monitors member States' compliance with the measures adopted by the Commission.¹⁰⁶ The Scientific Advisory Committee provides advice and recommendations to the Commission on scientific matters and is also responsible for the promotion and facilitation of cooperation with other relevant scientific institutions and between member States of the Commission.¹⁰⁷ All decisions taken by the Commission have to be taken by consensus and are legally binding on member States.¹⁰⁸

IATTC imposes implementation, compliance and enforcement regulations on its member States. Member States must adopt necessary measures, including compliance and enforcement measures, to ensure that their nationals fishing in the IATTC Area adhere to the conservation and management measures adopted and do not undertake any activity that may undermine the purpose of the IATTC Antigua Convention or the effectiveness of its measures.¹⁰⁹ This includes the need to determine which vessels are allowed to fish for stocks covered by the IATTC Antigua Convention and to create relevant national law and regulations to ensure the effective application and respect for the IATTC Antigua Convention.¹¹⁰ Member States must provide the Commission with

¹⁰⁵ This is one of four projects funded by the GEF under the Global Sustainable Fisheries Management and Biodiversity Conservation in the Areas Beyond National Jurisdiction Programme, now renamed Common Oceans Programme that will be implemented between 2014 and 2018. The other projects are: 'Sustainable Use of Deep-Sea Living Resources and Biodiversity', 'Oceans Partnership for Sustainable Fisheries and Biodiversity Conservation', and 'Strengthening Global Capacity to Effectively Manage ABNJ'. This ABNJ Tuna Project is the largest of the projects and totals a budget of 178 million USD. It is under the supervision of FAO as the implementing agency for the GEF and involves numerous project partners, including the five tuna RFMOs. This project has four components: 1) Promotion of Sustainable Management (including Rights-Based Management) of Tuna Fisheries, in Accordance with an Ecosystem Approach; 2) Strengthening and Harmonizing Monitoring, Control and Surveillance (MCS) to Address Illegal, Unregulated and Unreported Fishing (IUU); 3) Reducing Ecosystem Impacts of Tuna Fishing; 4) Information and Best Practices Dissemination and M&E (Common Oceans, 'Report of the Inception Workshop: Sustainable Management of Tuna Fisheries' (Workshop Report, FAO, 2014)). See: <http://www.commonoceans.org/tuna-biodiversity/en/> (accessed: 25 November 2014).

¹⁰⁶ *IATTC Antigua Convention* annex 3.

¹⁰⁷ *Ibid* annex 4.

¹⁰⁸ *Ibid* art 9. All measures and obligations adopted under the IATTC are legally binding on both member States and fishing entities which have agreed to be bound by these measures (art 19 and art 21). The word 'fishing entities' has been used for the first time in the UNFSA and subsequently in other fisheries instruments such as the *Code of Conduct* and the *IPOA IUU*. This term is used as a reference to Taiwan and, since Taiwan's status is debated under international law, it is a way for it to become a member of RFOS and take part in international fisheries agreements. See, eg: Warwick Gullett, 'Fishing industry: Taiwan' in Mary Bagg (ed), *Berkshire Encyclopaedia of China: Modern and Historic Views of the World's Newest and Oldest Global Power* (Berkshire Publishing, 2009) 824; Martin Tsamenyi, 'The Legal Substance and Status of Fishing Entities in International Law' (2006) 37(2) *Ocean Development and International Law* 123.

¹⁰⁹ *IATTC Antigua Convention* art 18 and art 20.

¹¹⁰ *Ibid*.

relevant information outlining how such measures are implemented, and which legal and administrative actions have been implemented for the compliance of conservation and management measures.¹¹¹ Furthermore, member States have to share their biological and statistical fisheries data with the Commission and deliver a report of activities regarding their tuna-fishing vessels every six months.¹¹²

Member States fully exercise their sovereignty and sovereign rights within their own jurisdiction but must ensure that all vessels found within the limits of their jurisdiction, regardless of nationality, comply with the measures and other legal provisions established by IATTC.¹¹³ IATTC member States are not only responsible for ensuring that their nationals comply with the IATTC measures but also that other member States, as well as non-member States, do not engage in activities that would undermine the objectives of the IATTC Antigua Convention. This includes cooperation between member States to monitor and report illegal activities undertaken by other members and non-members.¹¹⁴ IATTC extends the duty to cooperate by requesting the application of cooperative measures among its members to ensure compliance with its conservation measures by coastal States, flag States and port States bordering or fishing within the Convention Area.¹¹⁵ IATTC and its member States are to encourage non-members that are either coastal States bordering the Convention Area or flag States of fishing vessels fishing in the Convention Area to become members of the IATTC Antigua Convention or to adopt rules consistent with the ones adopted under IATTC.¹¹⁶

4.3.2 Comisión Permanente del Pacífico Sur (CPPS)

CPPS was established in 1952 by the *Convention on the Organisation of the Permanent Commission of the Conference on the Use and Conservation of the Marine Resources of the South Pacific*, signed by Chile, Ecuador and Peru at the First Conference on the Use and Conservation of the Marine Resources of the South Pacific.¹¹⁷ Known in English as

¹¹¹ Ibid art 18.

¹¹² Ibid.

¹¹³ Ibid art 17 and 18.

¹¹⁴ Ibid art 26. In this view, State members have to cooperate together and make each other aware of illegal activities undertaken by their flag States and, upon such report, need to carry out a thorough investigation and apply 'sanctions of sufficient gravity' that may include the 'refusal, suspension or withdrawal of the authorization to fish' (art 8). The Commission can also officially request member States to take actions against vessels engaged in illegal activities in the Convention Area until 'appropriate action is taken by the flag State to ensure that such vessels do not continue those activities' (art 10).

¹¹⁵ Ibid art 18.

¹¹⁶ Ibid art 26.

¹¹⁷ *Convenio sobre Organización de la Comisión Permanente de la Conferencia sobre Explotación y Conservación de las Riquezas Marítimas del Pacífico Sur* [Convention on the Organisation of the Permanent Commission of the Conference on Exploitation and

the Permanent Commission for the South Pacific, CPPS is a legal entity.¹¹⁸ The fourth member State of the Commission, Colombia, joined CPPS in 1979.¹¹⁹

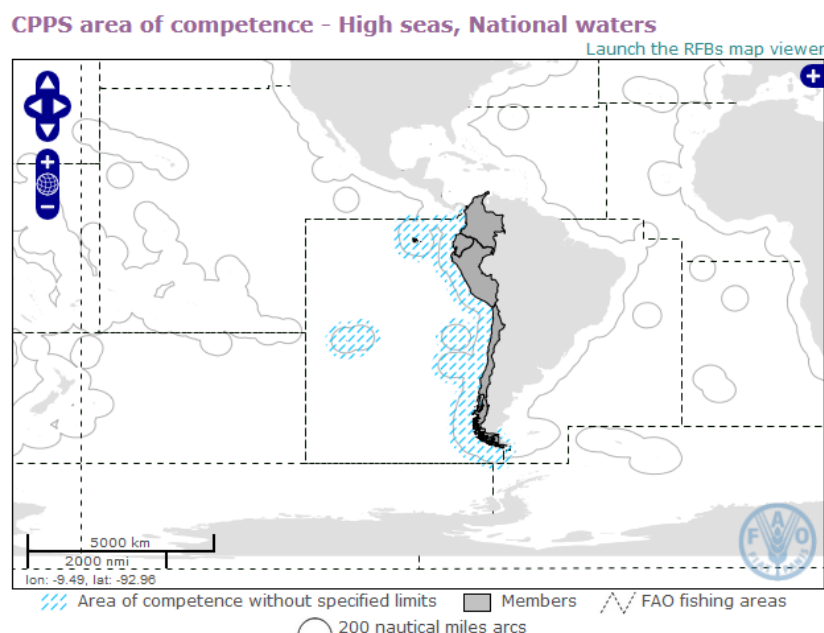


Figure 4.5: CPPS Convention Area covers Areas within National Jurisdiction
(Source: FAO Website)¹²⁰

The establishment of CPPS is an outcome of the 1952 *Santiago Declaration* in which the three founding South American States, followed by Colombia in 1980, expressed their concern about the proper conservation and management of marine resources to secure the economic development and livelihood of their people within the restricted limits of jurisdiction of 12 nautical miles applicable at the time.¹²¹ The concerns raised are linked to the lack of protection and conservation of fishery resources and the negative impacts that the exploitation of marine resources, particularly straddling and highly migratory fish stocks, in high seas areas adjacent to their zones under national jurisdiction has on coastal States fisheries within national jurisdiction and consequently on the livelihood and the economic development of these countries.¹²² As a result of

Conservation of Marine Resources of the South Pacific], opened for signature 18 August 1952 (entered into force 6 May 1955) ('CPPS Organisation Convention').

¹¹⁸ *Convención sobre Personalidad Jurídica Internacional de la Comisión Permanente del Pacífico Sur* [Convention on International Legal Personality of the Permanent Commission for the South Pacific], opened for signature 14 January 1966. The CPPS has its headquarters in Guayaquil, Ecuador. Its official language is Spanish.

¹¹⁹ CPPS has a membership limited to the coastal States within its jurisdictional area in the Southeast Pacific.

¹²⁰ <http://www.fao.org/fishery/rfb/cpps/en> (Accessed: 24 August 2014).

¹²¹ CPPS, 'Declaración de Santiago ('Declaración sobre Zona Marítima')' (Santiago de Chile, 18 de agosto de 1952) in CPPS, *Textos Básicos* (CPPS Secretaría General, 4th ed, 2013) 5 ('CPPS Maritime Zone Declaration').

¹²² CPPS, 'Declaración Conjunta relativa a los Problemas de la Pesquería en el Pacífico Sur' (Santiago de Chile, 18 de agosto de 1952) in CPPS, *Textos Básicos* (CPPS Secretaría General, 4th ed, 2013) 7 ('CPPS Fisheries Declaration').

these concerns, these coastal States proclaimed exclusive jurisdiction and sovereignty over waters up to 200 nautical miles from their coastline for the purpose of ensuring better conservation, development and use of these resources to promote the social and economic stability of the region.¹²³ This proclamation triggered worldwide claims for the extension of State sovereignty up to 200 nautical miles, notably in Latin America and Africa, and culminated with the inclusion of the 200 nautical mile zone in the 1982 LOSC, known as the EEZ.¹²⁴

CPPS was designed and established as a strategic regional alliance to consolidate its member States' presence in the Southeast Pacific region and to foster their collaboration.¹²⁵ It has an advisory mandate to promote both the conservation of marine living resources and the protection of the marine environment within the jurisdiction of its member States (Figure 4.5).¹²⁶

¹²³ *CPPS Maritime Zone Declaration* art I and art II. Article II specifies that the 200 nautical miles zone starts from the coastline of the CPPS member States but it does not specifically detail whether the distance is calculated from their territorial baselines. This proclamation continued to allow the innocent passage of foreign vessels within the 200 nautical miles zone (art V).

¹²⁴ Following the *Truman Proclamation* ('Policy of the United States with Respect to Coastal Fisheries in Certain Areas of the High Seas') (Proclamation No 2668, 28 September 1945), in which the USA claimed the right to establish conservation zones on the high seas areas contiguous to their coasts to control and regulate fisheries activities, Chile and Peru declared in 1947 a 200 nautical miles sovereignty zone off their coast (*Presidential Declaration Concerning Continental Shelf of 23 June 1947*, El Mercurio (Santiago de Chile, 29 June 1947); *Presidential Decree No 781 of 1 August 1947*, El Peruano (Diario Oficial Vol 107 No 1983, 11 August 1947)). These proclamations were reiterated in the *CPPS Maritime Zone Declaration* by Chile, Ecuador and Peru. In 1949, several Middle East States made unilateral declarations for a 200 nautical miles sovereignty zone (Saudi Arabia, Bahrain, Qatar, Abu Dhabi, Kuwait, Dubai, Sharjah, Ras al Khaimah, Umm al Qaiwain and Ajman). Other Latin American States followed in the 1960s and their position was settled in the *Montevideo Declaration on the Law of the Sea*, 9 ILM 1081 (8 May 1970), signed by Argentina, Brazil, Chile, Ecuador, El Salvador, Nicaragua, Panama, Peru and Uruguay, and the *Lima Declaration*, 10 ILM 207 (1970), signed by the signatories of the 1970 *Montevideo Declaration* as well as Colombia, Guatemala, Honduras, Mexico and the Dominican Republic. The *Declaration of Santo Domingo*, 11 ILM 892 (1972), signed by Colombia, Costa Rica, Dominican Republic, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Trinidad and Tobago and Venezuela, outlined the *Patrimonial Sea concept*, which provides States with sovereign rights rather than sovereignty over the 200 nautical miles zone. African States put forward similar claims through the *Declaration of Yaoundé*, 12 ILM 210 (1972) and the *Addis Ababa Declaration*, 12 ILM 1200 (1973). Source: S N Nandan, *The Exclusive Economic Zone: A Historical Perspective* (1987) Food and Agriculture Organization of the United Nations <<http://www.fao.org/docrep/s5280t/s5280t0p.htm>> (accessed: 21 November 2014).

The *Patrimonial Sea concept* was first mentioned and defined in 1971 by Edmundo Vargas in a document submitted to the Organization of American States Inter-American Juridical Committee (José Antonio de Yturriaga, *The International Regime of Fisheries: From UNCLOS 1982 to the Presential Sea* (Martinus Nijhoff, 1997) 26-27). It led to a division between States that claimed a 200 nautical miles territorial zone, in which they have total sovereignty, and States that claimed a 200 nautical miles Patrimonial Sea, in which they have sovereign rights to use and conserve marine resources. A few States still claim a 200 nautical miles territorial zone: Benin, The Republic of Congo, Ecuador, Liberia, Nicaragua, Peru and Somalia (Peter A Dutton, 'The International Dynamics of the Controversy over Military Activities in the EEZ' in Jon M van Dyke, Sherry P Broder, Seokwoo Lee and Jin-Hyun Paik (eds), *Governing Ocean Resources: New Challenges and Emerging Regimes: a Tribute to Judge Choon-Ho Park* (Martinus Nijhoff, 2013) 287, 300). However, except for Peru, all of these States have signed the LOSC and are therefore bound under art 3 to a 12 nautical miles territorial sea. Peru is therefore the only country in the world still claiming a 200 nautical miles territorial sea.

¹²⁵ *Estatuto sobre Competencias y Estructura de la Comisión Permanente del Pacífico Sur* [Statute on Competency and Structure of the Permanent Commission for the South Pacific] (2013) ('*CPPS Estatuto*') art 1 and art 4f.

¹²⁶ CPPS is an advisory RFO. Its recommendations are to be applied by its member States, unless they formally oppose them (CPPS Organisation Convention art 4). Although CPPS' vision of an integrated approach to marine management embodies the same concerns expressed in the *CPPS Maritime Zone Declaration* of being able to apply its strategy outside of national jurisdiction to the Pacific basin (*CPPS Estatuto* art 2), CPPS' legal competence remains within the limits of national jurisdiction of its member States in terms of resource management and policy development. However, for the protection of the marine environment, the jurisdiction of CPPS extends beyond national jurisdiction to those parts of the high seas that could be affected by marine and coastal pollution (*CPPS Marine Environmental Protection Convention* art 1). The exact geographical extent of this jurisdiction is not defined. See also: *CPPS Estatuto* art 4. This provision shows the advisory nature of CPPS: 'to promote rather than conserve or manage'.

CPPS' primary functions are notably to:

- a) promote the conservation of marine living resources, particularly highly migratory and transboundary fish stocks, within the national jurisdiction of its member States and beyond;¹²⁷
- b) coordinate the marine policies of its member States with a view to adopt common positions and regional marine policies;¹²⁸
- c) promote the active participation of its member States in the exploration and exploitation of non-living resources in the Area;¹²⁹
- d) promote and support regional scientific research on the marine environment, its biological resources, the climate and on socioeconomics and share this knowledge, obtain both the technical and financial support to undertake scientific investigations of an oceanic, climatic, biological and ecological nature, including on climate change and disaster management as well as undertake scientific and technical studies on fisheries products;¹³⁰
- e) promote a holistic assessment of the natural resources and fisheries of the Southeast Pacific with a view to its economic development and sustainable use;¹³¹
- f) foster cooperation and coordination mechanisms between its member States and with other competent organisations to prevent, reduce and control marine pollution in the Southeast Pacific;¹³² and
- g) promote marine environmental protection and awareness through education.¹³³

Hence CPPS aims to ensure the sustainable and integral development of the region through better coordinated protection and management of the marine environment of the Southeast Pacific and its living resources.¹³⁴

¹²⁷ *CPPS Estatuto* art 4a.

¹²⁸ This is CPPS's first strategic objective. Ibid art 4b. *Reglamento de la Comisión Permanente del Pacífico Sur Personal Internacional de la CPPS* [Rules of the Permanent Commission for the South Pacific CPPS] (2013) ('*CPPS Reglamento*') art 3.

¹²⁹ *CPPS Estatuto* art 4d.

¹³⁰ *CPPS Reglamento* art 3; *CPPS Estatuto* art 4e, art 4l and art 4h. The promotion and support of regional scientific research and the sharing of this knowledge are CPPS' second and fourth objectives, respectively.

¹³¹ *CPPS Estatuto* art 4i.

¹³² This is CPPS's third strategic objective (Ibid art 4j; *CPPS Reglamento* art 3).

¹³³ *CPPS Estatuto* art 4k.

¹³⁴ CPPS' mission is 'to coordinate and promote maritime policies of its member States for the conservation and responsible use of natural resources and its environment for the benefit and sustainable development of their people'. Its vision is to be 'a maritime system and an effective strategic alliance in coordinating maritime policies between its member States in order to secure a healthy and resilient marine area in the Southeast Pacific for current and future generations' (CPPS, 'Asamblea Extraordinaria' (February 2012) res 1.II; *CPPS Organisation Convention* art 3; *CPPS Estatuto* art 4).

CPPS' current work, as outlined in its 2011-2014 Operative Plan, includes among other things:¹³⁵

- a) strengthening national capacities to implement the Port State Measures Agreement, notably by identifying gaps and needs at the national level, sharing national experiences between CPPS countries and consolidating a regional vision to strengthen States' negotiating capacity;¹³⁶
- b) strengthening national capacities in monitoring, surveillance and control of fisheries and aquaculture activities by developing harmonised regional measures and promoting technology transfer between CPPS countries;¹³⁷
- c) assessing the socio-economic benefits and impacts of living marine resources exploitation;
- d) ensuring the sustainable use and management of fisheries resources, by improving, amongst others, fisheries management and conservation of sharks, chimaera, rays, mahi-mahi, and swordfish;¹³⁸
- e) supporting artisanal fisheries and small-scale fisheries, mainly through education, to ensure the sustainable use of fish stocks and living resources;
- f) promoting scientific research and technology transfer of marine genetic resources, particularly by assessing the regional potential of such resources and understanding legal aspects related to them;
- g) applying the ecosystem approach;¹³⁹
- h) improving knowledge on the ocean-atmosphere relationship, by coordinating and fostering regional scientific studies on the forecasting and monitoring of the El Niño phenomenon (ERFEN);¹⁴⁰

¹³⁵ CPPS, 'Plan de Acción Estratégico 2011-2014' (Anexo 2 de la Resolución 1/2010, 2010). The Operative Plan guides the development of CPPS activities (*CPPS Reglamento* art 74).

¹³⁶ See Chapter 3, footnote 270 for more information on the FAO Port States Measures Agreement.

¹³⁷ CPPS also works on IUU fishing prevention through the organisation of workshops (source: <http://www.cpps-int.org/index.php/quehacer/ambiente-marino-y-bio/pesca-indnr>, accessed: 24 November 2014).

¹³⁸ CPPS has a working group on sharks and has elaborated a regional action plan for the conservation and management of sharks, rays, and chimaeras (*CTC PAR Tiburón*; <http://www.cpps-int.org/index.php/ctc-par-tiburon>). CPPS also has a working group on sustainable fisheries and biodiversity conservation and a regional programme for the conservation of marine turtles (2007) and marine mammals (1991) in the Southeast Pacific.

¹³⁹ CPPS supports marine and coastal ecosystem assessments and has a working group on coastal management (<http://www.cpps-int.org/index.php/site-map/grupos-de-trabajo>, accessed: 24 November 2014).

¹⁴⁰ The programme 'Estudio Regional del Fenómeno de El Niño (ERFEN)' was set up by the *Protocolo Sobre el Programa Para el Estudio Regional del Fenómeno El Niño en el Pacífico Sudeste* [Protocol Concerning the Regional Programme for the Study of El Niño in the Southeast Pacific], opened for signature 6 November 1992 and is to be carried out within the national jurisdiction of States, unless investigations need to be carried out beyond this geographical scope (art 2). It involves forecasting and monitoring El Niño phenomenon (art 4 and art 5) through scientific and technical cooperation (art 7), which include information sharing (art 8). Studies of this phenomenon are undertaken through modelling work and data collection by research vessels. To date, 17 regional oceanographic cruises have been undertaken since the first one in 1998. CPPS also publishes regular Climate Alert Bulletins as well as ENFEN ('Estudio Nacional del Fenómeno 'El Niño') communiqués.

- i) assessing the effects of climate change on marine living resources and the marine environment;
- j) implementing the Global Ocean Observing System Regional Alliance for the Southeast Pacific (GOOS GRASP);¹⁴¹
- k) implementing a regional natural disaster mitigation and alert system for coastal areas;¹⁴²
- l) harmonising national legislations and facilitating the adoption of a common regional position to be presented at various international fora; and
- m) establishing a network of experts and a platform for the exchange of information.¹⁴³

Furthermore, CPPS serves as the Executive Secretariat for the Southeast Pacific RSP established through the 1981 *Convention for the Protection of the Marine Environment and Coastal Area of the Southeast Pacific*.¹⁴⁴ In this capacity, CPPS aims to promote mechanisms for political coordination between its member States to ensure adequate environmental management and policies on natural resources.¹⁴⁵ This includes the prevention, reduction and control of marine pollution and the development and management of marine and coastal protected areas.¹⁴⁶

¹⁴¹ The GOOS GRASP was established in May 2003. CPPS is responsible for publishing GRASP-related documents and monitor its progress (source: <http://www.cpps-int.org/index.php/grasp-index>; accessed: 24 November 2014).

¹⁴² CPPS is responsible for coordinating a regional alert system for tsunamis through prevention and public education and has established a working group on tsunamis to this effect (<http://www.cpps-int.org/index.php/site-map/grupos-de-trabajo>, accessed: 24 November 2014).

¹⁴³ CPPS has an information network and data aimed at supporting the integral management of coastal areas of the Southeast Pacific (SPINCAM; <http://www.cpps-int.org/index.php/pda-spincam>) as well as an information system on marine biodiversity and MPAs in the Southeast Pacific (SIBIMAP-PSE; <http://cpps.dyndns.info/sibimap/>).

¹⁴⁴ *CPPS Marine Environmental Protection Convention* art 13. Panama is also a party to this Convention.

¹⁴⁵ This is CPPS's third strategic objective (<http://www.cpps-int.org/index.php/site-map/cpps/cpps-objetivos>, accessed: 18 November 2014).

¹⁴⁶ *Project GloBallast*, with the financial and technical support of IMO, aims at helping developing countries to reduce the transfer of invasive species through ballast waters. CPPS also has a programme to coordinate the studies, monitoring and control of marine pollution in the Southeast Pacific (CONPACSE III) and a regional programme for the integral management of marine waste in the Southeast Pacific. See also: *Plan de Acción para la Protección del Medio Marino y Áreas Costeras del Pacífico Sudeste* [Plan of Action for the Protection of the Marine Environment and Coastal Areas of the Southeast Pacific] (2013); *CPPS Marine Environmental Protection Convention*; *Acuerdo sobre la Cooperación Regional para el Combate contra la Contaminación del Pacífico Sudeste por Hidrocarburos y otras Sustancias Nocivas en Casos de Emergencia* [Agreement on Regional Cooperation in Combating Pollution of the Southeast Pacific by Hydrocarbons or other Harmful Substances in Cases of Emergency], opened for signature 12 November 1981 (entered into force 7 February 1988); *Protocolo para la Protección del Pacífico Sudeste contra la Contaminación Proveniente de Fuentes Terrestres* [Protocol for the Protection of Southeast Pacific against Pollution from Land-Based Sources], opened for signature 22 July 1983 (entered into force 23 September 1986); *Protocolo para la Conservación y Administración de las Áreas Marinas y Costeras Protegidas del Pacífico Sudeste* [Protocol for the Conservation and Management of Protected Marine and Coastal Areas of the Southeast Pacific], opened for signature 21 September 1989 (entered into force 24 January 1995); *Protocolo para la Protección del Pacífico Sudeste contra la Contaminación Radiactiva* [Protocol for the Protection of the Southeast Pacific against Radioactive Pollution], opened for signature 21 September 1989 (entered into force 24 January 1995); *Plan de Acción para la Conservación de los Mamíferos Marinos del Pacífico Sudeste* [Plan of Action for the Conservation of Marine Mammals in the Southeast Pacific] (1991).

CPPS also has the competence to promote the conservation of marine living resources and the prevention, reduction and control of marine pollution in ABNJ of the Southeast Pacific, although the extent and scope of this competence is not clearly legally defined or outlined.¹⁴⁷ The establishment of a formal jurisdictional competency for the conservation and management of living resources in the high seas area of the Southeast Pacific was attempted through the drafting in 2000 of the *Framework Agreement for the Conservation of Living Marine Resources on the High Seas of the South Pacific*, known as the Galapagos Agreement.¹⁴⁸

This agreement provides for the creation of relevant legal agreements and regulations as well as the establishment of a separate body in charge of the conservation and management of high seas living resources for the Southeast Pacific. However, this agreement did not obtain the number of ratifications required to enter into force despite another attempt to bring it into force in 2003.¹⁴⁹ Although this was meant to be a regional agreement, it was drafted by CPPS' member States, namely Chile, Colombia, Ecuador and Peru, without the inclusion of other relevant stakeholders, including States with an interest in the fisheries of the Southeast Pacific. Other interested States could have ratified the agreement only once it was in force but were not involved in the drafting and ratification processes.¹⁵⁰

CPPS is now involved, together with SPRFMO and other partners, in the 'Sustainable Fisheries Management and Biodiversity Conservation of Deep-Sea Living Marine Resources and Ecosystems in the Areas Beyond National Jurisdiction' project, funded by the GEF.¹⁵¹ This is a global project, which aims to 'actively promote improved

¹⁴⁷ *CPPS Estatuto* art 4 gives CPPS the competency to promote the conservation of marine living resources beyond the national jurisdiction of its member States without mentioning to which extent this competency applies. However, this is not a set jurisdictional right and CPPS' main focus remains on marine areas within the national jurisdiction of its member States. The *CPPS Marine Environmental Protection Convention* (art 1) applies to the marine areas within the national jurisdiction of member States (which includes Panama and the CPPS member States) and adjacent high seas areas that are impacted by such marine pollution.

¹⁴⁸ *Acuerdo Marco para la Conservación de los Recursos Vivos Marinos en la Alta Mar del Pacífico Sudeste* ('*Acuerdo de Galápagos*') [Framework Agreement for the Conservation of Living Marine Resources on the High Seas of the South Pacific], opened for signature 14 August 2000 (not yet in force) ('*CPPS Galapagos Agreement*'). For a compatibility comparison between the Galapagos Agreement and the UNFSA, see: 'Compatibilidad del "Acuerdo de Galápagos" con el "Acuerdo de Nueva York"', a la Luz de "Convención de Naciones Unidas sobre Derecho del Mar" (CONVEMAR)' (Report).

¹⁴⁹ *Protocolo Modificadorio del Acuerdo Marco para la Conservación de los Recursos Vivos Marinos en la Alta Mar del Pacífico Sudeste* [Modificatory Protocol to the Framework Agreement for the Conservation of Living Marine Resources on the High Seas of the South Pacific], opened for signature 27 November 2003 (not yet in force).

¹⁵⁰ *CPPS Galapagos Agreement* art 16.2.

¹⁵¹ This is one of four projects funded by the GEF under the Global Sustainable Fisheries Management and Biodiversity Conservation in the Areas Beyond National Jurisdiction Programme, now renamed Common Oceans Programme that will be implemented between 2014 and 2018. The other projects are: 'Sustainable Management of Tuna Fisheries and Biodiversity Conservation in the Areas Beyond National Jurisdiction', 'Oceans Partnership for Sustainable Fisheries and Biodiversity Conservation', and 'Strengthening Global Capacity to Effectively Manage ABNJ'. This deep-sea project will be financed by GEF

[deep-sea fisheries] management and biodiversity conservation processes, working directly with countries through their RFMO/As as well as with industry partners, RSPs and other relevant stakeholders’.¹⁵² It focuses on three pilot regions, namely the Southeast Atlantic, the Western Indian Ocean and the Southeast Pacific. To this end, CPPS has set up a Working Group, which held its first meeting in August 2013.

Overall, CPPS is a strategic regional alliance, with its main focus on promoting linkages between marine scientific research and the development and harmonisation of regional policies, hence ‘strengthening science-based policy-making’.¹⁵³ Its scope predominantly lies within the national jurisdiction of its member States.

CPPS updated its statute and its rules of procedure in 2012. In doing so, CPPS positioned itself along the lines of the 1992 *Rio Declaration*, working towards the sustainable development of its member States by taking an integrated approach to the management of the oceans, applying, amongst other things, the ecosystem approach and the precautionary principle.¹⁵⁴ This includes taking into account relevant international legal instruments on the protection of the marine environment while respecting the applicable national policies.¹⁵⁵ In updating its statute, CPPS also updated its organisational structure and aligned itself with the 1992 *Rio Declaration* by applying an integrated approach to marine management.

CPPS is composed of five sections: the Assembly, which is the highest organ in the institution and is responsible for the development of policies, plans and programmes and the management of the other organs; the Executive Committee, which is the organ in charge of ensuring the fulfilment of decisions taken by the Assembly and responsible for managing the work of the Working Groups and budget; the National Sections, which serve as coordination bodies between the national institutions of each member State and CPPS to ensure the fulfilment of its work at the national level; the Working Groups as

totalling 8.4 million USD and through co-financing totalling 79 million USD. The project partners include amongst others RFOs such as GFCM, CCAMLR, NPFC, NAFO, NEAFC, SPRFMO, SEAFO and CPPS. This project has four components: 1) Policy and Legal Frameworks for Sustainable Fisheries and Biodiversity Conservation in the ABNJ Deep Seas; 2) Reducing Adverse Impacts on VMEs and Enhanced Conservation and Management of Components of EBSAs; 3) Improved Planning and Adaptive Management for Deep-Sea Fisheries in ABNJ; 4) Development and Testing of a Methodology for Area-Based Planning. Source: FAO, ‘Common Oceans: Global Sustainable Fisheries Management and Biodiversity Conservation in Areas Beyond National Jurisdiction’ (Report, FAO, 2014); <http://www.commonoceans.org/deep-seas-biodiversity/en/> (accessed: 25 November 2014).

¹⁵² http://www.thegef.org/gef/project_detail?projID=4660 (accessed: 18 November 2014).

¹⁵³ <http://www.fao.org/fishery/rfb/cpps/en> (accessed: 24 November 2014).

¹⁵⁴ *CPPS Estatuto* art 2.

¹⁵⁵ *Ibid.*

well as the General Secretary, which is the executive group responsible for the fulfilment of CPPS' mandates and for providing administrative and technical support to the other organs.¹⁵⁶ The General Secretary has three departments, composed of the department for international marine policy and legal affairs, the department of scientific affairs and fishery resources, and the department for the plan of action for the protection of the marine and coastal environments of the Southeast Pacific.¹⁵⁷ Decisions taken by the Assembly and the Executive Committee are by consensus.¹⁵⁸ All the non-disputed resolutions adopted by CPPS are binding on its member States from their adoption date.¹⁵⁹

4.3.3 South Pacific Regional Fisheries Management Organisation (SPRFMO)

SPRFMO was established outside the FAO framework by the *Convention on the Conservation and Management of High Seas Fishery Resources in the South Pacific Ocean*, which entered into force on 24 August 2012.¹⁶⁰ To date, 13 States have ratified the SPRFMO Convention and are members of SPRFMO.¹⁶¹

The creation of SPRFMO is mainly a response to the depletion of Chilean jack mackerel and orange roughy fish stocks in the South Pacific and the challenges facing coastal States in protecting fish stocks under their national jurisdiction from being exploited by distant water fishing nations (DWFNs) in the adjacent high seas.¹⁶² Australia, Chile and New Zealand started a consultation procedure in 2006 to bring together States fishing in the South Pacific to discuss the possibility of establishing a RFO responsible for the conservation and management of non-highly migratory fish stocks and biodiversity on the high seas of the South Pacific. Eight international consultation meetings took place between 2006 and 2009 involving the participation over the three years of 32 States and three observer States.¹⁶³ The preparatory meetings

¹⁵⁶ Ibid art 6, art 8, art 9, art 20 and art 23.

¹⁵⁷ <http://www.cpps-int.org/index.php/site-map/cpps/cpps-organigrama> (accessed: 18 November 2014).

¹⁵⁸ *CPPS Estatuto* art 9 and art 18.

¹⁵⁹ *CPPS Organisation Convention* art 4.

¹⁶⁰ *Convention on the Conservation and Management of High Seas Fishery Resources in the South Pacific Ocean*, opened for signature 14 November 2009, ATS 28 (entered into force 24 August 2012) corrected in 2010 ('*SPRFMO Convention*'). The SPRFMO Secretariat is based in Wellington, New Zealand.

¹⁶¹ Australia, Belize, Chile, China, Cook Islands, Cuba, European Union, Kingdom of Denmark in respect of Faroe Islands, Republic of Korea, New Zealand, Russian Federation, Vanuatu. Taiwan Province of China ratified the Convention. Source: <http://www.southpacificrfo.org/status-of-the-convention/> (accessed: 15 May 2014).

¹⁶² Chile's interest in SPRFMO was the management of the Chilean jack mackerel fishery. On the other hand, Australia and New Zealand had an interest in the development of a legal instrument for orange roughy.

¹⁶³ Over the three years of negotiations, a total of 32 States participated in these meetings: Australia, Belize, Canada, Chile, China, Colombia, Cook Islands, Cuba, Ecuador, European Community (EC), Federated States of Micronesia, Fiji, France, Japan, Kingdom of Denmark in respect of the Faroe Islands, Kiribati, Republic of Korea, Marshall Islands, New Zealand, Niue, Palau, Panama,

served to assess the fish stocks of the region, particularly the stocks of Chilean jack mackerel, to evaluate fishery impact assessments and the development of data standards.¹⁶⁴ At the third meeting held in Chile in 2007, States adopted interim measures for pelagic fisheries and for bottom fisheries. Another set of interim measures were adopted at the final consultation meeting in 2009: one for pelagic fisheries and another one for deep-water gillnet fisheries.¹⁶⁵

SPRFMO aims to ensure the long-term conservation and sustainable use of non-highly migratory fish species (including molluscs and crustaceans in accordance with the 1982 LOSC definition and sedentary species found outside of the national jurisdiction of States) within its Convention Area (Figure 4.6), notably through the application of a precautionary and ecosystem approach.¹⁶⁶ SPRFMO is not responsible for the management of anadromous and catadromous species or for the management of marine mammals, marine reptiles and seabirds in its Convention Area.¹⁶⁷ It mainly focuses on the overexploited Chilean jack mackerel fisheries in the high seas areas of the South Pacific. It is also involved, together with CPPS and other partners, in the ‘Sustainable Fisheries Management and Biodiversity Conservation of Deep-Sea Living Marine Resources and Ecosystems in the Areas Beyond National Jurisdiction’ project, funded by the GEF.¹⁶⁸

SPRFMO is composed of a Commission; a Scientific Committee in charge of undertaking the stock assessment and providing scientific advice; a Compliance and Technical Committee, which monitors States’ implementation of and compliance with SPRFMO’s adopted measures; an Eastern and a Western Sub-regional Management Committee, with an advisory role to recommend appropriate conservation and management measures and recommendations for the determination of States’

Papua New Guinea, Peru, Russian Federation, Samoa, Solomon Islands, Tonga, Ukraine, USA, Vanuatu and Venezuela. Of those, only 10 attended all of the preparatory meetings: Australia, Chile, Cook Islands, EC, France, New Zealand, Peru, Russian Federation, USA, Vanuatu, Malaysia and Mexico. Taiwan Province of China participated as a special observer to these meetings.

¹⁶⁴ See, eg: Gerard van Bohemen, ‘High Seas Fisheries Management: Reflections on Experience with Regional Fisheries Management Organisations in the South Pacific’ in Davor Vidas and Peter Johann Schei (eds), *The World Ocean in Globalisation: Climate Change, Sustainable Fisheries, Biodiversity, Shipping, Regional Issues* (Martinus Nijhoff, 2011) 233.

¹⁶⁵ *Final Act of the International Consultations on the Establishment of the Proposed South Pacific Regional Fisheries Management Organisation* (2009).

¹⁶⁶ *SPRFMO Convention* art 2. Highly migratory fish species are all fish species that are not included on the Annex I of the LOSC.

¹⁶⁷ *Ibid* art 1.

¹⁶⁸ See project description under CPPS in Section 4.3.2 of this chapter.

participation in the fisheries of the Convention Area; a Finance and an Administration Committee and a Secretariat providing the administrative support to the Commission.¹⁶⁹

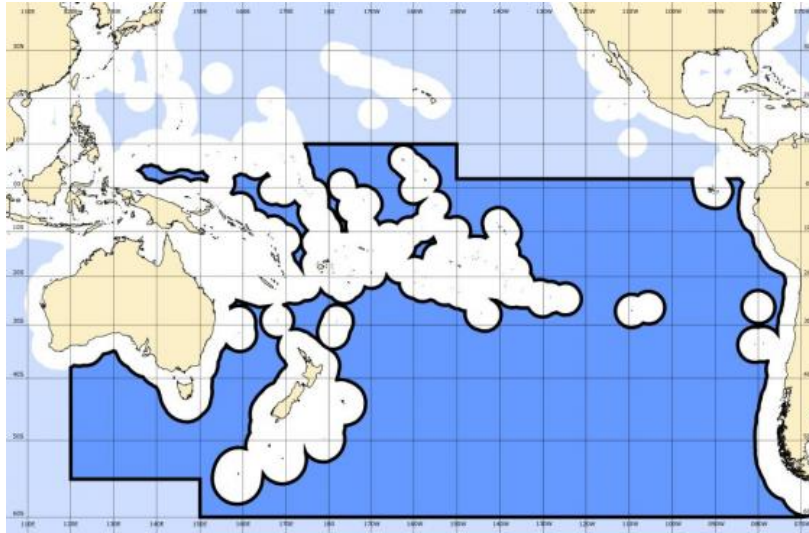


Figure 4.6: SPRFMO Convention Area covers ABNJ

(Source: SPRFMO Website)¹⁷⁰

The main functions of the Commission are to adopt relevant conservation and management measures as well as measures to prevent, deter and eliminate IUU fishing, regulate the participation of States in the fisheries, promote the undertaking of scientific research in the Convention Area, cooperate in data exchange with other relevant States and organisations, promote the compatibility of conservation and management measures and ensure the establishment of effective compliance and enforcement procedures, assess flag State performance, review the provisions' and measures' effectiveness and adopt the budget.¹⁷¹ The Commission is the legislative and executive body of SPRMFO in charge of adopting relevant conservation and management measures as well as monitoring and compliance measures. Decisions taken by the SPRFMO Commission are made by consensus and are legally binding on member States.¹⁷²

¹⁶⁹ *SPRFMO Convention* art 6, art 10, art 11, art 13, art 14 and art 21.

¹⁷⁰ The SPRFMO Convention area extends to high seas areas of the South Pacific between Australia in the west and Chile in the east (*SPRFMO Convention* art 5). Source: www.southpacificrfmo.org/illustrative-map-of-sprfmo-area/ (Accessed: 4 April 2013).

¹⁷¹ *Ibid* art 8.

¹⁷² *Ibid* art 16 and art 17.

4.4 Role and Appropriateness of RFMOs to Conserve High Seas Biodiversity

As highlighted in Chapters 2 and 3, RFMOs play an important role in high seas fisheries management and in providing a platform through which States can fulfil their duty to cooperate.¹⁷³ The role legally given to RFMOs through the LOSC and the UNFSA is in the management and conservation of high seas living resources, particularly highly migratory and straddling fish stocks.¹⁷⁴ RFMOs provide fora, albeit with the competence to impose stringent management and conservation obligations on States through their management mandate, for the establishment, implementation and regulation of management and conservation measures, which apart from harvested species, also need to take into account dependent and associated species.¹⁷⁵ They can develop management principles and procedures, contribute to the scientific knowledge, produce regulatory practice and elaborate management tools for ABNJ.¹⁷⁶ All of these are appropriate and necessary functions from the perspective of resource management.¹⁷⁷

RFMOs are, legally at least, partially equipped to deal with high seas biodiversity conservation. Partially, because by definition biodiversity has three components, of which species diversity and ecosystem diversity are, as the tangible components of biodiversity, the two main ones to be considered for the conservation and sustainable use of biodiversity.¹⁷⁸ Biodiversity conservation therefore needs to include not just the conservation of biological resources but also ecosystems, as well as the protection of the marine environment.

The UNFSA further requests States to address the protection of biodiversity, which, although such a role is not explicitly outlined in current international legal instruments for RFMOs, can be addressed by RFMOs through States' duty to cooperate.¹⁷⁹ The 2011 Joint Expert Meeting on Addressing Biodiversity Concerns in Sustainable Fisheries organised by the CBD showed that 'fairly full attention to the major

¹⁷³ LOSC art 63.2, art 64 and art 118; UNFSA art 8.5; *Code of Conduct* art 7.1.3.

¹⁷⁴ LOSC art 117 and art 118; UNFSA art 8.3.

¹⁷⁵ LOSC art 119.1b.

¹⁷⁶ Alf Hakon Hoel, 'Marine Biodiversity and Institutional Interplay' (2003) 30 *Coastal Management* 25; B C O'Leary et al, 'The First Network of Marine Protected Areas (MPAs) in the High Seas: The Process, the Challenges and Where Next' (2012) 36 *Marine Policy* 598; Julien Rochette et al, 'The Regional Approach to the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction' (2014) 49 *Marine Policy* 109, 116.

¹⁷⁷ Hoel, above n 176.

¹⁷⁸ See definition of biodiversity in Section 3.3.2.1 of Chapter 3.

¹⁷⁹ UNFSA art 5g.

biodiversity [obligations] [was already given] in the RFMO conventions'.¹⁸⁰ For instance through the ecosystem approach to fisheries (EAF) management and the application of conservation measures for vulnerable marine ecosystems (VMEs) RFMOs have been able to extend their focus beyond target species considerations.¹⁸¹ Hence, RFMOs can, through the political and cooperative will of States, either strengthen their mandates to include such biodiversity obligations or adopt legally binding resolutions that can more specifically address high seas biodiversity conservation.

Whether or not RFMOs are appropriate to deal with the conservation of high seas biodiversity is harder to assess. As highlighted in Chapter 2, there is a suggested push towards a strengthening of existing international and sectoral bodies' mandates, particularly for RFMOs and RSOs.¹⁸² This strengthening has been proposed to extend their mandates into ABNJ as well as from single species to multi-species management, integrating high seas biodiversity obligations, and to upgrade their mandates to include broader environmental principles.¹⁸³ However, RFMOs have been criticised for their poor implementation of management measures, particularly of biodiversity related ones, the lack of compliance and enforcement thereof, ineffective decision-making processes as well as a lack of capacity and political will.¹⁸⁴ It therefore seems that, regardless of a strengthening in mandate, other shortcomings, particularly accountability, will need to be addressed before RFMOs are deemed appropriate.¹⁸⁵

Also, not just one institution is in charge of biodiversity related components on the high seas. This is provided by the non-comprehensive and scattered legal and institutional framework in place for high seas biodiversity, but also the need to ensure the inclusion of both the species and ecosystem components and the protection of the marine

¹⁸⁰ Convention on Biological Diversity, *Report of Joint Expert Meeting on Addressing Biodiversity Concerns in Sustainable Fisheries*, UNEP/CBD/SBSTTA/16/INF/13, Subsidiary Body on Scientific Technical and Technological Advice, 16th meeting, Item 6.2 of the Provisional Agenda (5 March 2012) ('*Biodiversity Concerns Report*') annex III para 8.

¹⁸¹ *Biodiversity Concerns Report*.

¹⁸² See Section 2.6.2 in Chapter 2. See, eg.: Kristina M Gjerde et al, 'Options for Addressing Regulatory and Governance Gaps in the International Regime for the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction' (IUCN Environmental Policy and Law Papers Online Marine Series No 2, IUCN, 2008); Kristina M Gjerde et al, 'Ocean in Peril: Reforming the Management of Global Ocean Living Resources in Areas Beyond National Jurisdiction' (2013) 74 *Marine Pollution Bulletin* 540; Ban et al, above n 24; Rochette et al, above n 176; Warner et al, above n 26.

¹⁸³ Juan Manuel Gómez-Robledo and Robert Hill, *Letter dated 15 May 2008 from the Co-Chairpersons of the Ad Hoc Open-ended Informal Working Group to Study Issues Relating to the Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction Addressed to the President of the General Assembly*, A/63/79, United Nations General Assembly, 63rd sess, Item 73 of the preliminary list (16 May 2008) ('*2008 BBNJ Report*') para 40; Warner et al, above n 26.

¹⁸⁴ *Biodiversity Concerns Report* annex III para 9. See Section 2.5.1 in Chapter 2.

¹⁸⁵ *Ibid* annex III para 24.

environment.¹⁸⁶ Therefore, although RFMOs could take on such a role, they are not the only institutions that can, or should, take on such a role. Rather, institutional cooperation is required to ensure the full inclusion of biodiversity obligations and to promote integrated ocean management. Regional governance has been highlighted as critical to ensure the effective application and implementation of legal provisions for the conservation of high seas biodiversity.¹⁸⁷ Particularly, cooperation between RFMOs and RSOs as well as with other relevant international institutions is important. The North-East Atlantic region is seen as being one of the most advanced one in the conservation of biodiversity in ABNJ, showing that regional cross-institutional cooperation through coordinated efforts can positively influence the conservation and sustainable use of biodiversity in ABNJ.¹⁸⁸ It has also been noted by Hoel that, ‘in terms of impact on biodiversity and its actual management, [RFMOs] are therefore more important than the global ones’.¹⁸⁹

In conclusion, it can be said that RFMOs can and should play an important role in the conservation of high seas biodiversity. The strengthening of their mandates, dealing with their current shortcomings, and inter-sectoral cooperation will be important for RFMOs’ contribution to high seas biodiversity conservation. Based on the background provided in this and previous chapters, the institutional situation in the Southeast Pacific will be evaluated. Firstly, through the evaluation in Section 4.6 of this chapter of the institutional interplay between the two RFMOs and the RSO in this region and, secondly, through the evaluation of the implementation of global legal measures required by law for the conservation of high seas biodiversity by the RFMOs of the Southeast Pacific in Chapters 5 and 6.

4.5 Regional Institutional Interplay

Institutions play an important role in driving and responding to environmental change.¹⁹⁰ Interplay is the way that an institution interacts with other institutions within a particular environment both within the same level (horizontal) and across levels

¹⁸⁶ See Sections 2.5.1 and 2.5.2 of Chapter 2 and Chapter 3. See definition of biodiversity in Section 3.3.2.1 of Chapter 3.

¹⁸⁷ Warner et al, above n 26.

¹⁸⁸ Elisabeth Druel et al, ‘Governance of Marine Biodiversity in Areas Beyond National Jurisdiction at the Regional Level: Filling the Gaps and Strengthening the Framework for Action. Case Studies from the North-East Atlantic, Southern Ocean, Western Indian Ocean, South West Pacific and the Sargasso Sea’ (IDDRI Study No 04/12, IDDRI, 2012); Rochette et al, above n 176.

¹⁸⁹ Hoel, above n 176.

¹⁹⁰ Institutions are defined by Young et al as: ‘systems of rules, decision-making procedures, and programs that give rise to social practices, assign roles to participants in these practices and guide interactions among the occupants of the relevant roles’ (cited in Hoel, above n 176, 26).

(vertical) of social organisation. It can affect the environmental regime, both positively and negatively.¹⁹¹ A regime is defined by Krasner as ‘implicit or explicit principles, norms, rules, and decision-making procedures around which actors’ expectations converge in a given issue-area’.¹⁹² An example of horizontal interplay would be the interaction between a RFMO and a RSO within a specific region. An example of vertical interplay would be the interaction between a regional body and an international body, such as FAO or the International Maritime Organization (IMO). Such interplay can either be: deliberate, through active governance policy; or unintended, through the political or functional connection and interdependence that exists between institutions or in cases when the action of an institution significantly affects another’s operation.¹⁹³ A large number of institutions and environmental regimes have been set up under international environmental law to tackle the numerous environmental challenges that we are faced with, resulting in a possible jurisdictional or functional overlap or even conflict in their mandates.¹⁹⁴

Institutional overlaps can either positively or negatively affect a regime’s effectiveness as well as the development, implementation and performance of institutions.¹⁹⁵ When overlaps are appropriately and synergistically used, they can benefit both the institutions and regimes. Synergic overlaps generally occur between coordinating institutions and institutions working on similar issues or with similar scopes.¹⁹⁶ Conversely, when overlaps are not adequately used, they can obstruct the effective and efficient conservation and management of the marine environment.¹⁹⁷ They do not necessarily create a management issue but may lead to situations of unclear competences and

¹⁹¹ Hoel, above n 176, 26; Oran R Young, ‘Environmental Governance: The Role of Institutions in Causing and Confronting Environmental Problems’ (2003) 3 *International Environmental Agreements: Politics, Law and Economics* 377. Other terms have been used in the literature as equivalents to the term interplay, such as linkage, interaction, interconnection or relation (Olav Schram Stokke, ‘The Interplay of International Regimes: Putting Effectiveness Theory to Work’ (FNI Report 14/2001, The Fridtjof Nansen Institute, 2001) 2).

¹⁹² Krasner 1982, cited in G K Rosendal, ‘Impacts of Overlapping International Regimes: The Case of Biodiversity’ (2001) 7 *Global Governance* 95, 96.

¹⁹³ Karen N Scott, ‘International Environmental Governance: Managing Fragmentation Through Institutional Connection’ (2011) 12 *Melbourne Journal of International Law* 177, 184; Thomas Gehring and Sebastian Oberthür, ‘Interplay: Exploring Institutional Interaction’ in Oran R Young, Leslie A King and Heike Schroeder (eds), *Institutions and Environmental Change: Principal Findings, Applications, and Research Frontiers* (MIT Press, 2008) 187; Olav Schram Stokke, ‘Managing Straddling Stocks: The Interplay of Global and Regional Regimes’ (2000) 43 *Ocean and Coastal Management* 205; Stokke, above n 191, 2.

¹⁹⁴ Scott, above n 193. A jurisdictional overlap ‘occurs where two or more statutes or regulations govern some aspect of the same resource or activity in the same geographic space’ while a functional overlap ‘arises when two or more statutes or regulations separately cover intersecting activities’ (Julia A Ekstrom et al, ‘A Tool to Navigate Overlaps in Fragmented Ocean Governance’ (2009) 33 *Marine Policy* 532). An overlap ‘implies that the functional scope of one regime protrudes into the functional scope of others’ (Young, cited in Rosendal, above n 192).

¹⁹⁵ Hoel, above n 176; Sebastian Oberthür, ‘Interplay Management: Enhancing Environmental Policy Integration among International Institutions’ (2009) 9 *International Environmental Agreements* 371.

¹⁹⁶ Rosendal, above n 192; Stokke, above n 191.

¹⁹⁷ Ekstrom et al, above n 194; Rosendal, above n 192.

uncertainty, the adoption of incoherent and contradictory measures between institutions and hence their ineffective implementation, duplication of work and can even cause conflict.¹⁹⁸ This is particularly the case when contradictory standards or different managerial approaches are used to deal with environmental problems that may possibly render the regimes less effective.¹⁹⁹

Conflict usually arises in situations when objectives or obligations of treaties with an overlapping mandate or field of application are mutually exclusive, not complementary or not adding to each other and particularly ‘where treaty provisions are open to interpretation’.²⁰⁰ This in turn can render management and conservation measures difficult for States to apply or comply with and can add complexity to the implementation and enforcement of these measures, even more so in instances of competitive interactions between institutions.²⁰¹

It is therefore important to manage the interplay between institutions to create synergistic overlaps and optimise each institution’s function in order to improve overall governance.²⁰² As pointed out by Young, the ability of a regime to produce sustainable outcomes is not only dependent on inter-scale (horizontal) and cross-scale (vertical) interactions between institutions, but also on how their member States and related national institutions operate and perform.²⁰³ To date, most of the studies have focused on the performance of institutions within a regime and consider it to be the best proxy of regime effectiveness.²⁰⁴ This section will provide a background on institutional interplay theory and the cooperative mechanisms available to avoid conflict and negative overlaps and improve environmental governance. It will then showcase some recent studies that have focused on the international interplay in the North-East Atlantic in Section 4.5.4 before analysing the state of the institutional interplay for the Southeast Pacific in Section 4.6.

¹⁹⁸ Ingrid Kvalvik, ‘Managing Institutional Overlap in the Protection of Marine Ecosystems on the High Seas. The Case of the North East Atlantic’ (2012) 56 *Ocean & Coastal Management* 35; Oberthür, above n 195; Stokke, above n 191; Scott, above n 193.

¹⁹⁹ Scott, above n 193.

²⁰⁰ Rosendal, above n 192; Scott, above n 193.

²⁰¹ Kvalvik, above n 198; Stokke, above n 191.

²⁰² Hoel, above n 176; Young, above n 191; Scott, above n 193.

²⁰³ Oran R Young, ‘Institutional Interplay: The Environmental Consequences of Cross-Scale Interactions’ in Elinor Ostrom, Thomas Dietz, Nives Dolšák, Paul C Stern, Susan Stonich and Elke U Weber (eds), *The Drama of the Commons* (National Academy Press, 2002) 263.

²⁰⁴ Sofia Frantzi, ‘What Determines the Institutional Performance of Environmental Regimes? A Case Study of the Mediterranean Action Plan’ (2008), 32 *Marine Policy* 618.

4.5.1 Stages and Pathways of Institutional Interplay

In his 1996 paper, Young identified four stages of institutional interplay.²⁰⁵ The first stage, termed embedded linkage, underpins all institutional and environmental regimes' interactions, as these take place within the realm of public international law, which, through its rules, concepts and principles, defines and limits the type, extent and level of their interaction.²⁰⁶

The second stage, termed overlapping linkage, results, as described above, when environmental regimes that have been established for different purposes independently from each other intersect, hence potentially impacting on and affecting each other.²⁰⁷ These overlaps can result from a functional interaction, where regimes with similar scopes are linked in 'biophysical or socioeconomic terms'; a behavioural interaction, also termed 'interaction through commitment', where decisions under one regime may influence or impact on another regime; or a cognitive interaction, which 'is based upon persuasion' and 'driven by the power of knowledge and ideas'.²⁰⁸

The third stage, clustered linkage or 'joint interplay management', involves the coordination of activities between institutions through for instance policy integration, or the establishment of joint work programmes, joint rules or joint institutions.²⁰⁹ This type of linkage has been undertaken in the North-East Atlantic as highlighted in Section 4.5.4 below.

Finally, the fourth and most advanced interplay stage is the formal linking of institutions, termed institutional nesting.²¹⁰ As noted by Young, the embedded and overlapping linkage stages happen unintentionally as a consequence of the fragmentation of international law while the nesting and clustering linkage stages are part of the intentional interplay management.²¹¹

²⁰⁵ Oran R Young, 'Institutional Linkages in International Society: Polar Perspectives' (2006) 2(1) *Global Governance* 1.

²⁰⁶ Ibid; Scott, above n 193.

²⁰⁷ Young, above n 205; Gehring and Oberthür, above n 193.

²⁰⁸ Oberthür, above n 195; Scott, above n 193; Gehring and Oberthür, above n 193. Interaction through commitment can be both mutually supportive or lead to conflict between regimes and institutions (Scott, above n 193).

²⁰⁹ Oberthür, above n 195; Scott, above n 193.

²¹⁰ Young, above n 205.

²¹¹ Ibid.

Stokke highlights four pathways by which interplay may occur.²¹² These include: a) diffusion, which connotes the influence of one regime over another by, for instance, the inclusion of basic principles, such as the precautionary principle or ecosystem approach, or other operational regime components, for example in the area of compliance and enforcement; b) political spillover, which occurs when States' interests or capabilities in one regime can shape and have an influence on the operation of another regime; c) normative interplay, which arises when the rules under a regime lead to conflict with or strengthen another regime; and d) operational interplay, which involves deliberate activity coordination between regimes to avoid duplication of work and conflict.²¹³

4.5.2 Cooperative Mechanisms for Institutional Interplay Management

As underscored by Oberthür, interplay management requires an 'awareness of and reflection upon the interaction' and 'deliberate efforts by any relevant actor, or group of actors, in whatever form or forum to address and improve institutional interaction and its effects'.²¹⁴ Interplay can be positively enhanced by increasing institutions' coordination and interactions and by working on policy integration.²¹⁵ Increased institutional coordination can be achieved through the establishment of a formal framework to facilitate inter-institutional cooperation. Creating such cooperative arrangements between institutions is a way of enhancing the benefits resulting from interplay, including cost-efficiency, while minimising the negative consequences of overlaps and conflicts.²¹⁶

Since, as shown in Chapter 3, legal provisions for the conservation of high seas biodiversity are scattered across several legal treaties and while a potential international agreement on conservation and sustainable use of marine biodiversity in ABNJ is being debated under the United Nations (UN) umbrella, the use of institutional cooperative mechanisms provides an important tool towards achieving high seas biodiversity conservation.²¹⁷ These include the signing of MoUs to clarify institutions' competences,

²¹² Stokke, above n 193.

²¹³ An example of normative interplay is the Swordfish Case between the EC and Chile, in which each party highlighted its rights under different regimes, namely the World Trade Organization (WTO) and the LOSC (see Section 3.3.2.6 in Chapter 3). An example of operational interplay is the work done in the North-East Atlantic between OSPAR and NEAFC. See Section 4.5.4 of this chapter.

²¹⁴ Oberthür, above n 195.

²¹⁵ Ibid.

²¹⁶ Brown Weiss, cited in Stokke, above n 191, 13; Scott, above n 193.

²¹⁷ See, eg: Karen N Scott, 'Transboundary Environmental Governance and Emerging Environmental Threats: Geo-engineering in the Marine Environment' in Robin Warner and Simon Marsden (eds), *Transboundary Environmental Governance: Inland, Coastal*

regular contact between institutions' secretariats, cooperation between institutions' committees, meeting participation, and the development of a common science platform.²¹⁸ Scott categorises the forms of cooperative institutional interplay as: a) formal institutional cooperation through the establishment of MoUs or memoranda of cooperation (MoCs); b) integrated institutional management; and c) integrated political management.²¹⁹

Formal institutional cooperation through the establishment of MoUs or MoCs aims to achieve common goals and objectives through the use of different cooperative mechanisms, all of which provide for cognitive interaction that will eventually contribute towards more effective governance.²²⁰ These can be more basic in nature, such as establishing information exchange procedures and the participation at each other's meetings; or more advanced, such as the establishment of joint work programmes, joint reporting mechanisms and joint liaison positions.²²¹ As highlighted by Scott, MoUs and MoCs are run by institutions' or regimes' secretariats, not by States Parties. Hence, the successful negotiation and implementation of these cooperative arrangements depend firstly on the existence of a secretariat and its legal capacity to undertake such arrangements.²²² Secretariats therefore play an important role in inter-institutional cooperation.²²³

Such MoU or MoC agreements can be established for different reasons: firstly, the institutions signing such an agreement have overlapping or synergetic subject matters, which means that they are similar in scope or in competencies.²²⁴ This is the case, for example, of MoUs signed by RFMOs or the collaborative work undertaken by the

and Marine Perspectives (Ashgate Publishing, 2012) 223; Juan Manuel Gómez-Robledo and Philip D. Burgess, *Report of the Ad Hoc Open-ended Informal Working Group to Study Issues Relating to the Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction*, A/61/65, United Nations General Assembly, 61st sess, Item 69(a) of the preliminary list (20 March 2006) ('2006 BBNJ Report') para 51, para 53 and annex I para 13; 2008 BBNJ Report para 22 and para 24; Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 16 March 2010 from the Co-Chairpersons of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/65/68, United Nations General Assembly, 65th sess, Item 75(a) of the preliminary list (17 March 2010) ('2010 BBNJ Report') para 12, para 13, para 48 and para 49.

²¹⁸ Kvalvik, above n 198; 2010 BBNJ Report para 49.

²¹⁹ Scott, above n 193.

²²⁰ As pointed out by Scott, the legal nature of these agreements is hardly ever explicitly defined and 'some commentators have taken the view that MoUs can *never* be legally binding, whereas others suggest that they only *tend* to be legally non-binding'. 'Even in the event that an agreement is legally binding, the obligations contained therein are unlikely to extend beyond the institutions of the MEA, including – possibly – the COP. Such agreements are thus unlikely to impose direct legal obligations on individual states party to the relevant MEA in the absence of an express provision to the contrary' (Scott, above n 193, 199; Scott, above n 217).

²²¹ *Ibid.*

²²² Scott, above n 217.

²²³ This includes 'learning, exchange of information and awareness raising' (Oberthür, above n 195). Biermann and Siebenhüner, cited in Oberthür, Oberthür, above n 195 highlight the 'central role [of secretariats] as knowledge brokers and negotiation facilitators'.

²²⁴ Scott, above n 193.

RSN.²²⁵ Scott also notes that, in certain cases, some institutions and regimes have unilaterally adopted formal resolutions for the promotion of cooperation.²²⁶ Secondly, cooperation can be undertaken when institutions' subject matters intersect.²²⁷ Finally, they can involve functional cooperation, which can, for instance, include trade regulation, the establishment of allowable catch limits or the development of uniform licensing requirements for vessels.²²⁸ As underscored by Rochette et al, 'the development of MoUs between the various bodies is important to clarify competences and ways of interaction (...) but the challenge is to make such MoUs operational'.²²⁹

Institutional integrated management is the next step in cooperative institutional interplay. This involves a conscious, more targeted as well as broader and deeper institutional cooperative interaction through communication, encompassing an active coordination of work programmes as well as administrative and procedural coordination. This may include integrating the decision-making process, the implementation of activities or the regulation of behaviours through the adoption, implementation and enforcement of non-compliance mechanisms and measures.²³⁰ This type of cooperative management has the potential not only to lead to 'the creation of lasting specialised international institutions' but also to create 'an overarching institutional framework'.²³¹

As for MoUs and MoCs, institutional integrated management is driven by institutions rather than member States.²³² An example of such an institutionally integrated management includes the cooperative work of the five tuna RFMOs under the Kobe Process, which aims to harmonise their activities regarding the management of tuna fisheries worldwide and particularly address cross-cutting issues such as IUU fishing on a global scale.²³³ Another example includes the 2011 collective arrangement involving

²²⁵ For example, the MoU signed by the two tuna RFMO, IATTC and WCPFC: see Section 4.6.5.2 of this chapter for more information of this MoU. The establishment of the RSN in 2005 also allows for inter-Secretariat cooperation, but without the signing of a MoU, by way of exchanging information and facilitating the sharing of ideas and experiences between the various RSOs. Prior to the RSN establishment, FAO organised four meetings of the FAO and non-FAO RFOs (1999, 2001, 2003 and 2005). The RSN has met a total of five times to date (2007, 2009, 2011, 2012 and 2014).

²²⁶ Scott, above n 193. Oberthür, above n 195 describes this form of cooperation as requiring very little coordination as measures and actions are taken unilaterally by one institution.

²²⁷ Scott, above n 193.

²²⁸ Ibid.

²²⁹ Rochette et al, above n 176, 115.

²³⁰ Scott, above n 193; Scott, above n 217; Oberthür, above n 195; Stokke, above n 191.

²³¹ Oberthür, above n 195.

²³² Scott, above n 217, 244.

²³³ See Section 4.2.2.3 of this chapter.

the OSPAR Commission, the North East Atlantic Fisheries Commission (NEAFC), the International Seabed Authority (ISA) and the IMO, which aims to facilitate the exchange of information, promote cooperation in the implementation of environmental impact assessments (EIAs) and strategic environmental assessments (SEAs) and improve knowledge on ecosystems.²³⁴

The final level of cooperative institutional interplay is integrated political management, which involves both institutional and political management and cooperation. This type of interplay enhances opportunities to allow for improved environmental governance.²³⁵ Although this is the highest level of cooperative institutional interplay, it does not completely reach the stage of formal institutional nesting.²³⁶

For the regional governance of the conservation and sustainable use of high seas biodiversity, Warner et al suggested that RFMOs and RSOs should work more cooperatively and develop cooperative mechanisms.²³⁷ These could include the implementation of EIAs and SEAs and marine spatial planning, the establishment and implementation of fisheries and biodiversity management measures using common methodology and, if possible, a common scientific advisory body, such as the International Council for the Exploration of the Sea (ICES) for the North Atlantic or the North Pacific Marine Science Organization (PICES) for the North Pacific, and through the exchange of scientific information and incorporation of modern conservation principles.²³⁸ Institutional nesting through the merging of RFMOs and RSOs has been proposed as a medium to long-term option for the conservation and sustainable use of high seas biodiversity.²³⁹

4.5.3 Risks Linked to Institutional Interplay Management

While greater institutional integration and closer institutional cooperation helps to improve and strengthen governance and more effectively implement environmental commitments, Scott underlines that this can also pose associated risks.²⁴⁰ The first risk involves the differing membership of States to institutions or regimes. When a State is

²³⁴ Scott, above n 217, 243.

²³⁵ Ibid.

²³⁶ Ibid.

²³⁷ Warner et al, above n 26.

²³⁸ Ibid.

²³⁹ Druel et al, above n 188.

²⁴⁰ Scott, above n 193.

not a member of the institution or party to the regime with which its current institution or regime wants to sign a cooperative arrangement, there is a risk that the State will become unwillingly affiliated with this institution or regime and will therefore implicitly be subject to its obligations. While increasing participation between institutions and regimes may have positive effects for the State, it could also possibly lead to the withdrawal of an objecting State from the cooperating regime.²⁴¹

Through the cooperative arrangement, another risk involves the extension of the institution or regime's regulatory mandate beyond its powers, for instance over issues that it did not previously cover or extending its geographical scope.²⁴² While this may be beneficial to improve ocean governance and protection, it may lead to conflict between States. This can potentially result in less State support for the new regime, or some States may drop out of the cooperative arrangement.²⁴³

The third risk is the dominance of certain States within the cooperative arrangement to the detriment of others. Such dominant States can steer the discussions and resources away from other States in this arrangement to suit their interests and priorities, rather than working towards a common goal to benefit all.²⁴⁴ The prevalence of one regime over the other is a similar problem. To avoid these risks, Scott proposes to carefully draft the cooperative arrangement with clear agreed upon goals, principles and procedures.²⁴⁵

The final risk identified by Scott is that there is a minimal but possible risk of transferring problematic issues between institutions or regimes so that the problems remain unresolved, hence potentially affecting regime effectiveness.²⁴⁶ As underscored by Scott, regime effectiveness should not be undertaken to the detriment of accountability and legitimacy.²⁴⁷

²⁴¹ Ibid.

²⁴² Ibid.

²⁴³ Ibid.

²⁴⁴ Ibid; Young, above n 203.

²⁴⁵ Scott, above n 193.

²⁴⁶ Ibid.

²⁴⁷ Ibid.

4.5.4 Example of Institutional Interplay: North-East Atlantic

The North-East Atlantic is seen by many scholars as having a leading role in the conservation of biodiversity and protection of the marine environment in ABNJ, notably because it is the first region in the world where a network of high seas MPAs has been established.²⁴⁸ Several institutions have a mandate to work in the North-East Atlantic. These include the OSPAR Commission for marine environmental protection, NEAFC for fisheries management, the ISA for seabed activity management, the IMO for shipping management and pollution regulation as well as the European Union (EU) for marine-related management aspects over which it has competence within the national jurisdiction of member States.

In her study on the interaction between OSPAR and NEAFC, Kvalvik assessed their interplay to identify possible overlaps and see if these could lead to management problems in the region.²⁴⁹ The study showed that this is not the case but that their interplay was changing over time as well as 'limited and reactive rather than proactive'.²⁵⁰ Important lessons learned from this interplay include: a) the need to include the ecosystem approach in institutions' mandates; b) the need to clarify each institution's competence regarding the protection of high seas ecosystems through, for instance, a memorandum of understanding; and c) the establishment of a formal framework to facilitate inter-institutional cooperation. Synergistic inter-institutional interplay can be achieved through: a) regular contact between institutions' secretariats; b) cooperation between institutions' committees; c) mutual participation at meetings; and d) the development of a common science platform. This study concludes that overlapping core membership in institutions does not necessarily result in a higher inter-institutional cooperation. Rather, inter-institutional interaction and coordination between regional and international institutions and appropriate coordination at the national level is required for the successful management of ABNJ.²⁵¹ Furthermore, the development of protected areas within a region can be a good basis for the enhancement of inter-institutional cooperation.

²⁴⁸ The network of high seas MPAs was adopted by the OSPAR Ministerial Meeting in 2010, based on Recommendation 2003/3 on a Network of Marine Protected Areas. See: http://www.ospar.org/content/content.asp?menu=00700302210000_000000_000000 (accessed: 26 December 2014).

²⁴⁹ Kvalvik, above n 198.

²⁵⁰ *Ibid.*

²⁵¹ *Ibid.*

In this context, O’Leary et al highlight the importance of having a ‘champion’ amongst the institutions or States to facilitate the development of political will amongst the other institution members.²⁵² There is a need for cooperation between competent authorities and strong political commitment and willingness from the development of the MPA project to its implementation and management stages. The importance of applying compliance mechanisms has also been highlighted.

In his study of the interplay between the EU and the OSPAR Commission in the North-East Atlantic, Skjærseth shows that leadership and conscious institutional design can bring about a synergistic institutional interplay, avoiding duplication of work or low regime effectiveness.²⁵³ The various overlapping institutions in the region have been ‘mutually beneficial’ as they fulfil the various necessary functions to effectively manage marine pollution, as shown by the reduction of harmful substances, nutrients and dumping at sea.²⁵⁴ This study shows that cooperation can take place between various institutions with different scope and mandates for the benefit of environmental management. Skjærseth also highlights that by making its most critical commitments legally binding on its member States, OSPAR has managed to strengthen their implementation.

OSPAR, NEAFC, ISA and IMO have signed MoUs for enhanced cooperation in the protection of the marine environment of the North-East Atlantic.²⁵⁵ This was welcomed by the UNGA, which further invited States and institutions ‘to enhance their cooperation to better protect the marine environment’.²⁵⁶

4.6 Interplay between the three Regional Institutions of the Southeast Pacific

Given the importance of regional cooperation for the conservation of high seas biodiversity, the way RFMOs and RSOs interact influences the regional management and conservation of high seas biodiversity. As highlighted above and in Chapter 3, the scattered nature of legal provisions for the conservation of high seas biodiversity and

²⁵² O’Leary et al, above n 176. This is also highlighted for the conservation of high seas biodiversity by Druel et al, above n 188; David Freestone et al, ‘Can Existing Institutions Protect Biodiversity in Areas Beyond National Jurisdiction? Experiences from Two On-going Processes’ (2014) 49 *Marine Policy* 167.

²⁵³ Jon Birger Skjærseth, ‘Protecting the North-East Atlantic: Enhancing Synergies by Institutional Interplay’ (2006) 30 *Marine Policy* 157.

²⁵⁴ Ibid.

²⁵⁵ See Section 2.7.1 of Chapter 2.

²⁵⁶ United Nations General Assembly, *Oceans and the Law of the Sea: Report of the Secretary-General*, GA Res 68/70, 68th sess, Agenda Item 76 (a), A/68/70 (27 February 2014) para 260.

the delays involved in negotiating a potential international agreement on conservation and sustainable use of marine biodiversity in ABNJ under the LOSC means that short to medium-term solutions in the form of institutional cooperative mechanisms need to be put into place to achieve better high seas biodiversity conservation.²⁵⁷ As underscored by Scott, putting in place low-level cooperative mechanisms between existing institutions, at least at the beginning of the cooperation, allows for the reduction of possible political tensions and requires a lower level of resourcing.²⁵⁸ Low-level cooperative mechanisms include information exchange mechanisms, discussion fora, or common work programmes.

The institutional interplay analysis conducted in this section for the Southeast Pacific is principally modelled on the regional institutional analysis for the North-East Atlantic undertaken by Kvalvik.²⁵⁹ The construct of her analysis has been used and further implemented to evaluate the regional institutional interplay of the Southeast Pacific.

4.6.1 Geographical Scope

The three regional institutions being evaluated here cover most parts of the Southeast Pacific region, as defined by FAO Statistical Area No. 87, but none of them have fully overlapping Convention Areas (Figure 4.7). The IATTC Convention Area focuses on the EPO while the SPRFMO Convention Area focuses on the South Pacific Ocean. Both extend over the entire FAO Southeast Pacific region, except for the northern part of the region not covered by SPRFMO and the southern part of the region not covered by IATTC. For this reason, these northern and southern most parts of the Southeast Pacific have less extensive management coverage than the rest of the Southeast Pacific.

Both IATTC and SPRFMO have jurisdiction over the high seas of the Southeast Pacific, which contrasts with CPPS' mandate. Despite its willingness to work on adjacent high seas areas, CPPS has only the mandate to provide binding norms, resolutions and regulations for the marine areas within the jurisdiction of its member States.²⁶⁰ IATTC's

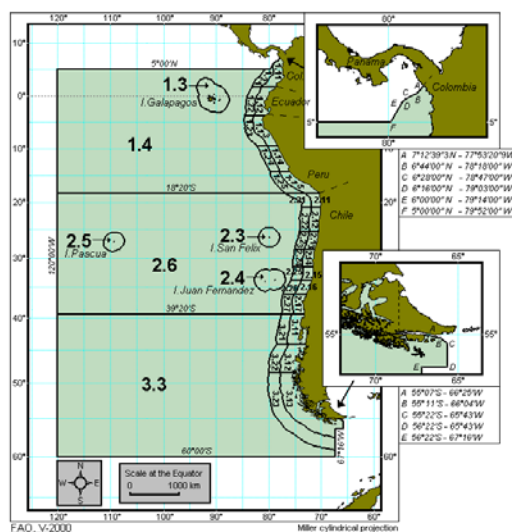
²⁵⁷ See, eg: Scott, above n 217; 2006 *BBNJ Report* para 51, para 53 and annex I para 13; 2008 *BBNJ Report* para 22 and para 24; 2010 *BBNJ Report* para 12, para 13, para 48 and para 49.

²⁵⁸ Scott, above n 217, 246.

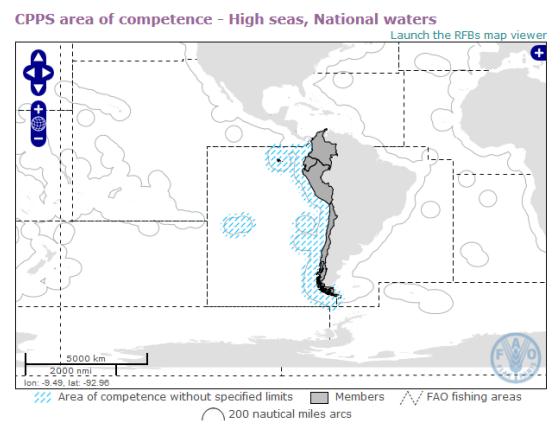
²⁵⁹ Kvalvik, above n 198.

²⁶⁰ *CPPS Estatuto* art 2 and art 4. CPPS' geographical scope is not clearly defined. Aspirations to include adjacent high seas areas into its jurisdiction have not yet materialised: Attempts to settle a Convention for the management of high seas living resources in the Southeast Pacific have failed, thus leaving CPPS with jurisdiction over only marine areas within the national jurisdiction of its

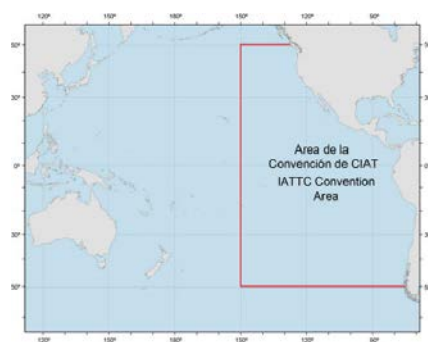
jurisdiction applies to both the marine areas within and beyond the national jurisdiction of its Convention Area, in contrast to SPRFMO which only has the mandate to manage fish stocks in ABNJ.²⁶¹ Given that States retain full sovereignty and sovereign rights over their national waters, the purpose of IATTC's jurisdiction is to ensure the compatibility of conservation and management measures adopted for the high seas with those adopted for areas within national jurisdiction.²⁶²



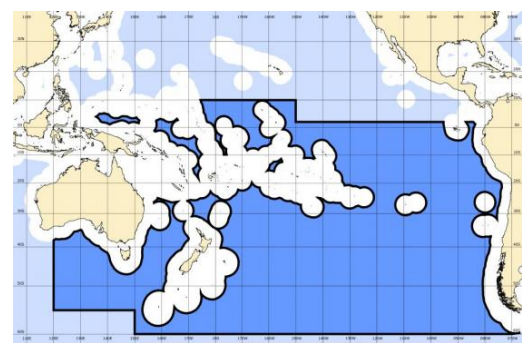
FAO Statistical Area No. 87
(Source: FAO Website)²⁶³



CPPS Convention Area
(Source: FAO Website)²⁶⁴



IATTC Convention Area
(Source: IATTC Website)²⁶⁵



SPRFMO Convention Area
(Source: SPRFMO Website)²⁶⁶

Figure 4.7: Geographical Scope of the Regional Institutions in the Southeast Pacific in comparison to the FAO Statistical Area No. 87

member States. Although classified under FAO as an advisory body, CPPS's decisions and regulations are to be implemented by its member States unless they formally object to them (*CPPS Organisation Convention* art 4).

²⁶¹ *SPRFMO Convention* art 5; *IATTC Antigua Convention* art 3.

²⁶² *IATTC Antigua Convention* art 5.

²⁶³ www.fao.org/fishery/area/Area87/en (accessed: 4 April 2013).

²⁶⁴ <http://www.fao.org/fishery/rfb/cpps/en> (accessed: 24 August 2014).

²⁶⁵ www.iattc.org/EPOMap.htm (accessed: 4 April 2013).

²⁶⁶ www.southpacificrfmo.org/illustrative-map-of-sprfmo-area/ (accessed: 4 April 2013).

Together, these three institutions cover nearly the whole of the FAO Statistical Area No. 87 and provide good geographical coverage of the Southeast Pacific. Increasing the levels of institutional interplay, cooperation and harmonisation of the conservation and management measures over the whole region will be important to ensure the adequate conservation and management of high seas biodiversity in this region.²⁶⁷

Given the oceanography of the region and the importance of highly migratory and straddling fish stocks, cooperation between CPPS and IATTC/SPRFMO to ensure that measures within and beyond national jurisdiction are compatible and complementary is critical.

4.6.2 Mandate and Objectives

SPRFMO and IATTC are management bodies that have the mandate to impose legally binding measures and sanctions upon their member States. Their objective is to ensure the long-term conservation and sustainable use of fisheries resources managed by their institution within their respective Convention Areas.²⁶⁸ In contrast and despite its resolutions being binding upon its member States, CPPS has only an advisory mandate.²⁶⁹ Being both a RFO and the Executive Secretariat for the Southeast Pacific RSP, CPPS has broader objectives than its two counterparts. They range from the coordination of member States' marine policies to promote the adoption of common regional marine policies, to the facilitation of scientific studies for the promotion of marine resources conservation and sustainable use as well as marine environmental protection.²⁷⁰

IATTC and CPPS were established before the EEZ regime was formally legalised through the 1982 LOSC. Their conventions and mandates dated, until recently, from their time of establishment. IATTC updated its convention in 2003 and CPPS updated its rules and statute in 2013, thus strengthening their mandates from a fisheries catch-oriented approach to a more sustainable use-based approach.²⁷¹ All three institutions' mandates incorporate modern conservation norms, particularly the precautionary

²⁶⁷ See, eg: Scott, above n 217; *2006 BBNJ Report* para 51, para 53 and annex I para 13; *2008 BBNJ Report* para 22 and para 24; *2010 BBNJ Report* para 12, para 13, para 48 and para 49.

²⁶⁸ *SPRFMO Convention* art 2; *IATTC Antigua Convention* art 2.

²⁶⁹ Although classified under FAO as an advisory body, CPPS's resolutions and recommendations are binding on its member States (*CPPS Organisation Convention* art 4). *CPPS Estatuto* art 4 shows the advisory nature of CPPS.

²⁷⁰ *CPPS Reglamento* art 3 describes the strategic objectives of CPPS. See also: *CPPS Organisation Convention* art 3.

²⁷¹ The 2003 Antigua Convention came into force in 2010.

approach promoted in the 1992 *Rio Declaration*.²⁷² SPRFMO's Convention was drafted as an attempt to avoid certain issues and problems that have occurred in other older RFMOs and includes both the precautionary and ecosystem approaches within its convention objectives.²⁷³

All three institutions ultimately aim to conserve and sustainably use fisheries resources within their jurisdictional areas. In terms of species coverage, IATTC and SPRFMO complement each other as IATTC manages highly migratory fish species and SPRFMO non-highly migratory marine species. IATTC's mandate includes the management of tunas and tuna-like species as well as other fish species that may be caught as bycatch during tuna fishing activities. SPRFMO on the other hand has a broader species coverage that includes all fish, mollusc and crustacean species as well as other high seas living resources as determined by the SPRFMO Commission. However, it excludes highly migratory species as listed in Annex I of the LOSC as well as marine mammals, marine reptiles, seabirds and anadromous and catadromous species.²⁷⁴ Although specifically focusing on fish stocks, particularly highly migratory and straddling fish stocks, CPPS has a mandate to promote the conservation of all marine living resources within its Convention Area.²⁷⁵ Because of their distinct species focus, there are no directly overlapping competences between institutions. They are complementary in scope. The lack of clarity in the region comes from CPPS' unclear geographical scope and advisory nature which contrasts with the more precise mandates of the other institutions.

4.6.3 Membership

States, including fishing entities, and regional economic integration organisations can become members of IATTC and SPRFMO.²⁷⁶ In contrast, CPPS only allows for the

²⁷² *SPRFMO Convention* art 2; *IATTC Antigua Convention* art 4; *CPPS Estatuto* art 2. See discussion in Chapter 3 of this thesis.

²⁷³ *SPRFMO Convention* art 2. Schiffman, above n 31, 183; Howard S Schiffman, 'The South Pacific Regional Fisheries Management Organization (SPRFMO): An Improved Model of Decision-Making for Fisheries Conservation?' (2013) 3 *Journal of Environmental Studies and Science* 209, 209.

²⁷⁴ Highly migratory species listed in Annex I include tuna and tuna-like species, cetaceans and sharks. Whales are managed by IWC. Anadromous and catadromous species are to be managed by the State(s) in which they breed or live according to *LOSC* art 66 and art 67.

²⁷⁵ *CPPS Estatuto* art 4a.

²⁷⁶ *IATTC Antigua Convention* art 27 and art 30; *SPRFMO Convention* art 36 and art 37. See footnote 108 of this chapter for a definition of 'fishing entities'.

membership of Southeast Pacific coastal States.²⁷⁷ It is also the only institution of which all of the South American countries bordering the Southeast Pacific are members.

Appendices A and B list all flag States that have fished or are fishing in the Southeast Pacific.²⁷⁸ They provide an overview of the regional institutions' membership as well as details about their catch. According to Article 8.3 of the UNFSA, all States fishing in an area, no matter how tiny the percentage in relation to the global catch data, have a duty to become members of RFMOs, or at least implement their conservation measures. Most of the States that have been fishing in the Southeast Pacific in 2012 are members of IATTC.²⁷⁹ In contrast, less than half of them are members of SPRFMO, which entered into force in 2012 and is a relatively recent institution.²⁸⁰ Of the 16 States that were fishing in the Southeast Pacific in 2012, most of them have an appropriate membership of RFMOs according to the composition of their current catches (Appendix A).²⁸¹

Only Chile and Japan have an incomplete RFMO membership according to the composition of their current catches. In the case of Chile, as a coastal State, it is not possible to determine from the FAO data used in Appendix A how much of the catch, if any, was caught beyond national jurisdiction. Therefore, it is difficult to assess whether Chile's membership is actually incomplete. Given that Chile did catch a very small percentage of tuna species in 2012, it would appear that it should consider becoming a member or cooperative non-member of IATTC. Japan's catch is very diverse and mainly includes tuna species. Its 2012 catch included about 10 per cent of jumbo flying squid, a species that is under SPRFMO management. Consequently, to have a complete set of RFMO memberships for its catch, Japan should become a member or cooperative non-member of SPRFMO.

²⁷⁷ Four States are members of CPPS: Chile, Colombia, Ecuador and Peru. For the *CPPS Marine Environmental Protection Convention*, for which CPPS is the Executive Secretariat, these States as well as Panama are members.

²⁷⁸ This list is derived from data obtained from FAO Fisheries and Aquaculture Department, Statistics and Information Service FishStatJ: Universal software for fishery statistical time series. Copyright 2011. FishstatJ Version 2.1.1 was used to analyse the data. This version includes the FAO Capture Production data 1950-2012 released in March 2014 (<http://www.fao.org/fishery/statistics/software/fishstatj/en>, accessed on 8 May 2014).

²⁷⁹ 15 out of 16 States are members of IATTC; only Chile is not a member of this institution.

²⁸⁰ 7 out of 16 States are members of SPRFMO. Colombia, Ecuador, Panama and Peru are cooperative non-members. Guatemala, Japan, Mexico, Nicaragua and Venezuela are not members of this institution.

²⁸¹ These States include: China, Colombia, Guatemala, Republic of Korea, Mexico, Nicaragua, Panama, Portugal, Spain, Taiwan Province of China, Vanuatu and Venezuela. Ecuador and Peru are cooperating non-members of SPRFMO. Both these States are coastal States and their catch, as reported in the FAO data used in Appendix A, includes both species caught within their national jurisdiction and on the high seas. It is not possible to determine from this data how much of the catch, if any, was caught beyond national jurisdiction. However, given their catch composition which consists of fish species managed by SPRFMO, both Ecuador and Peru should consider becoming full members of SPRFMO.

UNFSA specifies that States Parties either fishing on the high seas for species that are managed by a RFMO or having a ‘real interest’ in these fisheries must become members of this organisation or agree to apply its conservation measures.²⁸² There is no legal specification as to how large the percentage of species caught must be for States to be obliged to become members of the relevant RFMOs. According to UNFSA, even one fish caught in this area, whether as target fish or bycatch, gives rise to the obligation for the State to become a member of such an RFMO or to apply its conservation measures. In this respect, States with an incomplete membership are obliged to either become members of the relevant RFMOs or apply their conservation measures. There is no time requirement specified in UNFSA for RFMO membership applications so that States Parties are not under the obligation to immediately become members of an RFMO.

There is no requirement for States to cooperate in the management of marine living resources for which they are not fishing or in which they have no long-term ‘real interest’. The 25 States that were fishing in the Southeast Pacific region prior to 2012 (Appendix B) but have stopped fishing in this region, are not obliged to become members of these RFMOs.²⁸³

A look at the States that are common members of SPRFMO and IATTC shows that they are few and represent only 28.6 per cent of IATTC’s and 46.1 per cent of SPRFMO’s overall membership (Table 4.1). Out of the four CPPS member States, all but one (Chile) are members of the IATTC and only Chile is a member of SPRFMO. Although the appropriateness analysis undertaken above shows that the majority of States currently fishing in the Southeast Pacific have an appropriate RFMO membership for the type of fish they catch, the fact that very few have double RFMO membership in the Southeast Pacific will complicate institutional interplay management between institutions in this region. This situation in the Southeast Pacific is very different from the situation found in the North-East Atlantic where NEAFC and OSPAR share all but one member State and most of them are members of the EU.²⁸⁴ This membership

²⁸² UNFSA art 8.3.

²⁸³ Belize, Bermuda, Bulgaria, Canada, Cook Islands, Costa Rica, Cuba, Cyprus, Estonia, Faroe Islands, France, Georgia, Germany, Ghana, Honduras, Latvia, Liberia, Lithuania, Netherlands, Poland, Russian Federation, Saint Vincent and the Grenadines, Ukraine, Uruguay, and the USA.

²⁸⁴ Only two countries (Russian Federation and Switzerland) are not members of both institutions. See: K Hoydal, D Johnson, and A H Hoel, ‘Regional Governance: The Case of NEAFC and OSPAR’ in Serge M Garcia, Jake Rice and Anthony Charles (eds), *Governance of Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution* (Wiley-Blackwell, 2014) 225.

commonality has been highlighted as promoting the level and advances in regional cooperation in the North-East Atlantic region.²⁸⁵

Table 4.1: Common Member States between IATTC and SPRFMO

IATTC members only	IATTC and SPRFMO common members	SPRFMO members only
Canada	Belize	Australia
<i>Colombia</i>	European Union	<i>Chile</i>
Costa Rica	China	Cook Islands
<i>Ecuador</i>	Republic of Korea	Cuba
El Salvador	Taiwan Province of China	Kingdom of Denmark
France	Vanuatu	New Zealand
Guatemala		Russian Federation
Japan		
Kiribati		
Mexico		
Nicaragua		
Panama		
<i>Peru</i>		
USA		
Venezuela		

Note: States in bold and italic are members of CPPS.

4.6.4 Decision-Making

As management bodies, IATTC and SPRFMO can make conservation and management decisions as well as adopt rules and regulations on compliance and enforce these measures. All decisions under IATTC and SPRMO are to be taken by consensus.²⁸⁶ In the case of IATTC, if one member State opposes a decision, then the decision cannot be imposed on member States and cannot be passed.²⁸⁷ IATTC does not have an objection

²⁸⁵ Nele Matz-Lück and Johannes Fuchs, 'The Impact of OSPAR on Protected Area Management Beyond National Jurisdiction: Effective Regional Cooperation or a Network of Paper Parks?' (2014) 49 *Marine Policy* 155.

²⁸⁶ *IATTC Antigua Convention* art 9; *SPRFMO Convention* art 16.

²⁸⁷ Consensus is defined in the *IATTC Antigua Convention* as: 'the adoption of a decision without voting and without the expression of any stated objection' (art 1.5).

procedure as is the case for SPRFMO.²⁸⁸ This rigidity in the decision-making process can hamper the progress of the Commission and progress towards the adoption of relevant conservation and management measures.²⁸⁹

SPRFMO offers a variant to the strict consensus-based process by allowing questions of procedure to be taken by a majority of votes and questions of substance by a three-fourths majority in cases where consensus cannot be reached.²⁹⁰ This allows for more flexibility and accelerates the decision-making process. The decisions regarding questions of substance are legally binding on member States, except if member States object to them within 60 days.²⁹¹ The only permissible ground for objecting to a decision taken by SPRFMO is if this decision is discriminatory or inconsistent with provisions under the LOSC or UNFSA.²⁹² However, although member States have a right to object, they are required to: ‘(i) specify in detail the grounds for [their] objection; (ii) adopt alternative measures that are equivalent in effect to the decision to which [they have] objected and have the same date of application; and (iii) advise the Executive Secretary of the terms of such alternative measures’.²⁹³

The nature of these alternative measures in terms of their equivalence to the original measures adopted by SPRFMO is not specified in the SPRFMO Convention. These objections will be reviewed by a multilateral Review Panel consisting of three fisheries experts appointed from the FAO experts list and three further members, one appointed by the SPRFMO Chairperson, one by the objecting member State and one appointed in agreement by the SPRFMO Chairperson and the objecting member State.²⁹⁴ This is an innovative process that only newer RFMOs have integrated within their conventions, showing a willingness on the part of SPRFMO and other newer RFMOs to make the decision-making process more effective and management measures less likely to be

²⁸⁸ McDorman, above n 86, 431.

²⁸⁹ The use of a consensus-based decision-making process in some RFMOs is seen as being an ineffective management practice as States can, despite having to apply the precautionary and ecosystem approaches, use the lack of scientific certainty to object to and therefore block the development and implementation of management and conservation measures. See, eg: Robin Warner, *Protecting the Oceans Beyond National Jurisdiction: Strengthening the International Law Framework* (Martinus Nijhoff, 2009); High Seas Task Force, ‘Closing the Net: Stopping Illegal Fishing on the High Seas’ (Report, Governments of Australia, Canada, Chile, Namibia, New Zealand and the United Kingdom, WWF, IUCN and the Earth Institute at Columbia University, 2006); Lodge et al, above n 70, x; Jeff A Ardron et al, ‘The Sustainable Use and Conservation of Biodiversity in ABNJ: What Can Be Achieved Using Existing International Agreements?’ (2014) 49 *Marine Policy* 98; McDorman, above n 86; Rayfuse, above n 69.

²⁹⁰ *SPRFMO Convention* art 16.2.

²⁹¹ *Ibid* art 17.1 and art 17.2a.

²⁹² *Ibid* art 17.2c.

²⁹³ *Ibid* art 17.2b.

²⁹⁴ *Ibid* annex II para 1.

blocked or avoided by a minority of member States.²⁹⁵ SPRFMO therefore aims to guarantee fairness in the application of its conservation and management measures by its member States and also aims to guarantee the strength of management measures to be implemented in the SPRFMO Convention Area.

The ability to avoid or opt out of governance decisions and management measures by member States of RFMOs and the sometimes slow process involved in making decisions through consensus have been highlighted as contributing to the problem of RFMOs not achieving their objective of sustainably managing fish stocks under their Convention Area.²⁹⁶ Other issues contributing to this problem are the lack of adoption of rigorous management measures by RFMOs as well as the fact that these management measures are not always science-based. Another issue is the lack of implementation of and compliance with RFMO adopted measures.²⁹⁷

Several States currently fishing in the Southeast Pacific are not parties to the LOSC or the UNFSA and, although they are members of RFMOs and therefore bound by their rules and hence indirectly bound by LOSC and UNFSA provisions, they may influence decisions adopted by their respective RFMOs so that these decisions ‘may not be fully consistent with the wording or spirit of UNFSA’ or the LOSC (see Table 4.2; Appendices C and D).²⁹⁸ Within IATTC, 58 per cent of States, both members and cooperating non-members, are non-parties to either the LOSC or UNFSA or to both while this number reaches 42 per cent within SPRFMO. In both institutions, most of the States currently fishing in the Southeast Pacific are either non-parties to the UNFSA or non-parties to both the LOSC and the UNFSA.

²⁹⁵ Schiffman, above n 273, 212. Schiffman highlights similar decision-making processes within SEAFO and WCPFC.

²⁹⁶ McDorman, above n 86, 425.

²⁹⁷ Ibid.

²⁹⁸ McDorman, above n 86, 427.

Table 4.2: List of IATTC and SPRFMO States and their Treaty Membership

	IATTC	SPRFMO
Parties to both the LOSC and the UNFSA	Belize; Canada; Costa Rica; France; <i>Indonesia</i> ; Japan ; Kiribati; Republic of Korea ; <i>Liberia</i> ; Panama	Australia; Belize; Cook Islands; Faroe Islands; Republic of Korea ; New Zealand; Russian Federation
Non-Parties to the LOSC	USA	-
Non-Parties to the UNFSA	<i>Bolivia</i> ; China ; Ecuador ; Guatemala ; <i>Honduras</i> ; Mexico ; Nicaragua ; Taiwan Province of China ; Vanuatu	Chile ; China; Cuba; Taiwan Province of China ; Vanuatu
Non-Parties to both the LOSC and the UNFSA	Colombia ; El Salvador; Peru ; Venezuela	-

Note: States in bold are the ones currently fishing in the Southeast Pacific according to FAO data. States in italic are IATTC's cooperating non-members.

Decisions taken by IATTC and SPRFMO are legally binding on their member States.²⁹⁹ In the case of IATTC, member States must adopt compliance and enforcement measures to ensure that adopted decisions and measures are implemented by their nationals. In cases of implementation breaches, sanctions must be applied by the member States. Furthermore, member States have to cooperate in deterring other flag States that are undermining the work of the Commissions.³⁰⁰ However, in the case of SPRFMO, the Commission is responsible for adopting appropriate measures to ensure the compliance and enforcement of its decisions.³⁰¹

CPPS is an advisory body that can make recommendations, rather than impose decisions, upon its member States.³⁰² All recommendations have to be adopted by

²⁹⁹ *IATTC Antigua Convention* art 9.7; *SPRFMO Convention* art 17.1. Under SPRFMO, only decisions taken on questions of substance become legally binding on their member States.

³⁰⁰ *IATTC Antigua Convention* art 18.

³⁰¹ *SPRFMO Convention* art 27.

³⁰² All the non-disputed resolutions taken by CPPS are binding on its member States from their adoption date (*CPPS Organisation Convention* art 4).

consensus.³⁰³ CPPS also incorporates an objection procedure, which allows its member States to object to a recommendation and therefore not to have to take account of it until the objection is withdrawn.³⁰⁴ Unlike SPRFMO however, objecting member States do not have to adopt equivalent measures but can keep objecting to this measure indefinitely. This does not invalidate the applicability of this recommendation to the other member States. CPPS imposes sanctions upon member States' nationals and foreign vessels for infringing its recommendations within its area of responsibility.³⁰⁵ It also imposes on its member States the obligation of adopting measures for the control and monitoring of resource exploitation within their national jurisdictions.³⁰⁶

Dispute settlement procedures are provided for by both IATTC and SPRFMO.³⁰⁷ When disputes cannot be resolved by the relevant Parties, they are dealt with by an ad hoc expert panel established within the Commissions. CPPS has no dispute settlement provisions in its statute or rules of procedures.

4.6.5 Cooperation between Regional Institutions of the Southeast Pacific

There is a need for cooperation on conservation of high seas living resources and biodiversity between States and also between regional institutions. When the regional institutions are working on the same issues or within the same geographical scope, there is a need to ensure that there is no duplication of work and that the work of these institutions is complementary and mutually strengthening. The importance of MoUs, participation in other institutions' meetings and collaboration through data and information exchange have been highlighted as important pre-requisites for successful institutional cooperation.³⁰⁸ Another important aspect is collaboration between regional institutions and their international counterparts.

With the exception of CPPS, the other two regional institutions of the Southeast Pacific have a provision on cooperation with other institutions. While IATTC's provision only includes cooperation with other regional and global fishery organisations, SPRFMO's

³⁰³ *CPPS Reglamento* art 12 and art 25; *CPPS Estatuto* art 9 and art 18.

³⁰⁴ *CPPS Organisation Convention* art 4.

³⁰⁵ *Convenio sobre Sistema de Sanciones* [Convention on Sanctions Systems], opened for signature 4 December 1954. Only Peru has ratified this treaty.

³⁰⁶ *Convenio sobre Medidas de Vigilancia y Control de las Zonas Marítimas de los Países Signatarios* [Convention on Measures of Surveillance and Control of Maritime Zones of the Signatory Countries], opened for signature 4 December 1954. Only Ecuador and Peru have ratified this treaty.

³⁰⁷ *IATTC Antigua Convention* art 25; *SPRFMO Convention* art 34.

³⁰⁸ See, eg: Kvalvik, above n 198. See Section 4.5.2 of this chapter for more details on cooperative institutional mechanisms.

provision goes further to include FAO and other UN specialised agencies as well as any other organisations whose work is of relevance to SPRFMO.³⁰⁹

The reasons enunciated for cooperation are similar under IATTC and SPRFMO and involve the need to ensure that the conventions' objectives will be reached and not undermined as well as that the conservation and management measures adopted by these institutions are compatible and harmonised across the region.³¹⁰ Furthermore, IATTC also invokes the need to avoid duplication of work and obtain the best available scientific data while SPRFMO justifies the need to cooperate particularly with a view to combating IUU fishing.³¹¹ Cooperation is to be undertaken by way of institutional and cooperative arrangements.³¹²

4.6.5.1 Meeting Attendance

External observers, particularly non-member States, intergovernmental and non-governmental organisations, can take part in the three institutions' meetings.³¹³ There is limited participation of regional institutions at each other's meetings. IATTC and SPRFMO hold annual Commission meetings while CPPS holds regular assembly meetings every one to two years.³¹⁴

SPRFMO, CPPS as well as FAO have been present at some of the IATTC meetings. The FAO was first present at the 7th annual IATTC meeting and has attended around 24

³⁰⁹ *IATTC Antigua Convention* art 24.1; *SPRFMO Convention* art 31.1.

³¹⁰ *IATTC Antigua Convention* art 24.3: 'Where the Convention Area overlaps with an area under regulation by another fisheries management organization, the Commission shall cooperate with such other organization in order to ensure that the objective of this Convention is reached. To this end, through consultations or other arrangements, the Commission shall strive to agree with the other organization on the relevant measures to be taken, such as ensuring the harmonization and compatibility of the conservation and management measures adopted by the Commission and the other organization, or deciding that the Commission or the other organization, as appropriate, avoid taking measures in respect of species in that area which are regulated by the other'.

SPRFMO Convention art 31.2: 'The Commission shall take account of the conservation and management measures or recommendations adopted by other [RFMOs] and other relevant intergovernmental organisations that have competency in relation to the Convention Area, or in relation to areas adjacent to the Convention Area or in respect of particular living marine resources including non-target and associated or dependent species, and that have objectives that are consistent with, and supportive of, the objective of this Convention. It shall endeavour to ensure that its own decisions are compatible with, and supportive of, such conservation and management measures or recommendations'.

³¹¹ *IATTC Antigua Convention* art 24.1; *SPRFMO Convention* art 31.3.

³¹² *IATTC Antigua Convention* art 24.1; *SPRFMO Convention* art 31.3.

³¹³ The meetings of SPRFMO's Commission and its subsidiary bodies are open to external observers from non-member States, intergovernmental and non-governmental organisations, and the fishing industry (*SPRFMO Convention* art 18). External observers can assist and participate in the meetings of the Assembly and the Working Groups on an occasional or permanent basis provided that their work fits within the realm of CPPS and they may be able to contribute to the development of CPPS' programmes of work and plans of action (*CPPS Estatuto* art 41; *CPPS Reglamento* art 42) Only non-member States, international organisations, non-governmental organisations (NGO) and specialised agencies can become permanent observers at CPPS (*CPPS Reglamento* art 45). Academic institutions and civil society, together with the list mentioned above, can become occasional observers (*CPPS Reglamento* art 46).

³¹⁴ Under *CPPS Reglamento* art 10, ordinary assembly meetings have to take place every two years. Before 2002, CPPS held less frequent meetings.

of the 84 annual meetings organised by IATTC (29 per cent).³¹⁵ CPPS has attended eight (10 per cent) while SPRFMO has only attended one (one per cent)³¹⁶ of these meetings.³¹⁷

During the SPRFMO international consultations meetings that took place between 2006 and 2009, representatives from CPPS attended all of the meetings while representatives from IATTC only attended the first one in 2006. FAO attended the two international consultations meetings in 2006, one in October 2008 and the two final ones in 2009. CPPS and FAO attended the first SPRFMO preparatory conference in 2010 and none of these organisations attended the other two preparatory conferences in 2011 and 2012. CPPS, IATTC and FAO were represented at the first SPRFMO meeting in January 2013. At SPRFMO's second meeting in January 2014, only FAO and CPPS attended the meeting with no IATTC representation.

4.6.5.2 Memoranda of Understanding and Memoranda of Cooperation

To date, no MoUs or MoCs have been signed between the three RFOs of the Southeast Pacific.

IATTC cooperates with the other tuna RFMOs (Commission for the Conservation of Southern Bluefin Tuna (CCSBT), Indian Ocean Tuna Commission (IOTC), International Commission for the Conservation of Atlantic Tunas (ICCAT), and Western and Central Pacific Fisheries Commission (WCPFC)) and FAO through the Kobe Process, although it has only signed a MoU with the WCPFC in 2006.³¹⁸ This MoU is on cooperation and collaboration in the exchange of data and information, undertaking research and promoting harmonisation and compatibility of conservation and management, as well as monitoring measures regarding species of mutual interest.³¹⁹ These institutions have since signed two further MoUs on observer cross-

³¹⁵ FAO attended the following meetings: 7th meeting (1955); 13th meeting (1961); 15th meeting (1962); 16th meeting (1963); 17th meeting (1965); 18th meeting (1966); 19th meeting (1967); 20th meeting (1968); 21st meeting (1969); 23rd meeting (1971); 27th meeting (1972); 29th meeting (1973); 32nd meeting (1975); 37th meeting (1979); 40th meeting (1982); 41st meeting (1983); 43rd meeting (1985); 46th meeting (1989); 51st meeting (1993); 53rd meeting (1994); 61st meeting (1998); 66th meeting (2000); 70th meeting (2003); and 81st meeting (2010).

³¹⁶ SPRFMO attended the following meeting: 81st meeting (2010).

³¹⁷ CPPS attended the following meetings: 27th meeting (1972); 36th meeting (1978); 38th meeting (1980); 54th meeting (1994); 63rd meeting (1999); 65th meeting (1999); 68th meeting (2001); 71st meeting (2003).

³¹⁸ See Section 4.2.2.3 of this chapter.

³¹⁹ *Memorandum of Understanding between the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean and the Inter-American Tropical Tuna Commission* (June 2006). Cooperative measures adopted under this MoU include the participation of these institutions at relevant meetings of their counterpart as well as

endorsement and data exchange.³²⁰ IATTC further signed a MoU with the *Inter-American Convention for the Protection and Conservation of Sea Turtles* (IAC) in June 2011 and a MoU with the *Agreement on the Conservation of Albatrosses and Petrels* (ACAP) in July 2011.³²¹ The IATTC also informally cooperates with other regional institutions, such as the Forum Fisheries Agency (FFA), CPPS and OLDEPESCA, non-governmental organisations such as the World Wide Fund for Nature (WWF), and scientific organisations.

CPPS has signed a total of 32 MoUs with universities, international organisations and programmes as well as financial and scientific institutions. Amongst them and of relevance to this thesis, CPPS has signed MoUs with:

- FAO in 1985 to formally establish a cooperative and informative exchange between the two organisations and guarantee mutual support in the development of the fisheries in the Southeast Pacific, particularly in terms of capacity building and information/data exchanges;³²²
- The CBD in 1998, which includes information and data exchange and activity coordination with regard to the application and promotion of the 1995 Jakarta Mandate;³²³
- UNEP in 2000 to identify socio-economic opportunities to improve wastewater management, and in 2005 to help with the implementation of the Regional Action Plan on Land-Based Activities, particularly focusing on marine litter management;³²⁴
- The Secretariat of the South Pacific Regional Environment Programme (SPREP) in 2001 on institutional cooperation, including the sharing of information and

the meetings of its subsidiary bodies and the establishment of a WCPFC-IATTC Consultative Meeting. This MoU involves the cooperation and participation of the Secretariat of the Pacific Community (SPC) through the sharing of scientific data.

³²⁰ *Memorandum of Cooperation (MOC) on the Cross-Endorsement of WCPFC and IATTC approved Observers when observing on the High Seas of the Convention Areas of both Organizations* (2009); *Memorandum of Cooperation on the Exchange and Release of Data between the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean and the Inter-American Tropical Tuna Commission* (2009).

³²¹ The IAC MoU was signed at the 5th IAC COP, which took place in Bonaire in June 2011. The ACAP MoU was signed at La Jolla, USA on 14 July 2011.

³²² *Acuerdo de Cooperación entre la Comisión Permanente del Pacífico Sur y la Organización de las Naciones Unidas para la Agricultura y la Alimentación* (1985).

³²³ *Memorandum de Cooperación entre la Secretaría del Convenio sobre la Diversidad Biológica y la Secretaría de la Comisión Permanente del Pacífico Sur* (1998). The *Jakarta Mandate on Marine and Coastal Biological Diversity* was adopted in: Convention on Biological Diversity, Decision Adopted by the Second Meeting of the Conference of the Parties, UNEP/CBD/COP/2/19 Decision II/10, Conference of the Parties to the Convention on Biological Diversity, 2nd meeting (30 November 1995). This ministerial statement highlighted the importance of the conservation and sustainable use of marine and coastal biodiversity and the need for the CBD COP to address it.

³²⁴ *Memorandum of Understanding between the Permanent Commission for South Pacific (CPPS) and the United Nations Environment Programme (UNEP)* (2000). This MoU expired in February 2001. *Memorandum of Understanding between The Permanent Commission for the South Pacific, The United Nations Environment Programme UNEP/Regional Seas* (2005). This MoU expired at the end of 2006.

development of joint research, monitoring, management, conservation and educational activities in marine and coastal environmental protection and the coordination of meetings to assess the state of the marine environment within the South Pacific;³²⁵

- The Secretariat of the Basel Convention in 2002 on institutional cooperation, including the sharing of information and the coordination of activities towards the control of transboundary movements and the disposal of hazardous wastes and participation at each other's meetings as well as for technical support from the Secretariat of the Basel Convention;³²⁶
- United Nations Educational, Scientific and Cultural Organization (UNESCO)'s Intergovernmental Oceanographic Commission (IOC) in 2003, renewed in 2008, to promote marine climate research cooperation across CPPS' member States, particularly focusing on the study of the El Niño-Southern Oscillation (ENSO) climatic variation and including cooperation on data exchange, compilation and analysis;³²⁷
- IMO in 2009;³²⁸
- Conservation International (CI) Ecuador in 2011 to cooperate on activity coordination in the Southeast Pacific and for technical and financial support from CI;³²⁹ and
- The Central American Fisheries and Aquaculture Organization (OSPESCA) in 2014 to promote and ensure the sustainable use and management of fishery resources and aquaculture.³³⁰

Established in 2012, SPRFMO does not have any MoUs with other institutions at present. It is very likely to enter into such cooperative agreements in the future,

³²⁵ *Memorandum of Cooperation between The Secretariat of the South Pacific Regional Environment Programme and The Secretariat of the Permanent Commission for the South Pacific SPREP/PROE-CPPS* (2001).

³²⁶ *Memorandum de Cooperación entre la Secretaría del Convenio de Basilea sobre el Control de los Movimientos Transfronterizos de Desechos Peligrosos y su Eliminación y la Secretaría General de la Comisión Permanente del Pacífico Sur* (2002). This MoU expired in 2007.

³²⁷ *Cooperation Agreement between the Intergovernmental Oceanographic Commission (IOC) and the Permanent Commission for the South Pacific (CPPS)* (2003). It was renewed in 2008 through the *Acuerdo de Cooperación entre la Comisión Oceanográfica Intergubernamental (UNESCO/COI) y la Comisión Permanente del Pacífico Sur (CPPS)* (2008). See: art 2, art 4 and art 5.

³²⁸ *Memorando de Entendimiento entre la Comisión Permanente del Pacífico Sur y la Organización Marítima Internacional (OMI) e intercambio de Notas para extensión de ME* (2009). This MoU expires at the end of 2016.

³²⁹ *Convenio Marco de Cooperación entre la Comisión Permanente del Pacífico Sur (CPPS) y Conservation International Foundation Ecuador (CI)* (2011).

³³⁰ *Memorando de Entendimiento y Cooperación entre la Comisión Permanente del Pacífico Sur y la Organización del Sector Pesquero y Acuicola del Istmo Centroamericano* (2014).

particularly with other RFMOs with the objective of eliminating IUU fishing.³³¹ At its second Commission meeting in January 2014, SPRFMO decided to explore the possibility of signing a MoU on data exchange with the ACAP.³³²

4.6.5.3 Information and Data Exchanges

All three institutions use their own scientific information as their knowledge base. They do not have an external organisation, such as PICES in the North Pacific or ICES in the North Atlantic, providing them with scientific support. There are no documents, which would indicate collaboration in information and data exchanges between the three institutions.

4.7 Conclusion

The duty to cooperate and to conserve high seas living resources is institutionalised at the regional level through the establishment of RFMOs. They serve as cooperative mechanisms to facilitate and enhance regional cooperation between States with the aim of conserving and managing high seas living resources, particularly highly migratory and straddling fish stocks. The strengthening of RFMOs' mandates, dealing with their current shortcomings – particularly the lack of implementation of, compliance with and enforcement of management measures, ineffective decision-making processes and lack of capacity and political will – and inter-sectoral cooperation will be important if RFMOs are to fully contribute to high seas biodiversity conservation at the regional level.

Although there are no direct legal obligations for regional institutions to collaborate and cooperate between themselves, the duty for States to cooperate implicitly involves inter-institutional cooperation and collaboration to fulfil their conservation duties. As institutions play an important role in driving and responding to environmental change, the management of their interplay is important to create synergistic overlaps and to optimise each institution's function to improve overall governance. Interplay can be positively enhanced by increasing the coordination and interactions between institutions

³³¹ *SPRFMO Convention* art 31.3.

³³² SPRFMO, 'Report of the Second Meeting of the Commission of the South Pacific Regional Fisheries Management Organisation' (Report, SPRFMO, 27-31 January 2014) para 15.

and by working on policy integration, which will reduce any negative overlaps and conflicts.

Such increased institutional coordination can be achieved through formal institutional cooperation, which can include the signing of MoUs or MoCs to clarify institutions' competences, regular contact between institutions' secretariats, cooperation between institutions' committees, and meeting participation. Alternatively it can be achieved through more concrete cooperative measures involving integrated institutional management, which could involve the development of a common science platform or other procedural or regulatory coordination. Finally it can also be attained through integrated political management, involving institutional and political management and cooperation.

Three RFOs have jurisdiction over parts of the Southeast Pacific: two RFMOs, IATTC regulating tuna and tuna-like species and SPRFMO regulating non-tuna species, and one RSO, CPPS. Their overlap is of a jurisdictional rather than functional nature, as their geographical scope and species coverage do not completely overlap but rather are complementary. This means that there should be no conflict in their mandate. This complementarity is a strength that can be used positively to improve the management of high seas living resources and the conservation of high seas biodiversity in the Southeast Pacific. However, cooperation and collaboration between these three regional institutions to date has been largely minimal or non-existent. No formal cooperative arrangements have been established between them, although they have shown intentions to cooperate, at least informally. Participation at each other's meetings has also been limited.

In comparison to the progress that has been made in some regions such as the North-East Atlantic on cooperation and collaboration between RFMOs and with RSOs, the analysis in this chapter shows that such cooperation and collaboration is not yet fully developed for the Southeast Pacific. It requires time to build trust and confidence and may need respected individuals to show leadership.

5 METHODOLOGICAL BACKGROUND TO THE REGIONAL INSTITUTIONAL ANALYSIS ON THE DUTY TO CONSERVE

5.1 Introduction

The duty to conserve high seas living resources under international law forms, together with the duty to cooperate, the basis for the conservation and sustainable use of high seas resources and biodiversity. As described in Section 3.3.2.4 of Chapter 3, the creation of regional institutions is required under international law as cooperative mechanisms for the adoption of management measures, including compliance and enforcement measures, for the management and conservation of high seas living resources and hence for the conservation of high seas biodiversity.¹

This chapter and Chapter 6 focus on the regional institutional approach to the conservation of high seas biodiversity in the Southeast Pacific, addressing the duty of States to conserve marine biodiversity in areas beyond national jurisdiction (ABNJ) and how this obligation has been implemented in this region. These two chapters assess the extent to which the regional fisheries management organisations (RFMOs) of the Southeast Pacific have incorporated global legal measures pertinent to high seas biodiversity conservation into their conventions and implemented them, providing the basis for the analysis in Chapter 7, which assesses the adequacy of the institutional framework of the Southeast Pacific for the conservation of high seas biodiversity. This chapter provides the methodological background to this analysis.

5.2 Studies on RFMO Performance and Practice

To date, several studies on RFMO performance have looked at how RFMOs, in their capacity as managers of certain fish stocks within their area of competency, are performing at managing these stocks and the impact of fisheries activities on other

¹ *United Nations Convention on the Law of the Sea*, opened for signature 10 December 1982, ATS 31 (entered into force 16 November 1994) ('*LOSC*') art 63.2, art 64, art 118 and art 197; *United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, opened for signature 8 September 1995, ATS 8 (entered into force 11 December 2001) ('*UNFSA*') art 8.5; United Nations Food and Agriculture Organization, *Code of Conduct for Responsible Fisheries* (1995) ('*Code of Conduct*') art 7.1.3. As defined in Section 3.3.2.1 of Chapter 3, biological resources and living resources are used interchangeably in this chapter to denote the 'tangible biotic components of ecosystems' (Lyle Glowka et al, 'A Guide to the Convention on Biological Diversity' (Report, IUCN, 1994) 16). They are, as per the definition provided by the CBD, a component of biodiversity.

associated and dependent species.² These studies have also examined how RFMOs are responding to calls from the international community to undertake regular performance reviews and strengthen their mandates to incorporate modern environmental principles, such as the precautionary approach and an ecosystem approach in the management of their stocks including through bycatch mitigation and biodiversity obligations.³ These studies have also looked at challenges to RFMOs effectively managing stocks under their responsibility. These challenges encompass governance, participation and allocation issues, relations with non-members, decision-making processes and transparency.⁴ One study has also looked into the application of trade and market

² Sarika Cullis-Suzuki and Daniel Pauly, 'Failing the High Seas: a Global Evaluation of Regional Fisheries Management Organization' (2010) 34 *Marine Policy* 1036; Sarika Cullis-Suzuki and Daniel Pauly, 'Evaluating Global Regional Fisheries Management Organizations: Methodology and Scoring' (Working Paper No 2009-12, UBC Fisheries Centre, 2009); Marika Ceo et al, 'Performance Reviews by Regional Fishery Bodies: Introduction, Summaries, Synthesis and Best Practices. Volume I: CCAMLR, CCSBT, ICCAT, IOTC, NAFO, NASCO, NEAFC' (FAO Fisheries and Aquaculture Circular No 1072, FAO, 2012).

³ See, eg: Juan Manuel Gómez-Robledo and Robert Hill, *Letter dated 15 May 2008 from the Co-Chairpersons of the Ad Hoc Open-ended Informal Working Group to Study Issues Relating to the Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction Addressed to the President of the General Assembly*, A/63/79, United Nations General Assembly, 63rd sess, Item 73 of the preliminary list (16 May 2008) ('2008 BBNJ Report') para 40; Conference on the Governance of High Seas Fisheries and the United Nations Fish Agreement, *Ministerial Meeting* (1-5 May 2005) <http://www.dfo-mpo.gc.ca/fgc-cgp/conf_report_e.htm#a> (accessed: 10 January 2015); United Nations General Assembly, *Report of the Review Conference on the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, A/CONF.210/2006/15, Review Conference on the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (5 July 2006) para 60, para 87, para 88, para 90 and annex para 21, para 32 and para 43; United Nations General Assembly, *Report of the Resumed Review Conference on the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, A/CONF.210/2010/7, Review Conference on the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (27 July 2010) para 24, para 35, para 41, para 70, para 73, para 74, para 78, para 100, para 102, para 107, para 130, para 134, and para 147; Paul de Bruyn, Hilario Murua and Martín Aranda, 'The Precautionary Approach to Fisheries Management: How is This Taken into Account by Tuna Regional Fisheries Management Organisations (RFMOs)' 38 *Marine Policy* 397; Marjorie L Mooney-Seus and Andrew A Rosenberg, 'Regional Fisheries Management Organizations: Progress in Adopting the Precautionary Approach and Ecosystem-Based Management' (Recommended Best Practices for Regional Fisheries Management Organizations: Technical Study No 1, Chatham House, 2007); M Cecilia Engler, *Establishment and Implementation of a Conservation and Management Regime for High Seas Fisheries, with Focus on the Southeast Pacific and Chile: From Global Developments to Regional Challenges* (UN-Nippon Foundation Fellowship, 2007); Eric L Gilman, 'Bycatch Governance and Best Practice Mitigation Technology in Global Tuna Fisheries' (2011) 35 *Marine Policy* 590; Eric Gilman, Kelvin Passfield and Katrina Nakamura, 'Performance Assessment of Bycatch and Discards Governance by Regional Fisheries Management Organizations' (Report, IUCN, 2012); Convention on Biological Diversity, *Report of Joint Expert Meeting on Addressing Biodiversity Concerns in Sustainable Fisheries*, UNEP/CBD/SBSTTA/16/INF/13, Subsidiary Body on Scientific Technical and Technological Advice, 16th meeting, Item 6.2 of the Provisional Agenda (5 March 2012) ('*Biodiversity Concerns Report*'). However, to date, only a few RFMOs have undertaken performance reviews and have strengthened their mandates (see Section 4.2.2.1 in Chapter 4). The five tuna RFMOs have agreed at the first Kobe meeting in 2007 to undertake a performance review of their respective organisations ('Attachment on RFMO Performance Review' (Report of the Joint Meeting of Tuna RFMOs Appendix 14 TunaRFMOs2007/16, 22-26 January 2007). However, out of these five RFMOs, IATTC is, to date, the only one that hasn't undertaken a review of its organisation.

⁴ Are K Sydnes, 'Regional Fishery Organizations: How and Why Organizational Diversity Matters' (2001) 32(4) *Ocean Development and International Law* 349; Pedro Pintassilgo et al, 'Stability and Success of Regional Fisheries Management Organizations' (2010) 46 *Environmental and Resource Economics* 377; Judith Swan, 'Regional Fishery Bodies and Governance: Issues, Actions and Future Directions' (FAO Fisheries Circular No 959, FAO, 2000); Elisabeth Druel et al, 'Governance of Marine Biodiversity in Areas Beyond National Jurisdiction at the Regional Level: Filling the Gaps and Strengthening the Framework for Action. Case Studies from the North-East Atlantic, Southern Ocean, Western Indian Ocean, South West Pacific and the Sargasso Sea' (IDDRI Study No 04/12, IDDRI, 2012); Eric Gilman and Eric Kingma, 'Standard for Assessing Transparency in Information on Compliance with Obligations of Regional Fisheries Management Organizations: Validation through Assessment of the Western and Central Pacific Fisheries Commission' (2013) 84 *Ocean and Coastal Management* 31; Nichola Clark, *An Analysis of the Transparency of Marine Governance Organizations* (Master Thesis, Duke University, 2014); Erik Jaap Molenaar, 'Participation, Allocation and Unregulated Fishing: The Practice of Regional Fisheries Management Organisations' (2003) 18(4) *The International Journal of Marine and Coastal Law* 457; Daniel Owen, 'Practice of RFMOs Regarding Non-Members' (Recommended Best Practices for Regional Fisheries Management Organizations: Technical Study No 2, Chatham House, 2007); Ted L McDorman, 'Implementing Existing Tools: Turning Words into Actions – Decision-Making Processes of Regional Fisheries Management Organisations (RFMOs)' (2005) 20(3) *The International Journal of Marine and Coastal Law* 423; Judith Swan, 'Decision-Making

measures by RFMOs.⁵ In 2007, an independent high-level panel was commissioned by Chatham House to study practices and standards in RFMOs.⁶ By comparing and assessing RFMOs against each other and in the light of international legal fisheries instruments, Lodge et al developed a set of recommended best practices and minimum standards that can be used as model criteria against which RFMO performance can be assessed to improve governance of these organisations.⁷

The study looking into the incorporation of biodiversity components in RFMOs was undertaken as a background study for the 2011 Joint Expert Meeting on Addressing Biodiversity Concerns in Sustainable Fisheries organised by the *Convention on Biological Diversity* (CBD).⁸ This study focused exclusively on non-tuna RFMOs and looked at four biodiversity concerns, namely whether predation, food web dynamics, bycatch mortality and impacts on seafloor habitats were considered in stock assessments.⁹ It concluded that: a) parameters such as recruitment, natural mortality and growth, are not often estimated directly in stock assessments and, in cases when they are, predator impacts, food support or environmental conditions are rarely taken directly into account; b) most of the time, bycatch composition is reported but rarely actively managed; c) habitat impacts are rarely considered in stock assessments or managed; d) biodiversity requirements are broadly considered within RFMO conventions and policies; e) more mature RFMOs tend to adopt more explicit and complete implementation provisions on trophic relationships and dependencies, bycatch, and vulnerable marine ecosystems (VMEs).¹⁰ The overall conclusion from this study is that RFMOs appear largely to have incorporated biodiversity obligations into their conventions, policies and management measures but there is still a need to ensure that such decisions are implemented, resulting in sustainable outcomes.¹¹

in Regional Fishery Bodies or Arrangements: The Evolving Role of RFBS and International Agreement on Decision-Making Processes' (FAO Fisheries Circular No 995, FAO, 2004).

⁵ Richard Tarasofsky, 'Enhancing the Effectiveness of Regional Fisheries Management Organizations through Trade and Market Measures' (Briefing Paper, Chatham House EEDP BP 07/04, May 2007).

⁶ Michael W Lodge et al, 'Recommended Best Practices for Regional Fisheries Organizations: Report of an independent panel to develop a model for improved governance by Regional Fisheries Management Organizations' (Report, Chatham House, 2007).

⁷ Kristina M Gjerde et al, 'Ocean in Peril: Reforming the Management of Global Ocean Living Resources in Areas Beyond National Jurisdiction' (2013) 74 *Marine Pollution Bulletin* 540.

⁸ *Biodiversity Concerns Report*.

⁹ Convention on Biological Diversity, *Background Study to Review the Extent to which Biodiversity Concerns are Addressed in Existing Assessments*, UNEP/CBD/JEM.BC-SF/1/2, Joint Expert Meeting on Addressing Biodiversity Concerns in Sustainable Fisheries, Bergen, Norway, 7-9 December 2011 (1 December 2011) ('*Biodiversity Concerns Background Study*') 2.

¹⁰ Ibid 5, 7, 8, 10.

¹¹ Ibid 12.

5.3 Uniqueness and Particularities of this Thesis

The studies highlighted above focus on the governance and performance of RFMOs in fisheries management. The best practices and minimum standards developed by Lodge et al in their analysis are based on fisheries management practice and do not incorporate the wider biodiversity instruments.¹² Even the CBD/United Nations Environment Programme (UNEP) Fisheries Expert Group study on biodiversity considerations in sustainable fisheries addresses only four biodiversity obligations and looks at them from a fisheries management perspective.¹³

This thesis proposes a different approach than the ones previously adopted to the evaluation of RFMO performance, namely an analysis of these organisations' law and policy frameworks from a broad biodiversity conservation perspective. Using all relevant soft and hard law provisions of international law pertinent to the conservation of high seas biodiversity as benchmark criteria, this thesis assesses the extent to which the RFMOs of the Southeast Pacific have incorporated these global legal measures into their conventions and implemented them. Hence, this thesis does not focus on how well these RFMOs manage fisheries within their Convention Area but rather the extent to which biodiversity obligations are incorporated into their conventions, policies and resolutions. Another unique aspect of this thesis is that it examines one particular region rather than having a broader RFMO approach and, by focusing on the Southeast Pacific, provides the first analysis of the regional institutional framework for this region. This thesis also focuses on the Inter-American Tropical Tuna Commission (IATTC) and the South Pacific Regional Fisheries Management Organisation (SPRFMO), two RFMOs which have not yet undertaken their performance review.

This thesis' analysis of the incorporation of biodiversity obligations in RFMOs law and policy frameworks has been split over two chapters. This chapter provides the necessary methodological background to the analysis, focusing on how it has been constructed and undertaken and how the relevant global legal measures for the conservation of high seas biodiversity have been selected, categorised and analysed. Chapter 6 then provides the results of this analysis, looking at how IATTC, SPRFMO and the Comisión Permanente del Pacífico Sur (CPPS) include biodiversity obligations within their conventions and to

¹² Lodge et al, above n 6.

¹³ *Biodiversity Concerns Background Study*.

what extent they implement them in their policies. Overall, this analysis allows for the identification of key challenges in the implementation and enforcement of globally agreed biodiversity conservation measures that will be discussed in Chapter 7.

The overall objectives of the analysis undertaken in Chapters 5 and 6 are to:

- 1) Identify and categorise the global hard and soft law provisions relevant to the conservation of high seas biodiversity that have to be implemented by States either directly or through an institution;
- 2) Evaluate the extent to which these global legal provisions have been integrated into the conventions of the three regional fisheries organisations (RFOs) of the Southeast Pacific; and
- 3) Assess the extent to which these global legal provisions are being implemented through the three RFOs of the Southeast Pacific.

Specifically, for this chapter, the objectives are to:

- 1) Identify the global hard and soft law provisions relevant to the conservation of high seas biodiversity;
- 2) Categorise these global legal provisions by their grouping ('scientific data', 'fisheries/biodiversity measures' or 'protection of the marine environment'), nature (hard or soft law) and targeted audience (directed directly at flag or port States or at institutions); and
- 3) Assess whether the identified global legal provisions relevant to the conservation of high seas biodiversity are comprehensive enough to conserve the two tangible components of high seas biodiversity, namely biological resources and ecosystems.

5.4 Analysis Methodology

As outlined in Section 3.3.2.1 of Chapter 3, the conservation of biodiversity can only be achieved by conserving biological, or living, resources and ecosystems.¹⁴ This means that for high seas biodiversity conservation to be successful, it needs to take into

¹⁴ Glowka et al, above n 1, 16. The Convention on Biological Diversity defines biological resources as including 'genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity' and ecosystems as 'a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit' (*Convention on Biological Diversity*, opened for signature 5 June 1992, ATS 32 (entered into force 29 December 1993) ('CBD') art 2). Biological resources, also known as living resources, are the biotic components of ecosystems, both of which are components of biodiversity.

account both the conservation and sustainable use of high seas living resources and the protection of the marine environment.

This chapter focuses on the global legal provisions adopted in hard and soft law agreements that are relevant for the conservation of high seas living resources and the protection of the marine environment. This analysis assesses the nature of these provisions, whether they are legally binding or not, and the way these measures are to be implemented by States, through regional institutions, flag States or port States.

All conservation and management provisions relevant to high seas biodiversity conservation were taken from hard and soft law instruments, ranging from treaties and agreements to ministerial declarations and memoranda of understanding.¹⁵ Socio-economic incentive measures, awareness and education programmes as well as specific measures for developing States, including the need to incorporate financial institutions, are excluded from this analysis as they fall outside of the scope of this thesis. Furthermore, measures that are specifically designed to be implemented exclusively at the national level or within national jurisdiction are also excluded from the analysis. The main focus of the analysis will be on management measures, which includes both conservation and compliance measures, as RFMOs are not specifically designed to widely include the protection of the marine environment. The section on marine environmental protection will be less specific and will address principally the main conservation provisions outlined in the *United Nations Convention on the Law of the*

¹⁵ With the exception of the CBD, only treaties which apply to areas beyond national jurisdiction are considered. While the CBD does not provide for contracting States to have jurisdictional competency over the components of high seas biodiversity (CBD art 4), contracting States do have a duty to cooperate in conserving high seas biodiversity (art 5). The legal documents analysed in this chapter are: the 1982 *LOSC*; the 1992 *CBD*; the 1995 *UNFSA*; the 1995 *Code of Conduct*; *Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas*, opened for signature 29 November 1993, ATS 26 (entered into force 24 April 2003) ('*Compliance Agreement*'); *United Nations Food and Agriculture Organization*, 'International Plan of Action for the Management of Fishing Capacity' (1999) ('*IPOA-Capacity*'); *United Nations Food and Agriculture Organization*, 'International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries' (1999) ('*IPOA-Seabirds*'); *United Nations Food and Agriculture Organization*, 'International Plan of Action for the Conservation and Management of Sharks' (1999) ('*IPOA-Sharks*'); *United Nations Food and Agriculture Organization*, 'International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing' (2001) ('*IPOA-IUU*'); *United Nations Conference on Environment and Development*, 'Agenda 21' (1992) ('*Agenda 21*'); *United Nations General Assembly*, *Report of the United Nations Conference on Environment and Development*, A/CONF.151/26 (Vol. I) (12 August 1992) annex I ('*Rio Declaration on Environment and Development*') ('*Rio Declaration*'); *Declaration of the United Nations Conference on the Human Environment* (1972) <<http://www.unep.org/Documents.Multilingual/Default.asp?documentid=97&articleid=1503>> (accessed: 12 March 2015) ('*Stockholm Declaration*'); *World Summit on Sustainable Development*, *Johannesburg Plan of Implementation* (2002) ('*JPOI*'); *United Nations General Assembly*, *The Future We Want*, GA Res 66/288, 66th sess, Agenda Item 19, A/RES/66/288 (11 September 2012) ('*The Future We Want*'); *Convention on the Conservation of Migratory Species of Wild Animals*, opened for signature on 23 June 1979, ATS 32 (entered into force 11 January 1983) ('*CMS*'); *Convention on International Trade in Endangered Species of Wild Fauna and Flora*, opened for signature 3 March 1973, ATS 29 (entered into force 1 July 1975) ('*CITES*'); *Agreement on the Conservation of Albatrosses and Petrels*, opened for signature 19 June 2001, ATS 5 (entered into force 1 February 2004) ('*ACAP*'); *Memorandum of Understanding on the Conservation of Migratory Sharks* (2010) ('*MoU Sharks*').

Sea (LOSC).¹⁶ Furthermore, the section on scientific data will also be less specific, given the extent of available legal measures and recommendations. The general scope of the research and data collection undertaken here is primarily based on the LOSC, the *United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks* (UNFSA) and the CBD.

The LOSC is the umbrella convention for all legal matters related to the oceans, with many other hard and soft law agreements complementing it. It provides the basic legal framework for the conservation of high seas living resources and the protection of the marine environment. As such, the LOSC was used as a basis for the categorisation of the global legal provisions relevant to the conservation of high seas biodiversity. In Section 2 of Part VII, the LOSC highlights two basic duties of States in the conservation of high seas living resources. Firstly, States must contribute and exchange scientific data relevant to the conservation of fish stocks through regional or global institutions.¹⁷ Secondly, States have to adopt non-discriminatory conservation measures, either individually or through cooperation, for the conservation of high seas living resources.¹⁸ Part XII of the LOSC provides a further duty of States, namely the protection and preservation of the marine environment. Following the above-mentioned classification under the LOSC, the global legal provisions identified across all relevant hard and soft law instruments were divided into the three broader categories: a) scientific data; b) management measures; and c) protection of the marine environment.

The basic legal framework adopted under the LOSC is complemented by other hard and soft law instruments. The provisions of these complementary instruments are either aimed at fisheries management or more generally, biodiversity conservation. In this respect, the two main complementary legally binding agreements are the 1995 UNFSA and the 1992 CBD. To be more specific, the management measures were categorised into two further categories, namely: a) measures aimed explicitly at the management of

¹⁶ These main conservation measures selected for the analysis represent the overall basis on which other more specific legal measures are based. These are generally found in other legal agreements, notably the ones adopted under the umbrella of the International Maritime Organization (IMO).

¹⁷ LOSC art 119.2.

¹⁸ Measures adopted must not discriminate against national or foreign fishermen (Ibid art 119.3).

fisheries (fisheries measures); and b) other measures relevant to biodiversity conservation (biodiversity measures). To facilitate the analysis, the fisheries and biodiversity measures were further broken down into three main themes that were identified when categorising the global legal measures (Figure 5.1). In this chapter, the hard and soft law provisions relevant to high seas biodiversity conservation that States must implement will be described for each of the above-mentioned categories. Within each category, the main themes into which the provisions can be categorised will be described and whose responsibility it is to implement them identified.

Figure 5.1 summarises the conservation measures that have to be adopted under international law, with the green square highlighting the basic obligations under the LOSC. Apart from the mandatory determination of an allowable catch, the LOSC does not provide a list of conservation measures to be adopted and implemented by States.¹⁹ Rather, it provides guidelines on the types of measures that need to be adopted for the conservation of high seas living resources. Measures have to: a) be based on the best scientific evidence available at the time; b) be aimed at maintaining or restoring harvested species populations at levels which can produce the maximum sustainable yield (MSY); c) take into consideration associated and dependent species and ensure that their population levels remain above levels at which their reproduction may become seriously threatened; and d) take into account fishing patterns, the interdependence of stocks and international minimum standards.²⁰ In other words, both directly harvested species and other species that are part of the same ecosystem and, therefore, dependent on these harvested species need to be taken into account when adopting and implementing conservation measures on the high seas. As Figure 5.1 shows, the LOSC only provides a basic conservation and management framework that needs to be complemented by other hard and soft law instruments.

¹⁹ Ibid art 119.1. This is also specified in UNFSA in which States have also to agree on participatory rights (*UNFSA* art 10). This is one part of the measures to be adopted for the prevention and elimination of overfishing and excess fishing capacity (art 5h).

²⁰ *LOSC* art 119.1. UNFSA provides the same basis for the elaboration of conservation measures in its art 5b and art 5e.

Conservation of High Seas Biodiversity

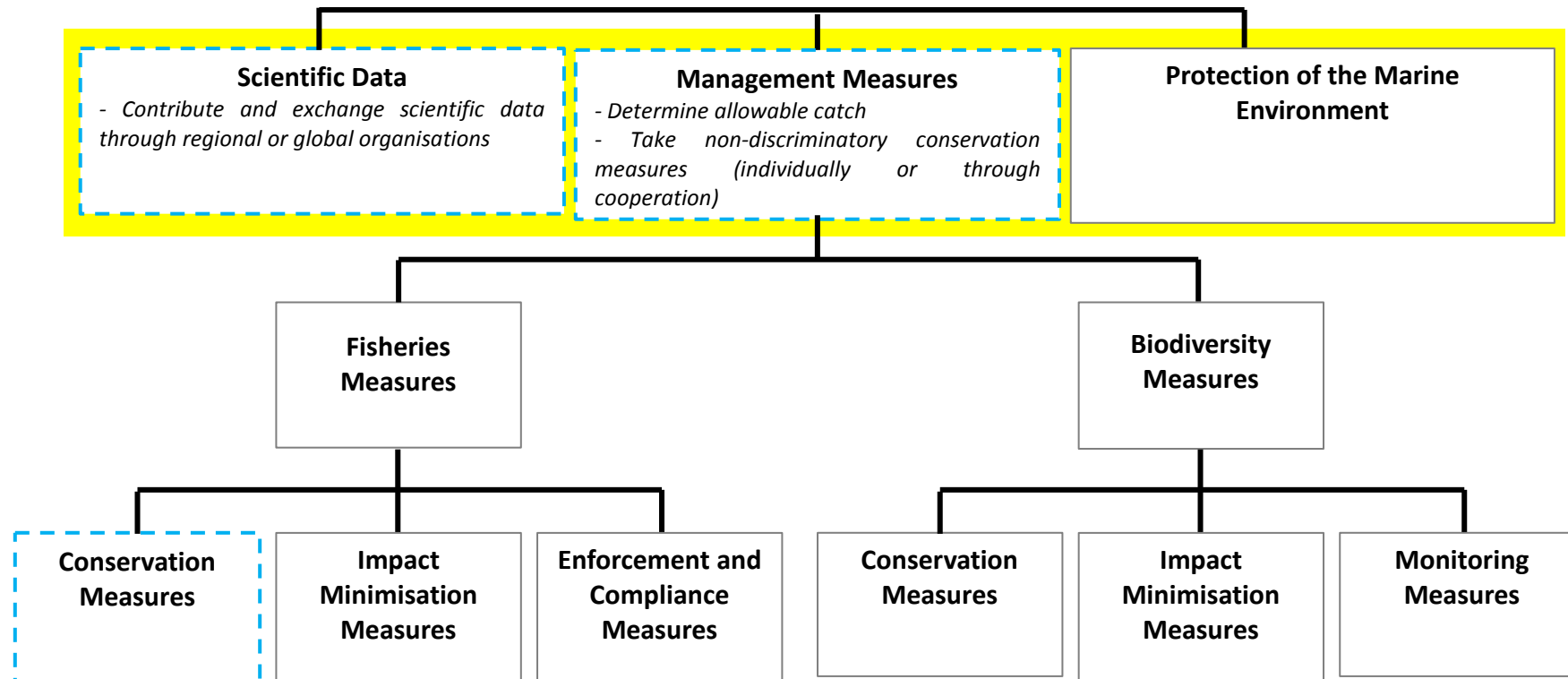


Figure 5.1: Legal Provisions to be Implemented by States for the Conservation of High Seas Biodiversity²¹

²¹ The yellow square denotes the mandatory provisions that are to be implemented by States under the LOSC. Fisheries and biodiversity measures stem from complementary hard and soft law agreements, primarily from the UNFSA and the CBD. Measures in the blue outlined boxes have to be implemented through the relevant institutions. For conservation measures, this means that they can be taken by the State alone, by a group of States or through a relevant institution. In the latter case, the institution is then responsible for determining the allowable catch as well as for establishing other conservation measures for the conservation of high seas living resources.

5.5 Global Legal Provisions: Scientific Data

Under the LOSC, States have the legal obligation to regularly contribute and exchange scientific data about marine living resources through regional or global institutions.²² Across international legal instruments, States have four general obligations with regard to scientific data. Firstly, they have to undertake research and collect relevant data; secondly, they have to share this data and exchange information; thirdly, they have to establish educational and training programmes as well as develop appropriate technologies; and lastly, they have to agree on data criteria and standards (Figure 5.2).

Specifically, for the management and conservation of straddling and highly migratory fish stocks, States have to conduct scientific research, collect and exchange scientific data regarding the fishing activities undertaken, and agree on data standards.²³ The conduct of scientific research should provide data for stock assessments as well as data on the impacts of fishing on non-target species.²⁴ Under the CBD, individual States have the obligation to promote scientific research and to establish scientific and technical education and training programmes.²⁵ Regular data collection and exchange between States on the conservation of biodiversity is not a legal obligation but rather a soft law prescription under Chapter 15 of the 1992 *Agenda 21*.²⁶

The differentiation between data requirements for fish stocks and for biodiversity shows that there is an obligation for States to collect accurate and comprehensive fisheries data but there is no such legal obligation for biodiversity data. For biodiversity, there is a legally binding obligation for States to identify and undertake research on biodiversity components including marine biodiversity within national jurisdiction but data collection and sharing falls under soft law.²⁷ All data to be collected, standards to be agreed on and scientific assessments done for fisheries are to be undertaken, as well as contributed and exchanged, through a relevant institution, either at the regional or global

²² LOSC art 119.2. The collection and exchange of scientific information is the basis for the application of the precautionary approach outlined in UNFSA art 6.3a.

²³ UNFSA art 5j, art 5k, art 10e, art 10d, art 10f and art 10g; *Code of Conduct* art 7.4.4, art 8.1.3 and art 8.4.3. According to UNFSA art 5j, this data includes *inter alia*: vessel position, catch of target and non-target species, fishing effort, information from national and international research programmes. See also UNFSA annex I.

²⁴ UNFSA art 10d.

²⁵ CBD art 12. See: *United Nations Conference on Environment and Development*, 'Agenda 21, Chapter 17' (1992) ('*Agenda 21, Chapter 17*') para 17.46g and para 17.56.

²⁶ *United Nations Conference on Environment and Development*, 'Agenda 21, Chapter 15' (1992) ('*Agenda 21, Chapter 15*') para 15.6a and para 16.6f.

²⁷ CBD art 7 and art 12; *Agenda 21, Chapter 15* para 15.6a and para 15.6f.

level.²⁸ This is not the case with the soft law provisions relating to the exchange of data on biodiversity which remains the sole responsibility of States and only applies to biodiversity within national jurisdiction.

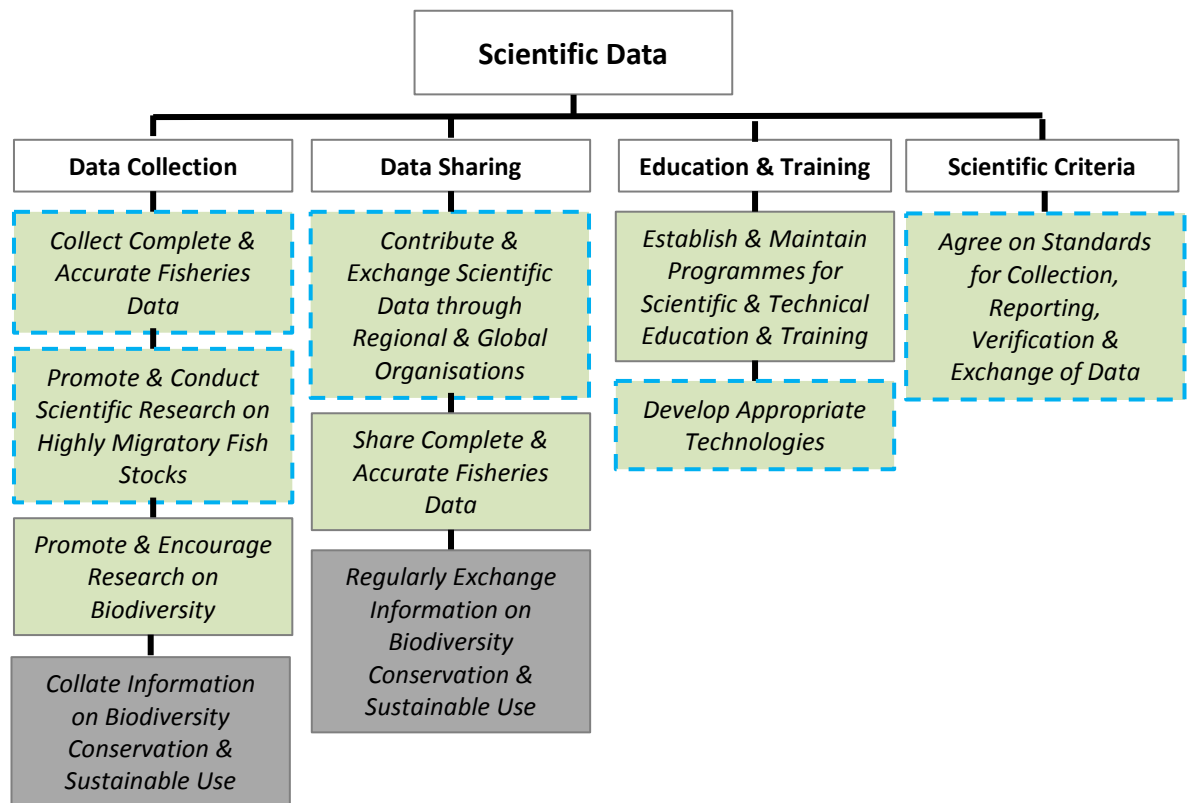


Figure 5.2: General Legal Measures Regarding Scientific Data²⁹

5.6 Global Legal Provisions: Fisheries Measures

Several hard and soft law agreements complement the LOSC to provide a set of concrete measures to deal with the management of fisheries that can be divided into three main categories for the purpose of the analysis in this chapter: measures to be adopted for the conservation of fish stocks; measures to minimise the impacts on fish stocks; and enforcement and compliance measures (Figure 5.3).

²⁸ LOSC art 119.2; UNFSA art 10d, art 10e, art 10f, art 10g; IPOA-Capacity para 30 and para 32.

²⁹ The white boxes show the categorisation of these legal measures. Hard law measures are shown in green while soft law measures are shown in grey. Measures in blue have to be implemented through the relevant institutions.

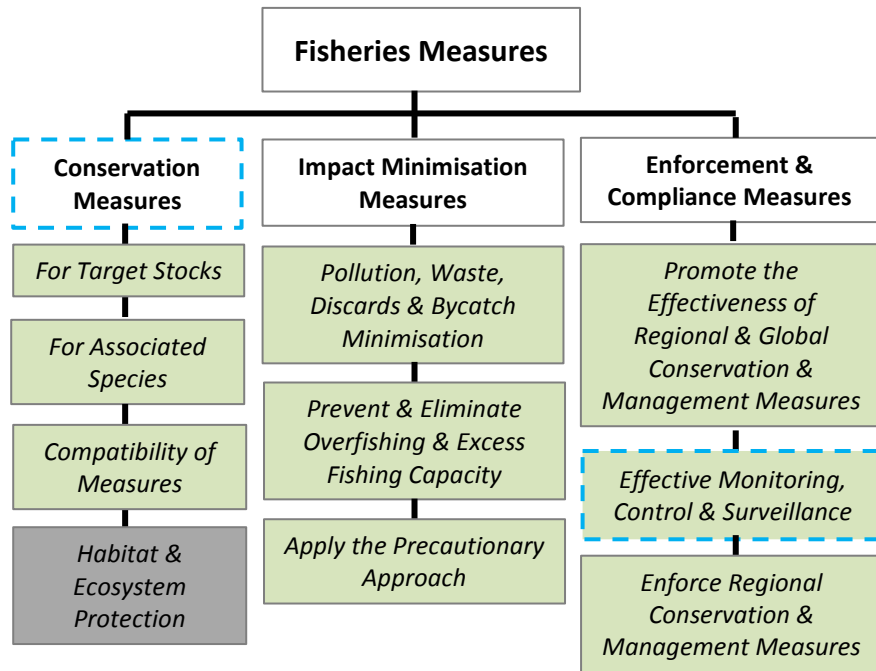


Figure 5.3: Subjective Categorisation of Fisheries Measures for the Purpose of the Analysis³⁰

The global measures for fisheries management are very broad and sparse when it comes to conservation measures to be applied but become very specific and numerous for enforcement and compliance. Most of the legally binding measures are found in the enforcement and compliance category, with mostly soft law measures provided under the categories of Conservation and Impact Minimisation.

States have to implement several measures by cooperating through a relevant institution. Legally binding institutional measures include the determination of conservation measures for target stocks, taking into account associated and dependent species; the allocation of allowable catch and fishing effort; as well as the development of effective monitoring and surveillance measures, including boarding and inspection procedures. Soft law measures to be implemented through a relevant institution include measures to reduce the number of seabirds caught as bycatch in longline fisheries; the adoption of a regional plan for the conservation of *Chondrichthyes*;³¹ the adoption of measures to combat illegal, unreported and unregulated (IUU) fishing; and the

³⁰ The white boxes show the categorisation of these legal measures. Hard law measures are shown in green while soft law measures are shown in grey. Measures in blue have to be implemented through the relevant institutions.

³¹ Species of the class *Chondrichthyes* include: sharks, rays, skates (all of the *Elasmobranchii* sub-class) and chimaeras (*Holocephali* sub-class).

strengthening of RFOs as well as the development of unified port State measures to ensure the appropriate surveillance and monitoring of fishing vessels at the regional level. Most of the other enforcement and compliance measures are to be implemented either by flag States or port States.³²

5.6.1 Conservation Measures for Fisheries

Following the guidelines outlined in the LOSC, States have to adopt conservation measures not only for target fish stocks but also for associated, dependent and same ecosystem species.³³ This includes the duty for States to adopt measures applicable to their nationals fishing on the high seas to conserve high seas living resources as well as to cooperate with other States that are targeting the same stocks or fish in the same area in taking measures for the conservation of these stocks.³⁴

Furthermore, States are required to determine an allowable catch for these targeted stocks, which takes into account the need to maintain them at MSY levels and is based on the best scientific evidence available, taking into account fishing patterns and the interdependence of stocks.³⁵ In determining this allowable catch, States are also required to consider the effects that fishing has on associated or dependent species of such stocks and to maintain the populations of these species at levels that does not compromise their survival.³⁶

In taking measures for the conservation and management of straddling fish stocks and highly migratory fish stocks, States have to ensure that these are compatible with previously adopted measures as well as the ones adopted by adjacent coastal States in marine areas within their national jurisdiction to ensure the full and harmonious protection of these fish stocks.³⁷ They also have to consider the biological characteristics of stocks, the dependence of States on these high seas stocks and ‘ensure

³² See Section 5.6.3 of this chapter.

³³ *LOSC* art 119.1b. The non-discriminatory conservation measures must be based on the best scientific evidence available and take into account specific fishing patterns, the interdependence of fish stocks as well as international minimum standards. Conservation measures are to be established to maintain or restore populations of harvested species at levels which can produce the MSY as well as taking into consideration associated and dependent species and keeping them above levels at which their reproduction may become seriously threatened. They must also take into account the requirements of developing countries (art 119.1 and art 119.3)

³⁴ *Ibid* art 117 and art 118.

³⁵ *Ibid* art 119.a.

³⁶ *Ibid* art 119.b.

³⁷ *UNFSA* art 7.2.

that such measures do not result in harmful impact on the living marine resources as a whole'.³⁸

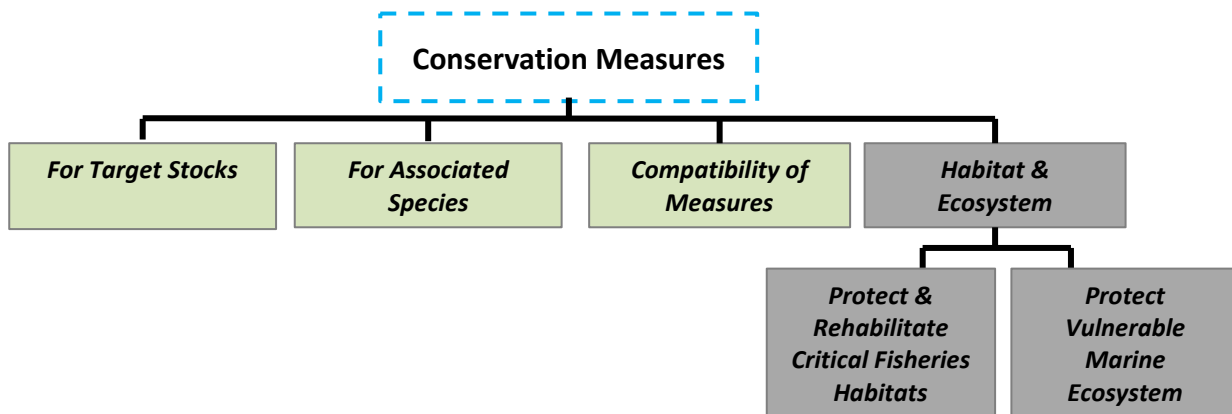


Figure 5.4: Categorisation of Conservation Measures for Fisheries³⁹

Apart from ensuring the production of the MSY for targeted fish stocks and the reproduction level for other dependent stocks, no concrete measures are provided by international law. Rather, States have to cooperate through the appropriate institution to agree on specific measures that will be region-specific.⁴⁰ In this respect, the duty to cooperate for the conservation of straddling and highly migratory fish stocks applies to all States fishing on the high seas and coastal States whose undertakings within national jurisdiction may affect fish stocks on the high seas. Soft law goes beyond the adoption of management measures for fish stocks to include the protection of both critical fisheries habitats and VMEs, notably through assessing the impacts of fisheries activities on the marine environment (Figure 5.4).⁴¹

5.6.2 Impact Minimisation Measures for Fisheries

Global measures to minimise fisheries' impacts on the marine environment can be grouped into three categories: a) the reduction of pollution, waste, discards and bycatch; b) the prevention and elimination of overfishing and excess fishing capacity; and c) the application of the precautionary approach (Figure 5.5).

³⁸ Ibid art 7.2.d, art 7.2.e and art 7.2.f.

³⁹ The white boxes show the categorisation of these legal measures. Hard law measures are shown in green while soft law measures are shown in grey. Measures in blue have to be implemented through the relevant institutions.

⁴⁰ LOSC art 118.

⁴¹ Code of Conduct art 6.8; *The Future We Want* para 168.

The set of concrete measures proposed to minimise pollution, waste, discards and bycatch stem exclusively from soft law instruments whereas hard law measures are provided for the two other categories.

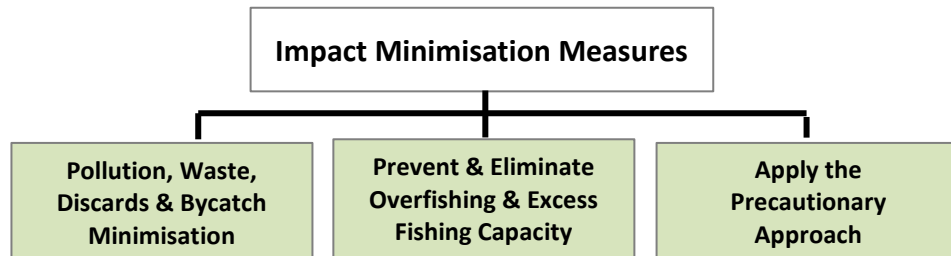


Figure 5.5: Categorisation of Impact Minimisation Measures for Fisheries⁴²

Soft law measures to minimise the level of pollution, waste, discards and bycatch in fisheries include limitations on the size of fish caught and net mesh used as well as limitations on the amount of discards allowed; the use of selective and appropriate fishing gear and techniques; as well as temporal and area-based fisheries closures (Table 5.1).⁴³ Destructive fishing practices are also banned, particularly IUU fishing, large-scale pelagic driftnet fishing and bottom trawling.⁴⁴ The non-legally binding International Plans of Action (IPOAs) adopted by the United Nations Food and Agriculture Organization (FAO) for the reduction of seabird and shark bycatch require States to conduct regular assessments of these species and maintain *Chondrichthyes* stocks within sustainable levels. States have to cooperate through a relevant institution

⁴² The white boxes show the categorisation of these legal measures. Hard law measures are shown in green.








⁴³ *Agenda 21, Chapter 17* para 17.46c; *Code of Conduct* art 6.6, art 7.2.2, art 7.6.9, art 8.4.4, art 8.4.5 and art 8.5.1.

⁴⁴ *The Future We Want* para 168; *Agenda 21, Chapter 17* para 17.53; *Code of Conduct* art 8.4.2. In preventing and combating IUU fishing, States have to follow the guidelines found in the *IPOA-IUU*. This includes the development and implementation of national and regional action plans and to implement the measures adopted by coastal, flag and port States (*The Future We Want* para 170; *JPOI* para 31d). States have the duty to implement 1991 United Nations General Assembly (UNGA) resolution 46/215 on a global moratorium on all large-scale pelagic driftnet fishing on the high seas, as mentioned in *Agenda 21, Chapter 17* para 17.54. This resolution builds on UNGA resolution 44/225 of 1989 and UNGA resolution 45/197 of 1990. The global moratorium on pelagic driftnet is in place since 31 December 1992 and applies to the high seas as well as enclosed and semi-enclosed seas.

UNGA Resolution 59/25 of 2004 first called on States to take urgent action for the interim prohibition of destructive fishing practices, including bottom trawling, beyond areas of national jurisdiction to prevent the adverse impacts these practices have on VMEs, including seamounts, hydrothermal vents and cold water corals (United Nations General Assembly, *Resolution Adopted by the General Assembly*, GA Res 59/24, 59th sess, Agenda Item 49 (a), A/Res/59/24 (4 February 2005) para 66). Following this decision and the lack of progress in implementing this decision, the UNGA adopted Resolution 61/105 in 2006 that reaffirmed the decision under Resolution 59/25 as well as specifically outlined a series of measures to be implemented by States and RFOs to protect VMEs, including notably the conduct of impact assessments and the establishment of closure areas to bottom fishing (United Nations General Assembly, 'Resolution adopted by the General Assembly on 8 December 2006', A/RES/61/105, 61st sess, Item 71 (b) (6 March 2007) para 83). *International Guidelines for the Management of Deep-Sea Fisheries in the High Seas* were adopted by FAO in 2008. In 2009, the UNGA adopted Resolution 64/72 that reiterated the importance of implementing the two previous resolutions. It furthermore particularly emphasised the need to adopt conservation and management measures consistent with the FAO International Guidelines, to conduct impact assessments and marine scientific research on VMEs (United Nations General Assembly, *Resolution Adopted by the General Assembly on 4 December 2009*, GA Res 64/72, 64th sess, Agenda Item 76 (b), A/Res/64/72 (19 March 2010) para 119). This was reiterated by UNGA Resolution 66/68 of 2011 (United Nations General Assembly, *Resolution Adopted by the General Assembly on 6 December 2011*, GA Res 66/68, 66th sess, Agenda Item 76 (b), A/Res/66/68 (28 March 2012) para 121-123).

for the reduction of seabird bycatch in longline fisheries and the adoption of regional plans of action for the conservation of *Chondrichthyes*.

Table 5.1: Categorisation of Fisheries Measures for Pollution, Waste, Discards and Bycatch Minimisation⁴⁵

	Pollution, Waste, Discards and Bycatch Minimisation
	Cooperate to reduce the incidental catch of seabirds in longline fisheries
	Conduct regular assessments for <i>Chondrichthyes</i> stocks and adopt, when necessary, a national plan of action and regional plans
	Develop and use selective, environmentally safe and cost-effective fishing gear and techniques
	Technical measures related to fish size, mesh size or gear, discards, closed seasons and areas and zones reserved for selected fisheries
	Eliminate destructive fishing practices, including driftnet and IUU fishing
	Conduct regular assessments of longline fisheries to evaluate seabird bycatch and adopt, when necessary, a national plan of action
	Keep the total <i>Chondrichthyes</i> fishing mortality for each stock within sustainable levels by applying the precautionary approach

In order to prevent and eliminate overfishing and excess fishing capacity, the only hard law measure established by international law, and explicitly mentioned in the LOSC, is the determination of catch allowances and levels of fishing effort (Table 5.2).⁴⁶ This measure is to be determined within the relevant institution, in practice within RFMOs. Particularly when the state of the fisheries is critical, States must take immediate measures relating to the fishing capacity.⁴⁷ Management plans should also be developed, stock assessments undertaken and the level of fisheries catch and effort should be adapted to the stocks' status.⁴⁸ The non-legally binding FAO *International Plan of Action for the Management of Fishing Capacity* (IPOA-Capacity) also

⁴⁵ Hard law measures are shown in green while soft law measures are shown in grey. Measures in blue have to be implemented through the relevant institutions.






⁴⁶ UNFSA art 10b; *Code of Conduct* art 7.5.4. The determination of the allowable catch is also a mandatory conservation under LOSC art 119.1a.

⁴⁷ IPOA-Capacity para 39.

⁴⁸ *The Future We Want* para 168.

recommends the strengthening of RFOs to ensure their ability to better manage fishing capacity.⁴⁹

Table 5.2: Categorisation of Fisheries Measures for the Prevention and Elimination of Overfishing and Excess Fishing Capacity⁵⁰

	Prevention and Elimination of Overfishing and Excess Fishing Capacity
	Agree on participatory rights (for instance, allocations of allowable catch or levels of fishing effort)
	Strengthening of RFOs for improved management of fishing capacity
	Develop and implement science-based management plans, including reducing or suspending fishing catch and effort commensurate with the status of the stock
	Conduct national, regional and global assessments of capacity and improvement of the capacity for monitoring fishing capacity
	Take immediate measures to address the management of fishing capacity for international fisheries requiring urgent attention

The precautionary approach in the context of fisheries is outlined extensively in UNFSA in both Article 6 and Annex II of this legally binding instrument. The precautionary approach forms the basis upon which the UNFSA is built and its methods of managing high seas fisheries (Table 5.3).⁵¹ Legally binding measures to be implemented under the precautionary approach include: a) the determination of stock-specific reference points; b) the monitoring of target fish stocks and non-target species; c) the development of data collection and research programmes to assess the impact of fishing on non-target species and their environment; d) the adoption of conservation plans to protect non-target species, particularly associated and dependent species to the target fish stocks, as well as to protect habitats of special concern; e) the adoption of cautious conservation measures for new or exploratory fisheries, which include catch

⁴⁹ *IPOA-Capacity* para 8.

⁵⁰ Hard law measures are shown in green while soft law measures are shown in grey. Measures in blue have to be implemented through the relevant institutions.

⁵¹ UNFSA art 5c. The application of the precautionary approach is one of the general guiding principles of the UNFSA.

and effort limits; and f) the adoption of emergency conservation measures to limit the effects of natural phenomena or fisheries on stock.⁵²

Table 5.3: Categorisation of Fisheries Measures for the Application of the Precautionary Approach⁵³

	Apply Precautionary Approach
<input type="checkbox"/>	Determine stock-specific reference points
<input type="checkbox"/>	Monitoring of target stocks and non-target species, notably for impact assessment
<input type="checkbox"/>	Develop data collection and research programmes to assess the impacts of fishing on non-target and associated/dependent species and their environment
<input type="checkbox"/>	Adopt plans for the conservation of non-target, associated/dependent species and to protect critical habitats
<input type="checkbox"/>	Adopt cautious conservation measures for new or explanatory fisheries (for instance, catch and effort limits)
<input type="checkbox"/>	Adopt emergency conservation measures to limit the effects of natural phenomena or fisheries on stocks

5.6.3 Enforcement and Compliance Measures for Fisheries

Many enforcement and compliance measures stem from hard law instruments and are legally binding for States that have ratified those instruments. Most of these measures are directed at flag States but port States and institutions also have a role to play in enforcing fisheries-related conservation and management measures. The adoption of such enforcement and compliance measures can be classified into three categories: firstly, States have to promote the effectiveness of regional and global conservation and management measures;⁵⁴ secondly, States have to ensure effective monitoring, control and surveillance (MCS) of these measures;⁵⁵ and finally, States have to enforce regional

⁵² Ibid art 6.3b, art 6.3d, art 6.5, art 6.6 and art 6.7; *Code of Conduct* art 7.5.3 and 7.5.4. See also *UNFSA* art 6.4 for actions to be taken when the reference points are exceeded.

⁵³ Hard law measures are shown in green.

⁵⁴ This is directed at port States, which can adopt and apply such non-discriminatory measures as the inspection of documents, fishing gear and catch; the adoption of regulations empowering the relevant national authorities to prohibit landings and transshipments (*UNFSA* art 23).

⁵⁵ Ibid art 51 and art 10h; *Agenda 21*, Chapter 17 para 17.46d; *Code of Conduct* art 6.10, art 7.7.3 and art 8.1.4.

conservation and management measures (Figure 5.6).⁵⁶ Most of the enforcement and compliance measures are related to combatting IUU fishing.

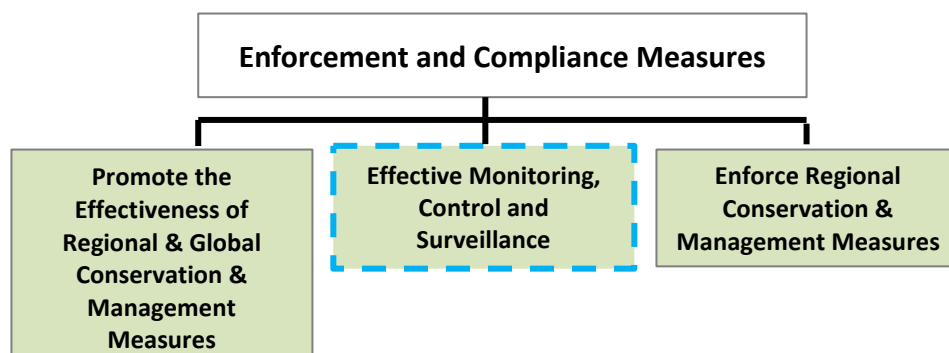


Figure 5.6: Categorisation of Enforcement and Compliance Measures for Fisheries⁵⁷

In order to promote the effectiveness of the measures, flag States must establish regulations for fishing activities and a national record of fishing vessels authorised to fish on the high seas (Table 5.4).⁵⁸ They must also deliver fishing licences, authorisations and permits and adopt other measures to ensure that only fishing vessels duly authorised by the flag State are allowed to fish and require the marking of fishing vessels and fishing gear.⁵⁹

The 1995 *FAO Code of Conduct for Responsible Fisheries* (Code of Conduct) also encourages States to maintain a record of fishers.⁶⁰ States have to cooperate together with and within the framework of RFMOs to combat IUU fishing, notably through the use and development of compatible port State control measures, the development of port State measures for non-members and non-cooperative members of RFMOs, the adoption of multilateral trade-related measures, and the development of plans of action.⁶¹ States should also strengthen the institutional capacity of RFMOs and ensure better coordination between them to deal with issues related to IUU fishing more effectively.⁶²

⁵⁶ UNFSA art 19.1a.

⁵⁷ The white boxes show the categorisation of these legal measures. Hard law measures are shown in green. Measures in blue have to be implemented through the relevant institutions.

⁵⁸ UNFSA art 18.3b, art 18.3c and art 18.3i; *Code of Conduct* art 8.1.2 and art 8.2.1; *IPOA-IUU* para 42.







⁵⁹ UNFSA art 18.3a and art 18.3d; *Code of Conduct* art 8.2.2, art 8.2.3 and art 8.2.4; *IPOA-IUU* para 44.

⁶⁰ *Code of Conduct* art 8.1.8.

⁶¹ *IPOA-IUU* para 52, para 62, para 63, para 64, para 68, para 69 and para 80.13.

⁶² *Ibid* para 80.1 and para 82.3.

Table 5.4: Categorisation of Fisheries Measures for the Promotion of the Effectiveness of Regional and Global Conservation and Management Measures⁶³

	Promote the Effectiveness of Regional & Global Conservation & Management Measures
	Establishment of regulations for fishing activities
	Fishing licences, authorisations or permits
	Requirements for marking of fishing vessels and fishing gear
	Establishment of a national record of fishing vessels authorised to fish on the high seas (as well as those engaged in or supporting IUU fishing)
	Maintain a record of fishers
	Use measures for port States control of fishing vessels in order to prevent, deter and eliminate IUU fishing

Under the second category, States have to implement regional cooperation programmes to ensure enforcement of the management measures adopted, including by granting access to duly authorised inspectors from other States on board vessels, setting up regional observer programmes as well as requesting the use of vessel monitoring systems (VMSs), including satellite transmitter systems (Table 5.5).⁶⁴

This comprises the requirement for States to record and report vessel positions in a timely manner, catch of target and non-target species, fishing effort and other relevant fisheries data.⁶⁵ Effective monitoring and control, as well as the establishment of boarding and inspection measures are to be implemented by the relevant institutions.⁶⁶ Institutions should also develop and implement measures for the mandatory reporting of IUU fishing activities.⁶⁷

⁶³ Hard law measures are shown in green while soft law measures are shown in grey.

⁶⁴ *UNFSA* art 18.3g and art 18.3g; *Code of Conduct* art 8.4.3; *IPOA-IUU* para 24 and para 80.7.

⁶⁵ *UNFSA* art 18.3e.

⁶⁶ *Ibid* art 21.2.

⁶⁷ *IPOA-IUU* para 80.3.

Table 5.5: Categorisation of Fisheries Measures for Effective Monitoring, Control and Surveillance⁶⁸



Effective Monitoring, Control and Surveillance

- ☐ Implementation of regional schemes for cooperation in enforcement, including requirements for such vessels to permit access by duly authorised inspectors from other States
- ☐ Implementation of regional observer programmes, including requirements for such vessels to permit access by observers from other States to carry out the functions agreed under the programmes
- ☐ Development and implementation of VMSs, including satellite transmitter systems
- ☐ Requirement for recording and timely reporting of vessel position, catch of target and non-target species, fishing effort and other relevant fisheries data
- ☐ Effective MCS of fishing, including by implementing authorisation schemes for vessels, maintaining records of all vessels, implementing a VMS and implementing observer programmes

Under the third category, port States have to inspect vessels' documents, gear and catch as well as adopt measures to allow national authorities to prohibit landings and transshipments (Table 5.6).⁶⁹ Flag States have to enforce regional measures for conservation and management of straddling and highly migratory fish stocks by taking measures to ensure that vessels flying their flags comply with regional measures in place.⁷⁰ To this end, they have to require catch verification through, for instance: observer programmes, inspection schemes, unloading reports, supervision of tranships, monitoring of landed catches or market statistics and the regulation of high seas transshipment.⁷¹ They also have to examine any alleged violation and ensure that incriminated vessels do not fish until all sanctions have been complied with.⁷²

⁶⁸ Hard law measures are shown in green while soft law measures are shown in grey. Measures in blue have to be implemented through the relevant institutions.

⁶⁹ UNFSA art 23. Particularly in combatting IUU fishing: *IPOA-IUU* para 56.

⁷⁰ UNFSA art 18.1 and art 19.1a; *Agenda 21, Chapter 17* para 17.51; *Code of Conduct* art 6.11.

⁷¹ UNFSA art 18.3f and art 18.3h.

⁷² *Ibid* art 19.1b and art 19.1e.

Table 5.6: Categorisation of Fisheries Measures for the Enforcement of Regional Conservation and Management Measures⁷³

	Enforce Regional Conservation and Management Measures
<input type="checkbox"/>	Inspection of documents, fishing gear and catch
<input type="checkbox"/>	Adopt regulations empowering the relevant national authorities to prohibit landings and transshipments
<input type="checkbox"/>	Take measures to ensure that vessels flying its flag comply with and do not engage in any activity that undermines the effectiveness of international and regional conservation and management measures
<input type="checkbox"/>	Requirement for verifying the catch of target and non-target species through for instance observer programmes, inspection schemes, unloading reports, supervision of transshipment, monitoring of landed catches, market statistics
<input type="checkbox"/>	Regulation of transshipment on the high seas
<input type="checkbox"/>	Investigate immediately and fully any alleged violation
<input type="checkbox"/>	Ensure incriminated vessel does not engage in fishing operations until sanctions have been complied with
<input type="checkbox"/>	Adopt and apply sanctions
<input type="checkbox"/>	Measures for masters and other officers charged with an offence in the operation of fishing vessels, for example refusal, withdrawal or suspension of authorisations to serve
<input type="checkbox"/>	Sanctions may for serious violations include provisions for the refusal, withdrawal or suspension of the authorisation to fish
<input type="checkbox"/>	Full, detailed, accurate and timely reporting of catches and effort
<input type="checkbox"/>	Take effective action to deter reflagging of vessels by their nationals as a means of avoiding compliance with applicable conservation and management rules for fishing activities on the high seas
<input type="checkbox"/>	Take measures to ensure that nationals subject to their jurisdiction do not support or engage in IUU fishing
<input type="checkbox"/>	Discourage their nationals from flagging fishing vessels under the jurisdiction of a State that does not meet its flag State responsibilities

⁷³ Hard law measures are shown in green while soft law measures are shown in grey.

Table 5.6 (continued)

- ☐ Take measures in relation to vessels without nationality on the high seas involved in IUU fishing
- ☐ All possible steps should be taken to prevent, deter and eliminate the activities of non-cooperating States to a relevant RFMO which engage in IUU fishing
- ☐ Take measures to prevent 'flag hopping'
- ☐ Port States should not allow vessels engaged in IUU fishing activity to land or tranship fish in their ports
- ☐ Ensure compliance with and enforcement of policies and measures having a bearing on IUU fishing which are adopted by any relevant RFMO and by which they are bound

Under soft law, flag States are encouraged to adopt and apply sanctions which may include measures to refuse, withdraw or suspend any authorisation to fish.⁷⁴ They are also encouraged to take measures to ensure their nationals are not involved in IUU fishing as well as to prevent flag hopping.⁷⁵ States should furthermore adopt measures and sanctions for ship crew, do a comprehensive report of catches and effort, take effective action to deter vessel reflagging, discourage their nationals from using flags of convenience, take measures against vessels without nationality that engage in IUU fishing on the high seas, take measures to prevent, deter and eliminate IUU fishing activities of non-cooperating States to RFMOs, and ensure the compliance and enforcement of measures against IUU fishing adopted by RFMOs.⁷⁶ States should also work through institutions to develop compliance measures as well as market-related measures to combat IUU fishing.⁷⁷ Table 5.7 shows the various hard and soft law compliance and enforcement measures that have to be applied by States through institutions.













⁷⁴ *Compliance Agreement* art 3.8; *Code of Conduct* art 7.7.2 and art 8.2.7.

⁷⁵ *IPOA-IUU* para 18, para 34, para 35, para 36, para 37 and para 39.

⁷⁶ *Code of Conduct* art 8.9.1; *Agenda 21, Chapter 17* para 17.51 and para 17.52; *IPOA-IUU* para 19, para 20, para 22 and para 78.

⁷⁷ *IPOA-IUU* para 80.2 and para 80.10.

Table 5.7: Categorisation of Enforcement and Compliance Fisheries Measures⁷⁸

	Apply to States Through Institutions
	Effective MCS
	Establish procedures for boarding and inspection as well as procedures to implement other provisions
	Cooperate with RFMOs to develop compatible measures for port State control of fishing vessels
	Consider developing within RFMOs port State measures for non-members and non-cooperative members that might be engaging in IUU fishing
	Enhance cooperation among and between relevant RFMOs and States on port State controls
	Cooperate through relevant global and regional fisheries management organisations (FMOs) to adopt appropriate multilaterally agreed trade-related measures, consistent with World Trade Organization (WTO), that may be necessary to prevent, deter and eliminate IUU fishing for specific fish stocks or species
	Measures for institutional strengthening, as appropriate, of RFMOs with a view to enhancing their capacity to prevent, deter and eliminate IUU fishing
	Develop action plans for IUU fishing
	Regularise coordination with institutional mechanisms of other RFMOs as far as possible in relation to IUU fishing, in particular information, enforcement and trade aspects
	Develop and implement comprehensive arrangements for mandatory reporting
	Develop compliance measures for IUU fishing
	Develop, where appropriate, market-related measures

5.7 Global Legal Provisions: Biodiversity Measures

Several measures relevant to the broader concept of biodiversity and the conservation of specific marine species are provided for in both hard and soft law instruments. These measures can be divided into three main categories for the purpose of the analysis in

⁷⁸ Hard law measures are shown in green while soft law measures are shown in grey. Measures in blue have to be implemented through the relevant institutions.

this chapter: measures to be adopted for the conservation of biodiversity; measures to minimise the impacts on biodiversity; and monitoring measures (Figure 5.7).

Most of the measures proposed for the conservation and management of biodiversity are very broad, leaving States to determine the steps they take to reach these objectives. The core of the management measures relate to specific endangered or threatened species, as listed under the *Convention on the Conservation of Migratory Species of Wild Animals* (CMS), the *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES) and the *Agreement on the Conservation of Albatrosses and Petrels* (ACAP), as well as measures to prevent impacts on biodiversity. Unlike the fisheries measures, there are no compliance and enforcement measures to be adopted for the conservation of biodiversity and none of the measures proposed are aimed at institutions. Rather, individual States have to take the lead in adopting and implementing biodiversity measures. In contrast to the fisheries measures outlined above, the conservation measures are more detailed and numerous and include both area-based management measures and measures for the conservation of endangered and threatened species.

Apart from the CMS, CITES and ACAP provisions which provide species-specific management measures, all other legally binding provisions for biodiversity come from the CBD. Since the CBD does not have the jurisdictional authority over components of high seas biodiversity, the set of measures provided by the CBD serves only as a guideline as to what can and should be undertaken by States for the conservation of high seas biodiversity. There are only two provisions that are supported by other soft law agreements and that seem to be integral to the conservation of high seas biodiversity. These are the need to conduct environmental impact assessments (EIAs) and identify components of biodiversity.⁷⁹

⁷⁹ CBD art 7 and art 14a; *Agenda 21*, Chapter 15 para 15.5c and para 15.5k.

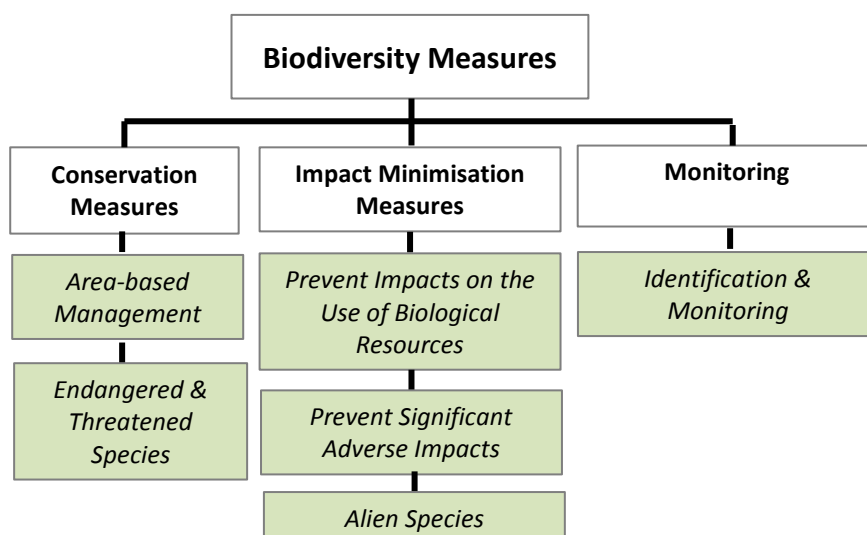


Figure 5.7: Subjective Categorisation of Biodiversity Measures for the Purpose of the Analysis⁸⁰

5.7.1 Conservation Measures for Biodiversity

The conservation of biodiversity is advocated in several fisheries-related and biodiversity-related hard and soft law instruments.⁸¹ The conservation measures proposed in hard and soft law for the conservation of biodiversity revolve around area-based management and the conservation of endangered and threatened species (Figure 5.8).

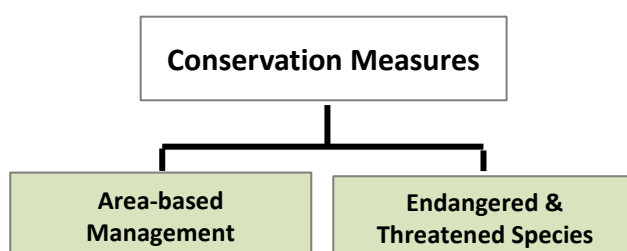


Figure 5.8: Categorisation of Conservation Measures for Biodiversity⁸²

Under the CBD, States have broad obligations to manage biological resources important for biodiversity conservation both within and outside of protected areas, promote ecosystem and natural habitat protection, conserve species populations in their natural surroundings, as well as develop guidelines for protected areas selection, establishment

⁸⁰ The white boxes show the categorisation of these legal measures. Hard law measures are shown in green.

⁸¹ *UNFSA* art 5g; *CBD* art 8; *Code of Conduct* art 7.2.2; *IPOA-Capacity* para 9iv.

⁸² The white boxes show the categorisation of these legal measures. Hard law measures are shown in green.

and management.⁸³ Soft law provisions on the other hand are very specific and revolve around the establishment of protected areas, regional ecological networks and corridors, habitat and other ecologically sensitive area preservation, and the promotion of initiatives for the protection of areas of ecological and biological significance for biodiversity.⁸⁴ Soft law agreements also promote the use of area-based conservation measures as well as the ecosystem approach (Table 5.8/Figure 5.8).⁸⁵ Area-based management has been particularly promoted through the CBD. It forms part of the CBD's *in-situ* conservation, which is a fundamental requirement of the conservation of ecosystems and habitats.⁸⁶ The Conference of the Parties (COP) to the CBD has adopted a 2010 and now 2020 target, namely that 'by 2020 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are to be conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures'.⁸⁷

Table 5.8: Categorisation of Biodiversity Measures for Area-based Management⁸⁸

	Area-based Management
■	Regulate or manage biological resources important for the conservation of biodiversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use
■	Promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings
■	Develop guidelines for the selection, establishment and management of protected areas or areas where special measures need to be taken to conserve biodiversity
■	Establish a system of protected areas

⁸³ CBD art 8b, art 8c and 8d.

⁸⁴ Agenda 21, Chapter 15 para 15.5g; Agenda 21, Chapter 17 para 17.46f; JPOI para 32c and para 44g; *The Future We Want* para 177.

⁸⁵ JPOI para 32c; *The Future We Want* para 177 and para 158.

⁸⁶ Rosemary Rayfuse, 'Biological Resources' in Daniel Bodansky, Jutta Brunnée and Ellen Hey (eds), *The Oxford Handbook of International Environmental Law* (Oxford University Press, 2007) 362, 387.

⁸⁷ Convention on Biological Diversity, *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Tenth Meeting: X/2. The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets*, UNEP/CBD/COP/DEC/X/2, Conference of the Parties to the Convention on Biological Diversity, 10th meeting, Agenda Item 4.4 (29 October 2010). Target reiterated in *The Future We Want* para 177.

⁸⁸ Hard law measures are shown in green while soft law measures are shown in grey.

Table 5.8 (continued)

- ☐ Promote the development of national and regional ecological networks and corridors
- ☐ Promote and support initiatives for hot spot areas and other areas essential for biodiversity
- ☐ Preserve habitats and other ecologically sensitive areas
- ☐ Importance of area-based conservation measures, including marine protected areas
- ☐ Develop and facilitate the use of diverse approaches and tools, including: a) the ecosystem approach; b) the elimination of destructive fishing practices; c) the establishment of marine protected areas consistent with international law and based on scientific information, including representative networks by 2012 and time/area closures for the protection of nursery grounds and periods
- ☐ Promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection in these areas

The CBD contains a broad provision on the obligation to adopt regulatory provisions for the protection of threatened species and populations.⁸⁹ Three hard law treaties, the CMS, the CITES and the ACAP, as well as one soft law instrument, the *Memorandum of Understanding on the Conservation of Migratory Sharks* (MoU Sharks), provide more concrete provisions on States' obligations regarding the protection and conservation of endangered and threatened species. Under the CMS, States must establish measures for the protection of migratory species listed in Appendix I.⁹⁰ These include the conservation and restoration of their habitats, the prevention and minimisation of adverse impacts on their migration as well as those that may further endanger the species, including the eradication and control of alien invasive species, the prohibition to kill or hunt these migratory species.⁹¹ The conservation and management of migratory species included in Appendix II of the CMS is to be dealt with in specially designed agreements.⁹² CITES prohibits the trade in any species listed in its Appendices I, II and III and obligates States to take measures to ensure the enforcement of this

⁸⁹ CBD art 8k.

⁹⁰ CMS art 2.




⁹¹ Ibid art 3.4a, art 3.4b, art 3.4c and art 5. This is also highlighted in ACAP art 3.1b and art 3.1c in relation to albatrosses and petrels

⁹² CMS art 2, art 4 and art 5.

provision.⁹³ Important habitats for albatrosses and petrels need to be conserved and restored according to the ACAP.⁹⁴ Furthermore, the MoU Sharks encourages States to establish regional management plans and cooperatively adopt and enforce conservation and management measures.⁹⁵ *Agenda 21* encourages States to restore degraded ecosystems and promote threatened species recovery (Table 5.9).⁹⁶

In contrast to UNFSA, there is no provision in the CBD on the compatibility of conservation measures between the exclusive economic zones (EEZs) and the high seas.⁹⁷ While there are key ecological and governance differences between coastal and high seas areas, the fact that many RFMOs apply the compatibility principle could lead us to assume that States implementing CBD measures within their own jurisdiction set the stage for the measures to be applied outside of their national jurisdiction when working through regional fora such as RFMOs.⁹⁸ The experience of States in implementing biodiversity conservation measures within their national jurisdictions may have some validity as a model for high seas biodiversity conservation measures. However, that analysis is beyond the scope of this thesis.

Table 5.9: Categorisation of Biodiversity Measures for Endangered and Threatened Species⁹⁹

	Endangered and Threatened Species
	Develop or maintain necessary legislation and/or regulatory provisions for the protection of threatened species and populations
	Provide immediate protection for migratory species included in CMS Appendix I
	Conserve and restore habitats of the species that are of importance

⁹³ *CITES* art 2.4 and art 8.1.

⁹⁴ *ACAP* art 3.1.

⁹⁵ *MoU Sharks* art 10 and art 12.

⁹⁶ *Agenda 21, Chapter 15* para 15.5h; *Agenda 21, Chapter 17* para 17.46e.

⁹⁷ *UNFSA* art 7.

⁹⁸ Several of these differences were highlighted in the 2009 CBD Manila Workshop report, which looked at the development of voluntary EIA guidelines for marine areas beyond national jurisdiction. The development of EIA guidelines for biodiversity within and beyond national jurisdiction shows that there are some differences that need to be taken into account when looking at the compatibility of measures between EEZ and high seas (Convention on Biological Diversity, *Report of the Expert Workshop on Scientific and Technical Aspects relevant to Environmental Impact Assessment in Marine Areas Beyond National Jurisdiction*, UNEP/CBD/EW-EIAMA/2, Expert Workshop on Scientific and Technical Aspects relevant to Environmental Impact Assessment in Marine Areas Beyond National Jurisdiction (20 November 2009)).

⁹⁹ Hard law measures are shown in green while soft law measures are shown in grey.

Table 5.9 (continued)

- ☐ Prevent, remove, compensate for, or minimise, as appropriate, the adverse effects of activities or obstacles that seriously impede or prevent the migration of the species
- ☐ Prevent, reduce or control factors that are endangering, or are likely to further endanger the species, including strictly controlling the introduction of, or controlling or eliminating, already introduced exotic species
- ☐ Prohibit the taking of animals belonging to such species in CMS Appendix I
- ☐ Endeavour to conclude agreements covering the conservation and management of migratory species included in CMS Appendix II
- ☐ Prohibit trade in specimens of species included in CITES Appendices I, II and III
- ☐ Take appropriate measures to enforce CITES' provisions and to prohibit trade in specimens in violation thereof, including trade penalisation and confiscation or return to the State of export of such specimens
- ☐ Conserve and restore those habitats which are of importance to albatrosses and petrels
- ☐ Establish sub-regional or regional management plans for the conservation of migratory sharks
- ☐ Adopt, implement and enforce such legal, regulatory and administrative measures to conserve and manage migratory sharks and their habitat
- ☐ Rehabilitate and restore degraded ecosystems and promote the recovery of threatened species, *inter alia*, through the development and implementation of plans or other management strategies

5.7.2 Impact Minimisation Measures for Biodiversity

Impact minimisation measures to be adopted and implemented are either measures for the prevention of significant adverse impacts on biodiversity or measures for preventing and controlling the introduction of alien invasive species (Figure 5.9).¹⁰⁰

¹⁰⁰ CBD art 10. This is also highlighted in ACAP art 3.1c in relation to albatrosses and petrels.

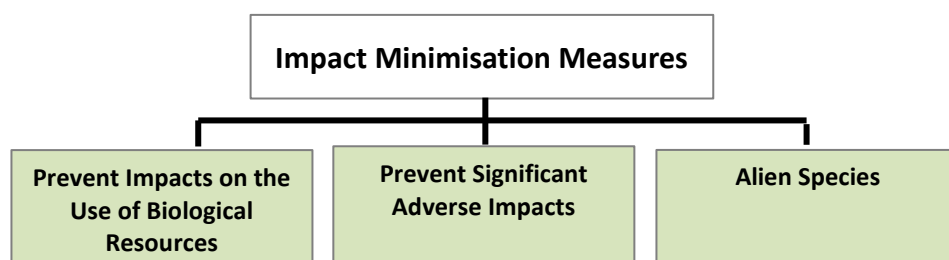


Figure 5.9: Categorisation of Impact Minimisation Measures for Biodiversity¹⁰¹

Apart from the need for States to develop programmes at all levels to halt the loss of marine biodiversity, all other measures are legally binding on States Parties to the relevant agreements.¹⁰² In preventing significant adverse impacts on biodiversity, States Parties must attempt to provide compatibility between biodiversity uses and the conservation and sustainable use of biodiversity components (Table 5.10 and Table 5.11).¹⁰³ For this purpose, they must identify processes and activities that may have significant adverse impacts on biodiversity conservation and its sustainable use and monitor their effects.¹⁰⁴ States Parties must conduct prior EIAs for projects that may have a significant adverse effect on biodiversity, take into account their environmental consequences, and regulate and manage these projects when such an impact has been identified.¹⁰⁵ They must also develop emergency responses in case of serious or impending danger to biodiversity both within the national context and through cooperation at the international level.¹⁰⁶

Table 5.10: Categorisation of Biodiversity Measures for the Prevention of Impacts on the Use of Biological Resources¹⁰⁷

	Prevent Impacts on the Use of Biological Resources
	Endeavour to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and the sustainable use of its components

¹⁰¹ The white boxes show the categorisation of these legal measures. Hard law measures are shown in green.

¹⁰² *JPOI* para 32d; *Agenda 21, Chapter 15* para 15.4b and para 15.4c.

¹⁰³ *CBD* art 8i.

¹⁰⁴ *Ibid* art 7c.

¹⁰⁵ *Ibid* art 14a, art 14b and art 8l; *Agenda 21, Chapter 15* para 15.5k.

¹⁰⁶ *CBD* art 14e.

¹⁰⁷ Hard law measures are shown in green while soft law measures are shown in grey.

Table 5.10 (continued)

- ☐ Develop and implement measures to prevent, minimise or mitigate the adverse effects of activities that may influence the conservation status of albatrosses and petrels
- ☐ Develop national, regional and international programmes for halting the loss of marine biodiversity



Table 5.11: Categorisation of Biodiversity Measures for the Prevention of Significant Adverse Impacts¹⁰⁸

	Prevent Significant Adverse Impacts
<input type="checkbox"/>	Identify processes and categories of activities which have, or are likely to have significant adverse impacts on biodiversity conservation and sustainable use
<input type="checkbox"/>	Monitor effects of these processes and categories of activities
<input type="checkbox"/>	Introduce appropriate procedures requiring environmental impact assessment of proposed projects that are likely to have significant adverse effects on biodiversity with a view to avoiding or minimising such effects
<input type="checkbox"/>	Introduce appropriate arrangements to ensure that the environmental consequences of its programmes and policies that are likely to have significant adverse impacts on biodiversity are duly taken into account
<input type="checkbox"/>	Where a significant adverse effect on biodiversity has been determined, regulate or manage the relevant processes and categories of activities
<input type="checkbox"/>	Promote national arrangements for emergency responses to activities or events, whether caused naturally or otherwise, which present a grave and imminent danger to biodiversity and encourage international cooperation to supplement such national efforts. Where appropriate and agreed by the States or regional economic integration organisations concerned, establish joint contingency plans

¹⁰⁸ Hard law measures are shown in green.

With regard to alien species, States have the duty to prevent their introduction and eradicate those that are a threat to ecosystems, habitats and species, such as albatrosses and petrels (Table 5.12).¹⁰⁹



Table 5.12: Categorisation of Biodiversity Measures for Alien Species¹¹⁰

	Alien Species
	Prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species
	Eliminate or control non-native species detrimental to albatrosses and petrels

5.7.3 Monitoring Measures for Biodiversity

States are required under the CBD agreement to identify and monitor biodiversity components (Table 5.13).¹¹¹

Table 5.13: Categorisation of Biodiversity Measures for Identification and Monitoring¹¹²

	Identification and Monitoring
	Identification of components of biodiversity
	Monitoring of components of biodiversity

5.8 Global Legal Provisions: Marine Environmental Protection

States have a general obligation to protect and preserve the marine environment.¹¹³ To this end, they must take measures, based on scientific data and criteria.¹¹⁴ Such measures include the adoption of laws and regulations to prevent, reduce and control marine pollution. Laws and regulations must address marine pollution arising from all sources within their national jurisdiction or under their control, from vessels and other

¹⁰⁹ CBD art 8h; ACAP art 3.1b.

¹¹⁰ Hard law measures are shown in green.

¹¹¹ CBD art 7a and art 7b; *Agenda 21*, Chapter 15 para 15.5c.

¹¹² Hard law measures are shown in green.

¹¹³ LOSC art 192.



¹¹⁴ Ibid art 200 and art 201.

activities and installations found on the high seas and deep seabed. States must also ensure the harmonisation of these policies at the regional level.¹¹⁵

States have to monitor the effects of pollution on the marine environment and assess the likelihood of activities polluting the marine environment.¹¹⁶ They also have to take the necessary measures to prevent the spread of pollution originating from within their national jurisdiction to marine ABNJ and other States' jurisdiction and avoid the transformation of one pollution type to another.¹¹⁷ States have to take measures to protect rare or fragile ecosystems, depleted, threatened or endangered species' habitats and other forms of marine life and measures to prevent the introduction of alien species.¹¹⁸ Measures entail flag State and port State measures to regulate pollution from vessels.¹¹⁹ States also have to implement the measures adopted and ensure their enforcement by adopting relevant flag State and port State measures.¹²⁰ Activities taking place within their jurisdiction or under their control with potentially harmful consequences for the marine environment need to be evaluated first through an EIA.¹²¹

As RFMOs are mainly focused on fisheries rather than marine pollution, the environmental protection measures selected for this section of the analysis are simplified and more general in nature (Table 5.14).

Table 5.14: Categorisation of Marine Environmental Protection Measures¹²²

	Marine Environmental Protection
	Protection of the marine environment

¹¹⁵ Ibid art 194.1, art 194.3, art 207-212. See also: *International Convention for the Prevention of Pollution from Ships as modified by the Protocol of 1978*, opened for signature 17 February 1978, ATS 9 (entered into force 2 October 1983); Annexes I-VI to MARPOL 73/78; *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter*, opened for signature 13 November 1972, ATS 16 (entered into force 30 August 1975); Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, opened for signature 7 November 1996, 36 ILM 1 (entered into force 24 March 2006) amended in 2006; *International Convention for the Control and Management of Ships' Ballast Water and Sediments*, opened for signature 13 February 2004 (not yet in force); *Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal*, opened for signature 22 March 1989, ATS 7 (entered into force 5 May 1992).

¹¹⁶ LOSC art 204.

¹¹⁷ Ibid art 194.2 and art 195.

¹¹⁸ Ibid art 194.5 and art 196.

¹¹⁹ Ibid art 211.

¹²⁰ Ibid arts 213-220.

¹²¹ Ibid art 206.

¹²² Hard law measures are shown in green.

Table 5.14 (continued)

- ☐ Adoption of laws and regulations to prevent, reduce and control marine pollution arising from all sources
- ☐ Monitor the effects of pollution on the marine environment
- ☐ Prevent the spreading of pollution to marine areas beyond national jurisdiction
- ☐ Take measures to protect vulnerable ecosystems, habitats and species
- ☐ Enforcement of these measures
- ☐ Undertake an EIA for each potentially dangerous activity to be carried out

5.9 Conclusion

When adopting and implementing conservation measures on the high seas, harvested species, same ecosystem species, biodiversity and the broader marine environment need to be taken into account. The main way forward for both the conservation of biodiversity and the protection of the marine environment is impact prevention. This can be done through the application of the precautionary approach, the use of EIAs, the protection of VMEs, habitats and species as well as marine pollution prevention.

Fisheries management is implemented under international law either through States directly or by cooperating through a relevant institution. In contrast, biodiversity measures under international law are very broad and there have been no concrete hard law measures proposed. It is, therefore, up to the States to adopt specific and relevant measures for the conservation of biodiversity. Overall, fisheries measures are based more on compliance and enforcement while biodiversity measures are focused on area-based management and the conservation of endangered and threatened species. There are no compliance and enforcement provisions for the conservation of biodiversity in the instruments negotiated to date.

The provisions provided in the CBD, although legally binding on Contracting Parties within national jurisdiction, are not applicable to high seas biodiversity due to the lack of jurisdictional competency of the CBD in these marine areas. The legal elements for the conservation of high seas biodiversity are very limited and refer only to specific species conservation as outlined in the CMS, CITES and ACAP treaties. Soft law instruments relating to biodiversity conservation are broader and do include high seas

biodiversity but their non-binding nature does not enable a mandatory application and enforcement of their content. Global measures aimed at institutions are only provided for fisheries; in the case of biodiversity measures, they are for States to implement either individually or through cooperative means.

States also have the legal obligation to regularly contribute and exchange scientific data through regional or global institutions. The obligation for States to collect accurate and comprehensive data applies only to fish data; for biodiversity, there is only a legally binding obligation to undertake research. Moreover, fisheries data is to be shared within the relevant institution but this is not the case with biodiversity.

As highlighted in Section 2.4.3 of Chapter 2, there is no explicit provision in the CBD detailing how much biodiversity should be conserved. The quantification of marine biodiversity conservation is provided by several global targets adopted under the auspices of the United Nations, which mainly focus on the application of area-based management. Although the global legal measures relevant to the conservation of high seas biodiversity outlined in this chapter are mostly fisheries measures, they also cover the two tangible components of high seas biodiversity, namely biodiversity resources and ecosystems. While the lack of explicit provision on the quantification of biodiversity conservation makes it difficult to identify whether these provisions are comprehensive enough, they do cover a broad range of management, conservation and compliance measures that, together, contribute towards the conservation of high seas biodiversity albeit not in the coherent and comprehensive manner needed.

6 CHALLENGES IN THE REGIONAL APPLICATION OF GLOBAL MEASURES FOR THE CONSERVATION OF HIGH SEAS BIODIVERSITY OF THE SOUTHEAST PACIFIC

6.1 Introduction

This chapter focuses on the regional institutional approach to the conservation of high seas biodiversity, focusing on the duty of States to conserve. It provides the results of the analysis, described in Chapter 5, aimed at assessing the extent to which the regional fisheries management organisations (RFMOs) of the Southeast Pacific have incorporated global legal measures pertinent to high seas biodiversity conservation into their conventions and implemented them.

The specific objectives of this chapter are to:

- 1) Assess whether the conventions of the three regional fisheries organisations (RFOs) of the Southeast Pacific have incorporated the legal provisions and measures recommended at the global level described in Chapter 5;
- 2) Evaluate the extent to which these global legal provisions and measures are being implemented through the three RFOs of the Southeast Pacific; and
- 3) Assess whether States are delegating their legal responsibilities to conserve high seas biodiversity to regional institutions and, if so, which global legal provisions and measures directed at States must be fulfilled through regional institutions.

6.2 Analysis Details

6.2.1 Result Sections

Given the large amount of hard and soft law provisions and measures that are to be implemented by States for the conservation of high seas living resources identified in Chapter 5, the results provided in this chapter have been divided, for the sake of simplicity, into two sections. The first section assesses the extent to which the regional institutions address the global legal provisions and measures identified in Chapter 5 that are aimed at States;¹ while the second section looks at the global legal provisions for the conservation of high seas living resources that are specifically addressed at institutions

¹ These global legal requirements are numbered from 1 to 26 in this thesis.

and how these are being implemented by the three regional institutions.² Although most of the global legal provisions identified in Chapter 5 are aimed directly at States rather than institutions, it is interesting to evaluate the extent to which States work through RFMOs under their duty to cooperate to fulfil these global legal obligations and hence the role of RFMOs in the conservation of high seas biodiversity.

6.2.2 RFMO Information

The analysis in this chapter was undertaken using readily available information and documents from the three institutions' websites.³ Their conventions and other relevant institutional legal documents, as well as meeting reports, relevant annexes, recommendations and decisions issued at each commission's meetings were reviewed.⁴ The results of the analysis are visually presented in the form of a traffic light rating system, as explained below.

6.2.3 Traffic Light Methodology

The traffic light rating system is a visual method used in food labelling, for performance monitoring by governments, industries and universities,⁵ for stock assessments,⁶ and for performance reviews of RFMOs.⁷ It has been used in food labelling for instance by the

² These global legal requirements are numbered from A to N in this thesis.

³ IATTC: <https://www.iattc.org/>; SPRFMO: <https://www.sprfmo.int/>; CPPS: <http://www.cpps-int.org/> (all accessed on 11 January 2015).

⁴ For IATTC: Convention for the Strengthening of the Inter-American Tropical Tuna Commission established by the 1949 Convention between the United States of America and the Republic of Costa Rica, opened for signature 27 June 2003 (entered into force 27 August 2010) ('IATTC Antigua Convention'); For SPRFMO: Convention on the Conservation and Management of High Seas Fishery Resources in the South Pacific Ocean, opened for signature 14 November 2009, ATS 28 (entered into force 24 August 2012) corrected in 2010 ('SPRFMO Convention'); For CPPS: CPPS, *Textos Básicos* (CPPS Secretaría General, 4th ed, 2013).

⁵ See, eg: Infrastructure Australia, *2013 State of Play Report: Australia's Key Economic Infrastructure Sectors* (December 2013) Australian Government Infrastructure Australia <www.infrastructureaustralia.gov.au/state-of-play/files/2013_State_of_Play_Report_on_Australias_Key_Economic_Infrastructure_Sectors_FINAL.pdf> (accessed: 10 January 2015); The University of Western Australia, *UWA Safety Compliance Monitoring Traffic Light System* (June 2014) University Safety Committee <www.safety.uwa.edu.au/management/monitoring/?a=1952106> (accessed: 10 January 2015); Stanislas de Finance, *A 'Traffic-Light Approach' to the Implementation of the 2011 and 2012 Country Specific Recommendations (CSRs)* (2012) European Parliament Directorate-General for Internal Policies, Economic Governance Support Unit (EGOV) <[http://www.europarl.europa.eu/RegData/etudes/etudes/join/2014/497735/IPOL-ECON_ET\(2014\)497735_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/etudes/join/2014/497735/IPOL-ECON_ET(2014)497735_EN.pdf)> (accessed: 10 January 2015).

⁶ See, eg: P Koeller et al, 'A Precautionary Approach to Assessment and Management of Shrimp Stocks in the Northwest Atlantic' (2000) 27 *Journal of Northwest Atlantic Fishery Science* 235; B T Hargrave, 'A Traffic Light Decision System for Marine Finfish Aquaculture Siting' (2002) 45 *Ocean and Coastal Management* 215; J F Caddy et al, 'Using an Empirical Traffic Light Procedure for Monitoring and Forecasting in the Gulf of St. Lawrence Fishery for the Snow Crab, *Chionoecetes opilio*' (2005) 76 *Fisheries Research* 123; ISSF, 'ISSF Tuna Stock Status Update, 2014: Status of the World Fisheries for Tuna' (ISSF Technical Report 2014-09, International Seafood Sustainability Foundation, 2014). The tuna RFMOs have agreed to use a 'Kobe Plot and Strategy Matrix' for their stock assessment, which also uses a traffic light approach to highlight the stock status, see, eg: Mark N Maunder and Alexandre Aires-da-Silva, 'Evaluation of the Kobe Plot and Strategy Matrix and their Application to Tuna in the EPO' (IATTC Scientific Advisory Committee 2nd meeting Document SAC-02-11, 9-12 May 2011); Laurence T Kell et al, 'An Evaluation of the Performance of the Kobe Strategy Matrix: An Example based upon a Biomass Dynamic Assessment Model' (2012) 68(3) *Collective Volume of Scientific Papers ICCAT* 1018.

⁷ See, eg: Serge M Garcia and Holly R Koehler, *Performance of the CCSBT 2009-2013: Independent Review by Serge M Garcia and Holly R Koehler* (2013) <http://www.ccsbt.org/userfiles/file/docs_english/operational_resolutions/2014_Independent_Performance_Review.pdf> (accessed: 10 January 2015), See especially Table 2 (p. 94) on the conservation and management performance criteria of the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) since its establishment; Estelle Couture and Rick Rideout, 'Standardizing the

Marine Stewardship Council (MSC) and the Australian Marine Conservation Society for their sustainable seafood guide and by the United Kingdom of Great Britain and Northern Ireland (UK) to give consumers a visual indication as to how much fat, sugar and salt there is in each packaged food sold in supermarkets.⁸

A traffic light approach to stock assessment was first coined by Caddy in his 1999 study, which looked at the use of such an approach to help better determine precautionary management measures when confronted with the assessment of data-poor fisheries.⁹ This approach to management has been viewed as positive by fisheries managers, scientists and the industry alike.¹⁰ In their analysis of the traffic light approach, Koeller et al found that, in comparison to traditional assessment methods, the traffic light method turns out to be more precautionary, notably because it can incorporate several data sources, including anecdotal information, political and economic considerations, that cannot be taken into account when using traditional methods to stock assessment modelling, such as the yield-per-recruit analysis or the virtual population analysis.¹¹ They also found that this traffic light method allows for increased transparency, which facilitates easier decision-making by all stakeholders.¹² Caddy et al concur by stating that such a method is simple and easily understood by non-technical audiences and allows for the identification of possible interactions between variables.¹³ Halliday et al also emphasise that the traffic light approach, through its simplicity and the fact that it uses the commonly recognised traffic lights as symbols, provides an important and effective communication tool.¹⁴

For its simplicity and as a powerful visual and communication tool, the traffic light rating system is used in this chapter to categorise and synthesise the results of the

Traffic Light Approach for Reporting on Convention Objectives' (NAFO Report SCR Doc. 14/045 Serial No N6342, NAFO Scientific Council Meeting, June 2014).

⁸ <http://www.sustainableseafood.org.au/pages/assessment-criteria.html>;

www.sustainableseafood.org.au/data/MiniGuide_30_May_2014_web.pdf (both accessed: 10 January 2015). The traffic light system has been used in the UK to label food but this issue has been controversial within the European Union (EU). See, eg: <http://www.eubusiness.com/news-eu/food-agriculture.y11>; <http://www.euractiv.com/food-industry-wins-battle-traffic-light-labels-news-495324>; <http://theconversation.com/food-traffic-lights-are-green-for-go-but-eu-holds-back-more-radical-measures-15403>; <http://www.foodnavigator.com/Policy/Commission-opens-proceedings-against-UK-s-traffic-light-label> (all accessed: 10 January 2015).

⁹ J F Caddy, 'Deciding on Precautionary Management Measures for a Stock Based on a Suite of Limit Reference Points (LRPs) as a Basis for a Multi-LRP Harvest Law' (1999) 32 *NAFO Scientific Council Studies* 55.

¹⁰ P Koeller et al, above n 6.

¹¹ Ibid, 246. See also: J F Caddy and D J Agnew, 'An Overview of Recent Global Experience with Recovery Plans for Depleted Marine Resources and Suggested Guidelines for Recovery Planning' (2004) 14 *Reviews in Fish Biology and Fisheries* 43.

¹² P Koeller et al, above n 6, 246.

¹³ J F Caddy et al, above n 6, 124.

¹⁴ R G Halliday, L P Fanning and R K Mohn, 'Use of the Traffic Light Method in Fishery Management Planning' (Research Document 2001/108, Canadian Science Advisory Secretariat, 2001).

analysis on the incorporation of high seas biodiversity obligations by RFMOs described in Chapter 5 for the three Southeast Pacific RFOs. The three different colour codes used, namely red, amber and green, better convey the main analysis outcomes and allow for an easier comparison of results between RFMOs. The choice of this rating system over a weighting and scoring method lies in the fact that this system allows for a more objective assessment approach. In this thesis, the legal requirements directed at States and at institutions provide the benchmark criteria against which each RFMO is assessed. The results of the analysis show where RFMOs stand and how much they still need to achieve to meet their international legal obligations. Through the traffic light rating system, this is done in a neutral and more compelling way, also allowing a better comparison between criteria and institutions than a numbered system would. Also, as mentioned above, a traffic light method can be readily understood by a wide audience and hence can have a positive impact on decision-making for regional improvement.

For each of the categories established in Chapter 5, the global legal provisions and measures were compared to the legal measures adopted by the three RFOs in their respective conventions. If the RFO's legal measures were fully matching the global legal measures required under international law, this was acknowledged with a green dot. If the RFO had one or more matching legal measures in its convention but not the full count, this was acknowledged with a yellow dot. When the RFOs did not have any matching legal measures in their conventions, this was denoted by a red dot. This methodology was applied in the same way when looking at the implementation by the RFOs of the global legal provisions and measures in the Southeast Pacific. It is to be noted here that it is the implementation of globally agreed legal provisions and measures for the conservation of high seas biodiversity that is being examined and not the implementation of the legal measures adopted by the RFOs under their respective conventions.

6.2.4 Particularity of the Comisión Permanente del Pacífico Sur (CPPS)

CPPS has the competence to promote the conservation of marine living resources and the prevention, reduction and control of marine pollution in areas beyond national jurisdiction (ABNJ) of the Southeast Pacific but, as explained in Section 4.3.2 of Chapter 4, the extent and scope of this competence is not clearly legally defined or

outlined.¹⁵ Through the 2000 *Framework Agreement for the Conservation of Living Marine Resources on the High Seas of the South Pacific* (Galapagos Agreement) and its 2003 Protocol, the establishment of a formal jurisdictional competency for the conservation and management of living resources in the high seas area of the Southeast Pacific was attempted, without success.¹⁶ Therefore, as CPPS primarily focuses on marine areas within the national jurisdiction of its Contracting Parties, neither its statute nor its regulatory framework provide legal provisions on the management of high seas living resources.

Although the 2000 Galapagos Agreement and its 2003 Protocol are not in force, they provide a basis to understand how the Southeast Pacific could have been managed through CPPS, had these two treaties been in force, and the potential dynamics that would have resulted with the Inter-American Tropical Tuna Commission (IATTC) and the South Pacific Regional Fisheries Management Organisation (SPRFMO).¹⁷ Throughout this chapter, all legal references used for CPPS, with the exception of the 2000 Galapagos Agreement, are in force. Also, given CPPS's focus on national waters, this chapter only evaluates the extent to which the global legal provisions and measures described in Chapter 5 have been incorporated into CPPS' conventions, notably its 2000 Galapagos Agreement. The extent to which the global legal provisions and measures are being implemented by CPPS will not be assessed.¹⁸

¹⁵ *Estatuto sobre Competencias y Estructura de la Comisión Permanente del Pacífico Sur* [Statute on Competency and Structure of the Permanent Commission for the South Pacific] (2013) ('*CPPS Estatuto*'); *Convenio para la Protección del Medio Marino y la Zona Costera del Pacífico Sudeste* [Convention for the Protection of the Marine Environment and Coastal Area of the Southeast Pacific], opened for signature 12 November 1981 (entered into force 19 May 1986) ('*CPPS Marine Environmental Protection Convention*'). *CPPS Estatuto* art 4 gives CPPS the competency to promote the conservation of marine living resources beyond the national jurisdiction of its member States without mentioning to which extent this competency applies. However, this is not a set jurisdictional right and CPPS' main focus remains on marine areas within the national jurisdiction of its member States. *CPPS Marine Environmental Protection Convention* art 1 applies to the marine areas within the national jurisdiction of member States (which includes Panama and the CPPS member States) and adjacent high seas areas that are impacted by such marine pollution. See Section 4.3.2 of Chapter 4.

¹⁶ *Acuerdo Marco para la Conservación de los Recursos Vivos Marinos en la Alta Mar del Pacífico Sudeste* ('*Acuerdo de Galápagos*') [Framework Agreement for the Conservation of Living Marine Resources on the High Seas of the South Pacific], opened for signature 14 August 2000 (not yet in force) ('*CPPS Galapagos Agreement*'); *Protocolo Modificatorio del Acuerdo Marco para la Conservación de los Recursos Vivos Marinos en la Alta Mar del Pacífico Sudeste* [Modificatory Protocol to the Framework Agreement for the Conservation of Living Marine Resources on the High Seas of the South Pacific], opened for signature 27 November 2003 (not yet in force) ('*CPPS Protocol to the Galapagos Agreement*'). See Section 4.3.2 of Chapter 4.

¹⁷ For CPPS, only the global legal requirements 1, 21, C and D on scientific research and data sharing described in this chapter have a formal legal basis. The other requirements' outcomes are dependent on the entry into force of the 2000 *CPPS Galapagos Agreement*.

¹⁸ Section 6.5 of this chapter on the implementation of these global legal measures will therefore only showcase IATTC (Section 6.5.1) and SPRFMO (Section 6.5.2).










6.3 General Legal Provisions for the Conservation of Biodiversity

This section evaluates the extent to which the regional institutions of the Southeast Pacific have integrated the global legal provisions and measures for the conservation of high seas living resources and the protection of the marine environment into their conventions using the categories established in Chapter 5. In this section, only the global legal measures aimed at States will be reviewed; the ones aimed directly at institutions will be analysed in Section 6.4 of this chapter. For each measure category, a summary table will highlight the research findings. As highlighted above, a green dot denotes a match between the global legal provisions and measures and the institution's convention measures; a yellow dot indicates a partial match because the global legal requirements are only partially integrated within the regional institution's convention; finally, a red dot indicates that the required global legal provisions and measures are not included within the RFO's constitution. The summary table is followed by a detailed explanation for each global legal requirement as to why each coloured dot was selected.

6.3.1 General Legal Provisions under the LOSC

This section focuses on the three basic legal requirements for the conservation and management of high seas living resources outlined in the *United Nations Convention on the Law of the Sea* (LOSC) in Section 2 of Part VII, namely the contribution and exchange of scientific data, the determination of an allowable catch, and the taking of non-discriminatory conservation measures.¹⁹

Table 6.1: Summary of the General Global Legal Provisions described in Chapter 5 and To What Extent the three Institutions' Constitutions Fulfil Them

<i>Legal Requirement</i>	<i>IATTC</i>	<i>CPPS</i>	<i>SPRFMO</i>
1. Contribute and exchange scientific data	 ²⁰	 ²¹	 ²²
2. Determine allowable catch	 ²³	 ²⁴	 ²⁵
3. Take non-discriminatory conservation measures	 ²⁶	 ²⁷	 ²⁸

¹⁹ Although the protection and preservation of the marine environment is also a basic legal requirement outlined in the LOSC in its Part XII, it will be treated in a separate section throughout this chapter.

²⁰ *IATTC Antigua Convention* art XVIII.2, art XXIV.1 and art XXVI.2.

²¹ *CPPS Estatuto* art 4h, art 4i, art 4l and art 4m; *CPPS Galapagos Agreement* art 7.e, art 7.f and art 7.g; *Reglamento de la Comisión Permanente del Pacífico Sur Personal Internacional de la CPPS* [Rules of the Permanent Commission for the South Pacific CPPS] (2013) ('*CPPS Reglamento*') art 3.2.

²² *SPRFMO Convention* art 3.1a.iv and art 8e.

²³ *IATTC Antigua Convention* art VII.1c and art VII.1l.

²⁴ *CPPS Galapagos Agreement* art 5.1f, 6b and art 6c.

²⁵ *SPRFMO Convention* art 8b, art 20.2c, art 20.3, art 20.4, art 21 and annex III.

²⁶ *IATTC Antigua Convention* art IV, art V.1, art VII.1c, art VII.1f, art VII.1g, art VII.1m and art VII.1v.

The extent to which the three RFOs have integrated these basic legal requirements into their conventions is assessed (Table 6.1).

Legal Requirement 1: Contribute and Exchange Scientific Data

The contribution and exchange of scientific data on fish stocks is one of the basic requirements outlined in the LOSC, which needs to be undertaken through regional or global organisations.²⁹ Both CPPS and SPRFMO, in its 2009 *Convention on the Conservation and Management of High Seas Fishery Resources in the South Pacific Ocean* (SPRFMO Convention), require the contribution and exchange of fisheries data between Contracting Parties as well as, for non-confidential data, with other relevant organisations and States.³⁰ They both fulfil this global legal requirement, as shown in Table 6.1 by the green dots. Both institutions also extend their scientific data requirement to the collection of data relating to fisheries impacts on marine ecosystems for SPRFMO and the undertaking of climatic and environmental studies for CPPS.³¹

IATTC Contracting Parties have to contribute fisheries data but its 2003 *Convention for the Strengthening of the Inter-American Tropical Tuna Commission established by the 1949 Convention between the United States of America and the Republic of Costa Rica* (IATTC Antigua Convention) does not explicitly mention the exchange of fisheries data with other organisations and States.³² This is therefore represented in Table 6.1 by a yellow dot. Nevertheless, IATTC encourages cooperation with other fisheries organisations to avoid work duplication.³³ This could implicitly signify that data must be exchanged between organisations in order to reach this objective.

Legal Requirement 2: Determine Allowable Catch

The determination of an allowable catch is another basic requirement and the only management measure explicitly outlined in the LOSC.³⁴ All three institutions have legal

²⁷ CPPS Reglamento art 33d; CPPS Galapagos Agreement art 2, art 5 and art 6.

²⁸ SPRFMO Convention art 2, art 3, art 4.2b, art 8a, art 19, art 20.1a, art 20.1c, art 20.1d, art 20.5, art 21 and art 22.

²⁹ United Nations Convention on the Law of the Sea, opened for signature 10 December 1982, ATS 31 (entered into force 16 November 1994) ('LOSC') art 119.2. Although this requirement is under the section termed 'Conservation of the Living Resources of the High Seas', the contribution and exchange of scientific data in this article is aimed at fish stocks rather than high seas living resources.

³⁰ CPPS Estatuto art 4h, art 4i, art 4l and art 4m; CPPS Galapagos Agreement art 7.e, art 7.f and art 7.g; SPRFMO Convention art 3.1a.iv and art 8e.

³¹ SPRFMO Convention art 3.1a.iv; CPPS Galapagos Agreement art 7e and art 7f; CPPS Reglamento art 3.2.

³² IATTC Antigua Convention art XVIII.2 and art XXVI.2.

³³ Ibid art XXIV.1.

³⁴ LOSC art 119.1.

provisions on the establishment of an allowable catch and fishing effort although, in the case of IATTC, the allowable catch and the fishing effort are outlined as two possible options that can be implemented separately rather than an obligation to be adopted simultaneously.³⁵ For this reason, IATTC obtains a yellow dot while SPRFMO and CPPS get a green dot in Table 6.1.

Legal Requirement 3: Take Non-discriminatory Conservation Measures

Article 119 of the LOSC requires States to establish measures for the conservation of high seas living resources, that is both harvested species and other species that are part of the same ecosystem.³⁶ These measures are to: a) be science-based; b) maintain or restore harvested populations at levels which can produce the maximum sustainable yield; c) take into consideration associated and dependent species and ensure that their population levels remain above levels at which their reproduction may become seriously threatened; and d) to take into account fishing patterns, the interdependence of stocks and international minimum standards.³⁷

The IATTC Antigua Convention focuses on the adoption of conservation measures for target fish stocks as well as, when necessary, for the same ecosystem or dependent species.³⁸ It also has a provision on the adoption of measures for the minimisation of bycatch of non-target species as well as the application of the precautionary approach.³⁹ The Commission can furthermore adopt other management measures necessary to achieve its objective and to prevent and eliminate activities undermining its conservation measures.⁴⁰ Measures adopted under this convention must take into account States' right to engage in high seas fishing as well as socio-economic impacts and thus such measures need to be non-discriminatory.⁴¹ There are, however, no provisions on conservation measures for other high seas living resources or the protection of biodiversity. For this reason, IATTC obtains a yellow dot (Table 6.1).

³⁵ *IATTC Antigua Convention* art VII.1c and art VII.1i; *SPRFMO Convention* art 8b, art 20.2c, art 20.3, art 20.4, art 21 and annex III; *CPPS Galapagos Agreement* art 5.1f, art 6b and art 6c.

³⁶ *LOSC* art 119.

³⁷ *Ibid* art 119.1a and art 119.1b. United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, opened for signature 8 September 1995, ATS 8 (entered into force 11 December 2001) ('UNFSA') provides the same basis for the elaboration of conservation measures in its art 5b and art 5e.

³⁸ *IATTC Antigua Convention* art VII.1c, art VII.1f and art VII.1v.

³⁹ *Ibid* art IV, art VII.1g and art VII.1m.

⁴⁰ *Ibid* art VII.1v.

⁴¹ *Ibid* preamble and art V.1.

In contrast, SPRFMO has legal provisions for the integrated management of the Convention Area's marine environment, which include the sustainable use of fishery resources, the protection of the marine environment, the protection of marine ecosystems, the application of the precautionary and ecosystem approaches as well as the preservation of biodiversity.⁴² SPRFMO therefore has a broader scope that takes into account marine ecosystems and habitats as well as vulnerable marine ecosystems (VMEs) rather than just a focus on targeted and dependent fish stocks. Conservation measures must be adopted for new or exploratory fisheries as well as in emergency cases when natural or anthropogenic factors have a negative impact on the sustainability of fishery resources.⁴³ Conservation measures must take into account economic aspects of States, such as dependency on resources, particularly for coastal States and developing countries, and thus must be non-discriminatory.⁴⁴ All this warrants the attribution of a green dot for SPRFMO (Table 6.1).

Had CPPS' 2000 Galapagos Agreement been in force, it would have provided legal provisions for the conservation of high seas living resources in the Southeast Pacific by applying the precautionary approach, taking into account the effects of fishing on associated and dependent species and the marine ecosystem as well as by minimising the bycatch of non-target species.⁴⁵ This 2000 Agreement also outlines a list of possible conservation measures, including amongst others the designation of conservation sub-areas, the setting of catch and effort levels, fishing closures, fish size limitations, as well as the adoption of adequate catch methods.⁴⁶ Its rules of procedure only stipulate the need for its General Secretary to propose measures for the sustainable use of marine resources.⁴⁷ While adopted conservation measures have to take into account the right of all States to engage in high seas fishing and the interests of coastal States, the Galapagos Agreement does not mention any social and economic considerations (Table 6.1).⁴⁸

⁴² *SPRFMO Convention* preamble, art 2, art 3, art 20.1a and art 20.1c. According to art 1, this include all fish, molluscs, crustaceans and other living resources that are neither sedentary, highly migratory, anadromous or catadromous. Marine mammals, marine reptiles and seabirds are not included in this definition.

⁴³ *Ibid* art 8a, art 20.1d, art 20.5 and art 22.

⁴⁴ *Ibid* preamble, art 3.1a.viii, art 4.2b, art 21 and art 19.

⁴⁵ *CPPS Galapagos Agreement* art 2, art 5.1a, art 5.1b and art 5.1f.

⁴⁶ *Ibid* art 6.






















⁴⁷ *CPPS Reglamento* art 33d.

⁴⁸ *CPPS Galapagos Agreement* preamble.

6.3.2 Fisheries Measures

This section focuses on the global legal fisheries measures outlined in Section 5.6 of Chapter 5. These fisheries measures are presented by categories, as established in Figure 5.3 of Chapter 5. In this section, the extent to which the three RFOs have integrated these global legal fisheries measures into their conventions is evaluated.

Table 6.2: Summary of the Fisheries Measures described in Chapter 5 and To What Extent the three Institutions' Constitutions Fulfil Them

<i>Legal Requirement</i>	<i>IATTC</i>	<i>CPPS</i>	<i>SPRFMO</i>
4. Conservation measures for target stocks	 49	 50	 51
5. Conservation measures for associated, dependent and same ecosystem species	 52	 53	 54
6. Compatibility of measures	 55	 56	 57
7. Protect critical fisheries habitats and vulnerable marine ecosystems	 58	 58	 59
8. Pollution, waste, discards and bycatch minimisation	 60	 61	 62
9. Prevention and elimination of overfishing and excess fishing capacity	 63	 64	 65
10. Application of the precautionary approach	 66	 67	 68

⁴⁹ *IATTC Antigua Convention* art VII.1c.

⁵⁰ Convenio sobre Organización de la Comisión Permanente de la Conferencia sobre Explotación y Conservación de las Riquezas Marítimas del Pacífico Sur [Convention on the Organisation of the Permanent Commission of the Conference on Exploitation and Conservation of Marine Resources of the South Pacific], opened for signature 18 August 1952 (entered into force 6 May 1955) ('*CPPS Organisation Convention*') art III.a and art III.b; *CPPS Galapagos Agreement* art 4 and art 6.

⁵¹ *SPRFMO Convention* art 8a, art 20.1a, art 20.5, art 20.6 and art 22.

⁵² *IATTC Antigua Convention* art VII.1f.

⁵³ *CPPS Estatuto* art 4a; *CPPS Galapagos Agreement* art 5.1c and art 5.1f.

⁵⁴ *SPRFMO Convention* art 3.1a.ii, art 20.1c and art 22.

⁵⁵ *IATTC Antigua Convention* art V.2.

⁵⁶ *CPPS Galapagos Agreement* art 5.1e.

⁵⁷ *SPRFMO Convention* art 3.1a.vi, art 4, art 8f and art 20.4.

⁵⁸ *Protocolo para la Conservación y Administración de las Áreas Marinas y Costeras Protegidas del Pacífico Sudeste* [Protocol for the Conservation and Management of Protected Marine and Coastal Areas of the Southeast Pacific], opened for signature 21 September 1989 (entered into force 24 January 1995) ('*CPPS Protocol for MPA Conservation and Management*') art II and art V.

⁵⁹ *SPRFMO Convention* art 3.1a.vii, art 10.2c and art 20.1d.

⁶⁰ *IATTC Antigua Convention* art VII.1g, art VII.1k and art VII.1n.

⁶¹ *CPPS Organisation Convention* art III.a; *CPPS Marine Environmental Protection Convention* art 3.1 and art 4; *CPPS Protocol for MPA Conservation and Management* art 7; *CPPS Galapagos Agreement* art 5.1f and art 6.

⁶² *SPRFMO Convention* art 3.1a.ii, art 3.1a.x, art 8i, art 20.2 and art 24.1c.

⁶³ *IATTC Antigua Convention* art VII.1c, art VII.1h, art VII.1i and art VII.1n.

⁶⁴ *CPPS Organisation Convention* art III.a; *CPPS Galapagos Agreement* art 5.1f and art 6.










⁶⁵ *SPRFMO Convention* art 3.1a.iii, art 8b, art 10.2b.ii, art 10.2b.iii, art 20.1b, art 20.2, art 20.3, art 20.4a, art 21 and annex III.

⁶⁶ *IATTC Antigua Convention* art IV, art VII.1^a, art VII.1d, art VII.1e, and art VII.1m.

⁶⁷ *CPPS Estatuto* art 2; *CPPS Galapagos Agreement* art 5.1b.

⁶⁸ *SPRFMO Convention* art 2, art 3.1b, art 3.2, art 8d, art 8g, art 10.2b, art 20.2, art 20.5, art 20.6, art 22 and art 27.1.

Table 6.2 (continued)

<i>Legal Requirement</i>	<i>IATTC</i>	<i>CPPS</i>	<i>SPRFMO</i>
11. Promotion of the effectiveness of regional and global conservation and management measures	 ⁶⁹	 ⁷⁰	 ⁷¹
12. Effective monitoring, control and surveillance (MCS)	 ⁷²	 ⁷³	 ⁷⁴
13. Enforcement of regional conservation and management measures	 ⁷⁵	 ⁷⁶	 ⁷⁷

Legal Requirement 4: Conservation Measures for Target Stocks

The requirements linked to this global legal provision are explained in Section 5.6.1 of Chapter 5. All three institutions meet the global legal requirements and therefore are awarded a green dot (Table 6.2). IATTC has to adopt measures that ensure ‘the long-term conservation and sustainable use of the fish stocks [and] maintain or restore the populations of harvested species at levels of abundance which can produce the maximum sustainable yield (...)’, including either a total allowable catch, a total allowable level of fishing capacity or a level of fishing effort.⁷⁸

Under SPRFMO, States have to adopt conservation and management measures that ensure the long-term sustainability of the fishery resources.⁷⁹ There is also a legal requirement to adopt measures on an emergency basis when ‘fishing presents a serious threat to the sustainability of fishery resources or the marine ecosystem (...) or when a natural phenomenon or human caused disaster has, or is likely to have, a significant

⁶⁹ *IATTC Antigua Convention* art VII.1n, art XX.2 and annex 1.

⁷⁰ CPPS, ‘Declaración Conjunta relativa a los Problemas de la Pesquería en el Pacífico Sur’ (Santiago de Chile, 18 de agosto de 1952) in CPPS, *Textos Básicos* (CPPS Secretaría General, 4th ed, 2013) 7 (‘*CPPS 1952 Declaration*’) art IV; *CPPS Galapagos Agreement* art 7 and art 8.3; *Convenio sobre Otorgamiento de Permisos para la Explotación de las Riquezas del Pacífico Sur* [Convention on the Licensing of Permits for the Exploitation of Resources of the South Pacific], opened for signature 4 December 1954 (entered into force 9 March 1956) (‘*CPPS Convention on the Licensing of Permits*’) art 1; *Reglamento de Permisos para la Explotación de las Riquezas del Pacífico Sur* [Permit Regulation for Resource Exploitation of the South Pacific] (1955) (‘*CPPS Permit Regulation*’) art 1 and art 3.

⁷¹ *SPRFMO Convention* art 8i, art 24.1c, art 25.3a, art 25.3b, art 26, art 27 and art 31.

⁷² *IATTC Antigua Convention* art VII.1i.

⁷³ *CPPS Galapagos Agreement* art 8.

⁷⁴ *SPRFMO Convention* art 8g, art 27.1, art 27.3 and art 28.

⁷⁵ *IATTC Antigua Convention* art VII.1v, art XIII.g, art XVIII.1, art XVIII.3, art XVIII.6, art XVIII.7, art XVIII.8, art XVIII.9, art XVIII.10 and art XX.

⁷⁶ *CPPS Organisation Convention* art V; *Convenio sobre Sistema de Sanciones* [Convention on Sanctions Systems], opened for signature 4 December 1954 (‘*CPPS Sanction Convention*’); *CPPS Galapagos Agreement* art 7.1, art 8.1, art 8.3, art 9 and art 10.

⁷⁷ *SPRFMO Convention* art 3.1a.ix, art 8g, art 8h, art 23.1b, art 24.3, art 24.4, art 25, art 26, art 27, art 28, and art 32.1.

⁷⁸ *IATTC Antigua Convention* art VII.1c.

⁷⁹ *SPRFMO Convention* art 8a and art 20.1.a.

adverse impact on the status of fishery resources’.⁸⁰ Such measures must also be adopted for new or exploratory fisheries.⁸¹ Furthermore, SPRFMO has a legal provision stating that the conservation measures adopted are to be ‘progressively developed and integrated into management strategies or plans (...)’.⁸²

Within the national jurisdiction of its Contracting Parties, CPPS has legal provisions on the adoption of conservation and management measures for targeted fish stocks that include the designation of protected species, fisheries closure times and areas, fishing methods and gear as well as fishing effort and catch regulations.⁸³ CPPS member States must determine targeted fish stocks and adopt conservation measures including, amongst others, the designation of conservation sub-areas, the setting of catch and effort levels, fishing closures, fish size limitations, as well as the adoption of adequate catch methods.⁸⁴

Legal Requirement 5: Conservation Measures for Associated, Dependent and Same Ecosystem Species

Section 5.6.1 of Chapter 5 provides the background information for this global legal requirement. Both IATTC and SPRFMO include this global legal requirement in their respective conventions and therefore get a green dot (Table 6.2). Under IATTC, these conservation measures are only to be adopted when necessary, that is when these species are either affected by fishing or are dependent on or associated with the target species. Measures are not specified but there is a need to ensure that population levels of such species remain ‘above levels at which their reproduction may become seriously threatened’.⁸⁵

SPFRMO requires member States to take into account associated and dependent species when fishing and to take measures ‘to maintain or restore populations of non-target and associated or dependent species to above levels at which their reproduction may become

⁸⁰ Ibid art 20.5.

⁸¹ Ibid art 22.

⁸² Ibid art 20.6.

⁸³ *CPPS Organisation Convention* art III.a and art III.b.

⁸⁴ *CPPS Galapagos Agreement* art 4 and art 6.

⁸⁵ *IATTC Antigua Convention* art VII.1f.

seriously threatened'.⁸⁶ This should also be done in the case of new or exploratory fisheries.⁸⁷

Associated, dependent and same ecosystem species are not specifically mentioned within CPPS' agreements but there is a general obligation to conserve living resources within the national jurisdiction of Contracting Parties.⁸⁸ For the high seas, the 2000 Galapagos Agreement only requests Parties to take into account the effects of fishing on associated and dependent species when establishing conservation measures for target species as well as to take measures to limit bycatch.⁸⁹ There are therefore no direct legal requirements to adopt conservation measures for associated, dependent and same ecosystem species under CPPS and hence CPPS gets a yellow dot (Table 6.2).

Legal Requirement 6: Compatibility of Measures

For all three institutions, there is a requirement that measures adopted for the high seas and those adopted for marine areas within national jurisdiction be compatible (this requirement is explained in Section 5.6.1 of Chapter 5).⁹⁰ All three institutions therefore get a green dot (Table 6.2).

Legal Requirement 7: Protect Critical Fisheries Habitats and Vulnerable Marine Ecosystems

This global legal requirement is explained in Section 5.6.1 of Chapter 5. IATTC does not have any provision on the protection of VMEs or critical fisheries habitats, hence the attribution of a red dot (Table 6.2). SPRFMO, on the other hand, gets a green dot as it has legal provisions on the adoption of measures for the protection of marine ecosystems and habitats, particularly of VMEs (Table 6.2).⁹¹ Which measures are to be adopted is not outlined but the impacts of fishing on these marine ecosystems must be taken into account and 'significant adverse impacts on them' prevented.⁹²

⁸⁶ *SPRFMO Convention* art 3.1a.ii and art 20.1c.

⁸⁷ *Ibid* art 22.

⁸⁸ *CPPS Estatuto* art 4a.

⁸⁹ *CPPS Galapagos Agreement* art 5.1c and art 5.1f.

⁹⁰ *IATTC Antigua Convention* art V.2; *SPRFMO Convention* art 3.1a.vi, art 4, art 8f and art 20.4; *CPPS Galapagos Agreement* art 5.1e.

⁹¹ *SPRFMO Convention* art 3.1a.vii and art 20.1d.

⁹² *Ibid* art 10.2c.

Although CPPS does not have any provisions for the high seas in place, it has a provision requiring the adoption of conservation measures to protect VMEs within national jurisdiction, thus earning a yellow dot (Table 6.2).⁹³ To this end, protected areas have to be established and integrated management promoted. Within these protected areas, measures must be adopted such as the prohibition against undertaking seabed mining and other activities that may cause adverse effects on the protected species, as well as the regulation of scientific activities in the area and the commerce of protected species.⁹⁴

Legal Requirement 8: Pollution, Waste, Discards and Bycatch Minimisation

This legal requirement is explained in Section 5.6.2 of Chapter 5, with the detailed legal requirements found in Table 5.1 of Chapter 5. IATTC requests the adoption of measures to avoid waste, discards and bycatch of non-target species of both fish and non-fish species, also through lost and discarded gear, and impacts on associated and dependent species with particular regard for endangered species.⁹⁵ In this respect, IATTC encourages ‘the development and use of selective, environmentally safe and cost-effective fishing gear and techniques (...)’.⁹⁶

Although IATTC requests the adoption of bycatch measures, it doesn’t have any explicit mention of driftnets nor the adoption of appropriate plans of action for the conservation of *Chondrichthyes* and seabirds.⁹⁷ IATTC does, however, have a provision on the application of the United Nations Food and Agriculture Organization (FAO) International Plans of Action (IPOAs), which would include the reduction of incidental seabird catches in longline fisheries, the conservation of sharks and the management of fishing capacity.⁹⁸ IATTC’s Antigua Convention also does not explicitly mention the minimisation of pollution, only the minimisation of impacts on species. IATTC does not mention any illegal, unreported and unregulated (IUU) fishing in its Antigua Convention but Article VII.1n mentioned above would also include the FAO *International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing* (IPOA-IUU) (Table 6.2).

⁹³ CPPS Protocol for MPA Conservation and Management art II.

⁹⁴ Ibid art V.

⁹⁵ IATTC Antigua Convention art VII.1g.

⁹⁶ Ibid art VII.1k.

⁹⁷ Ibid art VII.1g. Species of the class *Chondrichthyes* include: sharks, rays, skates (all of the *Elasmobranchii* sub-class) and chimaeras (*Holocephali* sub-class).

⁹⁸ Ibid art VII.1n.

SPRFMO provisions cover the adoption of measures for pollution, waste, and discards minimisation.⁹⁹ This notably includes the adoption of size limits, closure areas and types of fishing gear that may be used.¹⁰⁰ The SPRFMO Convention also does not explicitly mention the minimisation of bycatch, driftnet use or the adoption of plans of action for the conservation of *Chondrichthyes* and seabirds, only the minimisation of impacts on VMEs.¹⁰¹ The Commission, however, has to adopt measures to prevent, deter and eliminate IUU fishing (Table 6.2).¹⁰²

CPPS has provisions on the adoption of measures to prevent bycatch, to identify species to be protected, to establish open and closed fishing zones and seasons and minimum fish size, and on the use of selective fishing gear and techniques.¹⁰³ It also has provisions on the adoption of measures for pollution minimisation and the protection of the marine environment.¹⁰⁴ However, CPPS does not have any provisions on the adoption of explicit measures regarding seabirds or *Chondrichthyes* and does not have any provisions on IUU fishing or the elimination of particular destructive fishing practices, such as driftnet fishing (Table 6.2).

Legal Requirement 9: Prevention and Elimination of Overfishing and Excess Fishing Capacity

This legal requirement is explained in Section 5.6.2 of Chapter 5, with the detailed legal requirements found in Table 5.2 of Chapter 5. IATTC has legal provisions on the prevention and elimination of overfishing and excess fishing capacity, including through the establishment of allowable catch and fishing effort measures.¹⁰⁵ However, there are no legal provisions on the development of management plans or regional assessments for improved management of fishing capacity. IATTC only has a provision on the application of the FAO IPOAs, which would include the management of fishing capacity (Table 6.2).¹⁰⁶

⁹⁹ *SPRFMO Convention* art 3.1a.ii and art 3.1a.x.

¹⁰⁰ *Ibid* art 20.2.

¹⁰¹ *Ibid* art 10.2c.

¹⁰² *Ibid* art 8i and art 24.1c.

¹⁰³ *CPPS Galapagos Agreement* art 5.1f and art 6; *CPPS Organisation Convention* art III.a.

¹⁰⁴ *CPPS Protocol for MPA Conservation and Management* art 7; *CPPS Marine Environmental Protection Convention* art 3.1 and art 4.

¹⁰⁵ *IATTC Antigua Convention* art VII.1c, art VII.1h and art VII.1l.

¹⁰⁶ *Ibid* art VII.1n.

SPRFMO has very precise legal provisions on the prevention and elimination of overfishing and excess fishing capacity, particularly with regard to the establishment of allowable catch and fish effort measures.¹⁰⁷ SPRFMO furthermore has legal provisions on the development of management plans for fishing capacity, as well as a provision for the adoption of size limits, closure areas and types of fishing gear that may be used (Table 6.2).¹⁰⁸

As with IATTC, CPPS does have legal provisions to establish an allowable catch and fishing effort measures and does not have any provisions on the development of management plans or regional assessments for improved management of fishing capacity (Table 6.2).¹⁰⁹

Legal Requirement 10: Application of the Precautionary Approach

This legal requirement is explained in Section 5.6.2 of Chapter 5, with the detailed legal requirements found in Table 5.3 of Chapter 5. In contrast to SPRFMO, IATTC does not mention the application of the precautionary approach in its Preamble. However, IATTC has provisions on the application of the precautionary approach, which should follow the guidance outlined in the 1995 *Code of Conduct for Responsible Fisheries* (Code of Conduct) and 1995 *United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks* (UNFSA).¹¹⁰ Monitoring should be applied in cases when ‘the status of target stocks or non-target or associated or dependent species is of concern’.¹¹¹ It furthermore requests the conduct of scientific research to assess the impacts of fishing on target and non-target species.¹¹² There is no provision on the determination of stock-specific reference points, the adoption of conservation plans or of cautious measures for new or exploratory fisheries or emergency measures in cases of negative natural or anthropogenic impacts on fish stocks (Table 6.2).

¹⁰⁷ *SPRFMO Convention* art 3.1a.iii, art 8b, art 20.1b, art 20.3, art 20.4a, art 21 and annex III.

¹⁰⁸ *Ibid* art 10.2b.ii, art 10.2b.iii and art 20.2.

¹⁰⁹ *CPPS Organisation Convention* art III.a; *CPPS Galapagos Agreement* art 5.1f and art 6.

¹¹⁰ *IATTC Antigua Convention* art IV, art VII.1d, art VII.1e and art VII.1m.

¹¹¹ *Ibid* art IV.3.

¹¹² *Ibid* art VII.1a.

SPRFMO highlights the application of the precautionary approach as one of the means to attain its objective of long-term conservation and sustainable use of fishery resources in its Convention Area.¹¹³ The precautionary approach is also to be applied as outlined in the 1995 *Code of Conduct* and 1995 UNFSA through the application of reference points and management plans, emergency measures in cases of impacts on fish stocks, as well as for new or exploratory fisheries.¹¹⁴ Monitoring and research programmes must also be undertaken (Table 6.2).¹¹⁵

CPPS mentions the precautionary principle as one of its strategic points necessary to reach its objective of an integral and sustainable development of the region.¹¹⁶ In the not-in-force 2000 Galapagos Agreement, Parties must adopt precautionary measures that include reference points.¹¹⁷ There is no mention of emergency measures or measures for new or exploratory fisheries or monitoring of non-target species populations (Table 6.2).

All three organisations have a legal provision on the use of caution when information is uncertain, unreliable or inadequate. The absence of such information is not to be used as a reason for postponing or failing to take conservation and management measures.¹¹⁸

Legal Requirement 11: Promotion of the Effectiveness of Regional and Global Conservation and Management Measures

This legal requirement is explained in Section 5.6.3 of Chapter 5, with the detailed legal requirements found in Table 5.4 and Table 5.7 of Chapter 5. Only duly authorised vessels are entitled to fish for fish stocks in the Convention Areas of the three Southeast Pacific organisations.¹¹⁹ Parties to the IATTC have to maintain a record of vessels that are entitled to fish in the Convention Area.¹²⁰ There are no specific measures in the IATTC Antigua Convention on the marking of vessels and gear or on port State

¹¹³ *SPRFMO Convention* art 2.

¹¹⁴ *Ibid* art 3.1b, art 3.2, art 10.2b, art 20.2, art 20.5, art 20.6 and art 22.

¹¹⁵ *Ibid* art 8d, art 8g and art 27.1.

¹¹⁶ *CPPS Estatuto* art 2. Both the terms precautionary approach and precautionary principle have been used, although most of the global environmental agreements generally refer to the precautionary approach (Patricia Birnie, Alan Boyle and Catherine Redgwell, *International Law and the Environment* (Oxford University Press, 3rd ed., 2009), 155). See more detailed explanation in Section 3.3.2.2 of Chapter 3.

¹¹⁷ *CPPS Galapagos Agreement* art 5.1b.

¹¹⁸ *IATTC Antigua Convention* art IV.2; *SPRFMO Convention* art 3.2; *CPPS Galapagos Agreement* art 5.1b.

¹¹⁹ *IATTC Antigua Convention* art XX.2; *SPRFMO Convention* art 25.2 and art 25.3a; *CPPS 1952 Declaration* art IV; *CPPS Convention on the Licensing of Permits* art 1; *CPPS Permit Regulation* art 1 and art 3.

¹²⁰ *IATTC Antigua Convention* annex 1.

measures to combat IUU fishing, except for the legal provision encouraging the application of the FAO IPOA, which would include the *IPOA-IUU* (Table 6.2).¹²¹

In contrast, CPPS and SPRFMO have legal provisions on the adoption of IUU prevention measures and, in the case of SPRFMO, to cooperate with other organisations to this effect.¹²² Both SPRFMO and CPPS have legal provisions on the maintenance of a fishing vessel registry for the Convention Area and the marking of fishing gear and vessels (Table 6.2).¹²³

Legal Requirement 12: Effective Monitoring, Control and Surveillance (MCS)

This legal requirement is explained in Section 5.6.3 of Chapter 5, with the detailed legal requirements found in Table 5.5 and Table 5.7 of Chapter 5. Both SPRFMO and CPPS have legal provisions on the development of monitoring and surveillance measures as well as on the adoption of boarding and inspection procedures.¹²⁴ SPRFMO furthermore has a legal provision on the establishment of an observer programme while CPPS has, in the subsidiary 2000 Galapagos Agreement, a legal obligation for Parties to establish a vessel monitoring system (VMS) (Table 6.2).¹²⁵

IATTC, on the other hand, only has a provision on the establishment of a comprehensive monitoring programme.¹²⁶ It does not have provisions for an observer programme or boarding and inspection procedures. None of these organisations provide for detailed measures in their conventions leaving the development of such measures to be discussed and negotiated at a later stage (Table 6.2).

Legal Requirement 13: Enforcement of Regional Conservation and Management Measures

This legal requirement is explained in Section 5.6.3 of Chapter 5, with the detailed legal requirements found in Table 5.6 and Table 5.7 of Chapter 5. Parties to the IATTC and SPRFMO Conventions must take measures to ensure the implementation of and compliance with these conventions, including that vessels comply and do not undermine

¹²¹ Ibid art VII.1n.

¹²² *SPRFMO Convention* art 8i, art 24.1c, art 26, art 27 and art 31; *CPPS Galapagos Agreement* art 8.3.

¹²³ *SPRFMO Convention* art 25.3b and art 27.1a; *CPPS Galapagos Agreement* art 7.

¹²⁴ *SPRFMO Convention* art 8g, art 27.1 and art 27.3; *CPPS Galapagos Agreement* art 8.

¹²⁵ *SPRFMO Convention* art 28; *CPPS Galapagos Agreement* art 8.1.

¹²⁶ *IATTC Antigua Convention* art VII.1i.







the effectiveness of measures put into place by the Commissions.¹²⁷ In this respect, they must investigate infractions, apply sanctions, and collect and report on catch and effort data.¹²⁸ IATTC does not mention any regulation regarding transshipments at sea and in ports. In contrast, SPRFMO has a provision on landings and transshipments (Table 6.2).¹²⁹

CPPS has legal provisions requesting its member States to ensure the implementation of and compliance with its convention.¹³⁰ Vessels flying the flag of member States must not undermine the effectiveness of adopted measures.¹³¹ Member States must also apply sanctions, investigate infractions, and regulate and prohibit transshipments.¹³² Within national jurisdiction, CPPS Parties have to adopt and apply sanctions to infractions to ensure the enforcement of CPPS' legal provisions (Table 6.2).¹³³

6.3.3 Biodiversity Measures

This section focuses on the global legal biodiversity measures outlined in Section 5.7 of Chapter 5. These biodiversity measures are presented in categories, as depicted in Figure 5.7 of Chapter 5. In this section, the extent to which the three RFOs have integrated these global legal biodiversity measures into their conventions is assessed.

Table 6.3: Summary of the Biodiversity Measures described in Chapter 5 and To What Extent the three Institutions' Constitutions Fulfil Them

<i>Legal Requirement</i>	<i>IATTC</i>	<i>CPPS</i>	<i>SPRFMO</i>
14. Area-based management		 ¹³⁴	 ¹³⁵
15. Protection of endangered and threatened species		 ¹³⁶	

¹²⁷ *IATTC Antigua Convention* art VII.1v, art XVIII.1 and art XX; *SPRFMO Convention* art 3.1a.ix, art 8g, art 8h, art 24.3, art 25, art 26, art 27 and art 32.1.

¹²⁸ *IATTC Antigua Convention* art XIII.g, art XVIII.2, art XVIII.3, art XVIII.6, art XVIII.7, art XVIII.8, art XVIII.9 and art XVIII.10; *SPRFMO Convention* art 3.1a.ix, art 23.1b, art 24.3, art 24.4 and art 25.

¹²⁹ *SPRFMO Convention* art 25.1d.

¹³⁰ *CPPS Galapagos Agreement* art 8.1.

¹³¹ *Ibid* art 7.1.

¹³² *Ibid* art 8.3, art 9 and art 10.













¹³³ *CPPS Organisation Convention* art 5. See also: *CPPS Sanction Convention*.

¹³⁴ *CPPS Estatuto* art 2; *CPPS Organisation Convention* art III.a; *CPPS Protocol for MPA Conservation and Management* art II; *CPPS Galapagos Agreement* art 4.5 and art 6.

¹³⁵ *SPRFMO Convention* art 2, art 3.1a.vii and art 20.1d.

¹³⁶ *CPPS Protocol for MPA Conservation and Management* art II and art V.

Table 6.3 (continued)

<i>Legal Requirement</i>	<i>IATTC</i>	<i>CPPS</i>	<i>SPRFMO</i>
16. Adoption of measures relating to the use of biological resources to avoid or minimise adverse impacts on biodiversity	 ¹³⁷	 ¹³⁸	 ¹³⁹
17. Significant adverse impacts prevention	 ¹⁴⁰	 ¹⁴¹	 ¹⁴²
18. Prevention of alien species introduction	 ¹⁴³	 ¹⁴⁴	 ¹⁴⁵
19. Identification and monitoring	 ¹⁴³	 ¹⁴⁴	 ¹⁴⁵

Legal Requirement 14: Area-based Management

This legal requirement is explained in Section 5.7.1 of Chapter 5, with the detailed legal requirements found in Table 5.8 of Chapter 5. Area-based management measures apply to a delimited marine area of particular interest for conservation and management. These measures can be implemented by spatially dividing the area into management sections or by applying temporal prohibitions on activities taking place in the area.

Neither IATTC nor SPRFMO have legal provisions on the specific use of area-based management or the establishment of protected areas and time and area closures. The conservation measures that these organisations must adopt for the conservation of target fish stocks and other associated or dependent species are not specifically outlined in either convention thus leaving States Parties to decide on the appropriate measures to be adopted. In contrast to IATTC, SPRFMO does have a legal provision on the application of the ecosystem approach as well as on the protection of marine ecosystems and habitats, particularly of VMEs, although detailed measures and ways of achieving these goals are not outlined (Table 6.3).¹⁴⁶

¹³⁷ *IATTC Antigua Convention* art IV, art VII.1gf, art VII.1g, art VII.1h and art VII.1m.

¹³⁸ *CPPS Organisation Convention* art III.a and art III.e; *CPPS Galapagos Agreement* art 5 and art 6.

¹³⁹ *SPRFMO Convention* art 3.1a.ii, art 3.1a.iii, art 3.1a.vii, art 3.1a.x, art 3.1b, art 3.2, art 8.i, art 20.1b, art 20.1d, art 20.5 and art 24.1c.

¹⁴⁰ *IATTC Antigua Convention* art IV, art VII.1gf, art VII.1g, art VII.1h, art VII.1i and art VII.1m.

¹⁴¹ *CPPS Protocol for MPA Conservation and Management* art VII; *CPPS Galapagos Agreement* art 5.1c and art 5.1d.

¹⁴² *SPRFMO Convention* art 3.1a.ii, art 3.1a.iii, art 3.1a.vii, art 3.1a.x, art 3.1b, art 3.2, art 8g, art 8.i, art 10.2a, art 10.2c, art 20.1b and art 24.1c.

¹⁴³ *IATTC Antigua Convention* art VII.1i.

¹⁴⁴ *CPPS Estatuto* art 4.i.

¹⁴⁵ *SPRFMO Convention* art 8g and art 27.1.

¹⁴⁶ *Ibid* art 2, art 3.1a.vii and art 20.1d.

CPPS, on the other hand, has provisions for the establishment of marine protected areas (MPAs) and fisheries closure areas as well as the protection of VMEs within the national jurisdiction of its Contracting Parties.¹⁴⁷ These provisions are also provided in the 2000 Galapagos Agreement for the high seas.¹⁴⁸ The ecosystem approach is one of the principles identified by CPPS to achieve its strategic goal and is also mentioned in the 2000 Galapagos Agreement for the management of high seas fisheries (Table 6.3).¹⁴⁹

Legal Requirement 15: Protection of Endangered and Threatened Species

This legal requirement is explained in Section 5.7.1 of Chapter 5, with the detailed legal requirements found in Table 5.9 of Chapter 5. None of the Southeast Pacific organisations mentions the *Convention on the Conservation of Migratory Species of Wild Animals* (CMS) or *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES) in their conventions.

Neither IATTC nor SPRFMO have specific measures for the protection of endangered or threatened species; they only have provisions on the conservation of associated or dependent species, with SPRFMO also having provisions on the protection of VMEs. In contrast, CPPS has legal provisions on the protection of endangered and threatened species of fauna and flora within national jurisdiction, requesting Parties to adopt area-based management measures for their conservation.¹⁵⁰ CPPS does not have any such provisions in the 2000 Galapagos Agreement for the high seas of the Southeast Pacific (Table 6.3).

Legal Requirement 16: Adoption of Measures relating to the Use of Biological Resources to Avoid or Minimise Adverse Impacts on Biodiversity

This legal requirement is explained in Section 5.7.2 of Chapter 5, with the detailed legal requirements found in Table 5.10 of Chapter 5. None of the three organisations have specific measures regarding the use of biological resources for biodiversity conservation. However, as mentioned above, there are legal provisions on impact

¹⁴⁷ CPPS Protocol for MPA Conservation and Management art II; CPPS Organisation Convention art IIIa.

¹⁴⁸ CPPS Galapagos Agreement art 6.

¹⁴⁹ CPPS Estatuto art 2; CPPS Galapagos Agreement art 4.5.

¹⁵⁰ CPPS Protocol for MPA Conservation and Management art II and art V.

prevention from fishing and the precautionary approach.¹⁵¹ There is no specific legal provision relating to the conservation of albatrosses and petrels (Table 6.3).

Legal Requirement 17: Significant Adverse Impacts Prevention

This legal requirement is explained in Section 5.7.2 of Chapter 5, with the detailed legal requirements found in Table 5.11 of Chapter 5. None of the three Southeast Pacific organisations has legal requirements for the identification and monitoring of processes and categories of activities which are likely to have significant adverse impacts on biodiversity or on the use of environmental impact assessments (EIAs). However, as mentioned above, there are legal provisions on impact prevention from fishing, the application of the precautionary approach and the monitoring of fishing activities (Table 6.3).¹⁵²

Legal Requirement 18: Prevention of Alien Species Introduction

This legal requirement is explained in Section 5.7.2 of Chapter 5, with the detailed legal requirements found in Table 5.12 of Chapter 5. None of the three organisations of the Southeast Pacific has legal provisions on the prevention of alien species introduction (Table 6.3).

Legal Requirement 19: Identification and Monitoring

This legal requirement is explained in Section 5.7.3 of Chapter 5, with the detailed legal requirements found in Table 5.13 of Chapter 5. Neither IATTC, SPRFMO nor CPPS have legal requirements for the identification and monitoring of biodiversity. However, they do have legal requirements for the monitoring of fishing activities (Table 6.3).¹⁵³

6.3.4 Scientific Data

This section focuses on the global legal measures on scientific data outlined in Section 5.5 of Chapter 5. These measures on scientific data are presented in categories, as depicted in Figure 5.2 of Chapter 5. In this section, the extent to which the three RFOs













¹⁵¹ *IATTC Antigua Convention* art IV, art VII.1f, art VII.1g, art VII.1h and art VII.1m; *SPRFMO Convention* art 3.1a.ii, art 3.1a.iii, art 3.1a.vii, art 3.1a.x, art 3.1b, art 3.2, art 8.i, art 20.1b, art 20.1d, art 20.5 and art 24.1c; *CPPS Organisation Convention* art III.a; *CPPS Galapagos Agreement* art 5 and art 6.

¹⁵² *IATTC Antigua Convention* art IV, art VII.1f, art VII.1g, art VII.1h, art VII.1i and art VII.1m; *SPRFMO Convention* art 3.1a.ii, art 3.1a.iii, art 3.1a.vii, art 3.1a.x, art 3.1b, art 3.2, art 8.i, art 10.2a, art 10.2c, art 20.1b and art 24.1c; *CPPS Protocol for MPA Conservation and Management* art VII; *CPPS Galapagos Agreement* art 5.1c and art 5.1d.

¹⁵³ *IATTC Antigua Convention* art VII.1i; *SPRFMO Convention* art 8g and art 27.1; *CPPS Estatuto* art 4.i; *CPPS Galapagos Agreement* art 8.

have integrated these global legal measures on scientific data into their conventions is evaluated.

Table 6.4: Summary of the Scientific Data Provisions described in Chapter 5 and To What Extent the three Institutions' Constitutions Fulfil Them

<i>Legal Requirement</i>	<i>IATTC</i>	<i>CPPS</i>	<i>SPRFMO</i>
20. Data collection	 154	 155	 156
21. Data sharing	 157	 158	 159
22. Education and training	 160	 161	
23. Scientific criteria	 162		 163

Legal Requirement 20: Data Collection

IATTC has legal provisions for scientific research on target fish stocks and non-target species.¹⁶⁴ The IATTC Commission must establish a comprehensive data collection programme, which includes stocks data and catch and effort data.¹⁶⁵ SPRFMO also promotes the conduct of scientific research and requests the collection of data on fishery resources and marine ecosystems in the Convention Area.¹⁶⁶ For both Commissions, there is no mention of broader scientific research on biodiversity (Table 6.4).

CPPS encourages the conduct of scientific research on marine resources, and particularly on fisheries, within the national jurisdiction of its Contracting Parties as well as the undertaking of climatic and socio-economic studies.¹⁶⁷ The 2000 Galapagos Agreement also requires the collection of fisheries data (Table 6.4).¹⁶⁸

¹⁵⁴ *IATTC Antigua Convention* art VII.1a, art VII.1i, art XIII.e, art XIII.g, art XVIII.2 and art XVIII.4.

¹⁵⁵ *CPPS Estatuto* art 4h, art 4i and art 4l; *CPPS Reglamento* art 3.2; *CPPS 1952 Declaration* art II; *CPPS Organisation Convention* art III.c and art III.d; *CPPS Galapagos Agreement* art 7.e, art 7.f and art 7.g.

¹⁵⁶ *SPRFMO Convention* art 3.1a.iv, art 8d, art 23, art 24.1d, art 28.1 and annex III.1.

¹⁵⁷ *IATTC Antigua Convention* art XIII.i, art XVI.1a, art XVIII.2 and art XXVI.2.

¹⁵⁸ *CPPS Estatuto* art 4m; *CPPS Reglamento* art 33e; *CPPS Organisation Convention* art III.g; *CPPS Galapagos Agreement* art 7.f.

¹⁵⁹ *SPRFMO Convention* art 8e, art 23.1d, art 23.1e, art 23.2 and art 29.

¹⁶⁰ *IATTC Antigua Convention* art VII.1k and art XXIII.1.

¹⁶¹ *CPPS Galapagos Agreement* art 7.g.

¹⁶² *IATTC Antigua Convention* art VII.1b and art XIII.f.

¹⁶³ *SPRFMO Convention* art 8c.

¹⁶⁴ *IATTC Antigua Convention* art VII.1a.

¹⁶⁵ *Ibid* art VII.1i, art XIII.e, art XIII.g, art XVIII.2 and art XVIII.4.

¹⁶⁶ *SPRFMO Convention* art 3.1a.iv, art 8d, art 23, art 24.1d, art 28.1 and annex III.1.

¹⁶⁷ *CPPS Estatuto* art 4h, art 4i and art 4l; *CPPS Reglamento* art 3.2; *CPPS 1952 Declaration* art II; *CPPS Organisation Convention* art III.c and art III.d; *CPPS Galapagos Agreement* art 7f and art 7g.

¹⁶⁸ *CPPS Galapagos Agreement* art 7e.

Legal Requirement 21: Data Sharing

States Parties to the IATTC have to provide all relevant information concerning their fishing activities to the IATTC.¹⁶⁹ They also have to exchange information regarding the activities of non-member vessels but there is no general provision on the sharing of data with other organisations or stakeholders.¹⁷⁰ IATTC also has legal provisions on the publication and dissemination of findings and data (Table 6.4).¹⁷¹

SPRFMO and CPPS, on the other hand, have provisions on the exchange of data with other organisations and stakeholders.¹⁷² Under SPRFMO, non-confidential data is to be publicly available (Table 6.4).¹⁷³

Legal Requirement 22: Education and Training

Neither SPRFMO nor CPPS have legal provisions on education and training. Even with the provision on developing countries, SPRFMO does not mention education or training, only financial and human resource assistance as well as technology transfer (Table 6.4).¹⁷⁴

In contrast, IATTC has a provision on training for developing countries that are Parties to the Antigua Convention.¹⁷⁵ Apart from CPPS in its not-in-force 2000 Galapagos Agreement, none of the other organisations have a provision on the development of appropriate technologies (Table 6.4).¹⁷⁶

Legal Requirement 23: Scientific Criteria

Both IATTC and SPRFMO have legal provisions on the adoption of data standards. CPPS, on the other hand, does not have any legal provision on this matter (Table 6.4).¹⁷⁷

¹⁶⁹ *IATTC Antigua Convention* art XVIII.2.

¹⁷⁰ *Ibid* art XXVI.2.

¹⁷¹ *Ibid* art XIII.i and art XVI.1a.

¹⁷² *SPRFMO Convention* art 8e, art 23.1d and art 23.1e; *CPPS Estatuto* art 4m; *CPPS Reglamento* art 33e; *CPPS Organisation Convention* art III.g; *CPPS Galapagos Agreement* art 7.f.

¹⁷³ *SPRFMO Convention* art 23.2 and art 29.

¹⁷⁴ *Ibid* art 19.

¹⁷⁵ *IATTC Antigua Convention* art VII.1k and art XXIII.1.










¹⁷⁶ *CPPS Galapagos Agreement* art 7.g.

¹⁷⁷ *IATTC Antigua Convention* art VII.1b and art XIII.f; *SPRFMO Convention* art 8c.

6.3.5 Marine Environmental Protection Measures

This section focuses on the global legal marine environmental protection measures outlined in Section 5.8 of Chapter 5. These marine environmental protection measures are presented by categories, as established in Table 5.14 of Chapter 5. In this section, the extent to which the three RFOs have integrated these global marine environmental protection measures into their conventions is assessed.

Table 6.5: Summary of the Marine Environmental Protection Provisions described in Chapter 5 and To What Extent the three Institutions' Constitutions Fulfil Them

<i>Legal Requirement</i>	<i>IATTC</i>	<i>CPPS</i>	<i>SPRFMO</i>
24. Protection of the marine environment		 178	 179
25. Marine pollution prevention		 180	 181
26. Monitoring		 182	

Legal Requirement 24: Protection of the Marine Environment

SPRFMO has legal provisions on the protection of the marine environment, VMEs and habitats.¹⁸³ In contrast, IATTC does not have any provision on this. CPPS also has provisions on the protection of the marine environment, particularly from marine pollution, and the protection of VMEs and habitats. However, all of these provisions are only applicable to marine areas within the national jurisdiction of CPPS Contracting Parties (Table 6.5).¹⁸⁴

¹⁷⁸ CPPS Marine Environmental Protection Convention art 3.1, art 3.5 and art 4; CPPS Protocol for MPA Conservation and Management art II; CPPS Galapagos Agreement preamble.

¹⁷⁹ SPRFMO Convention art. 3.1a.ii, art 3.1a.vii, art 10.2c and art 20.1d.

¹⁸⁰ CPPS Marine Environmental Protection Convention art 3.1, art 3.5 and art 4. See also: Plan de Acción para la Protección del Medio Marino y Áreas Costeras del Pacífico Sudeste [Plan of Action for the Protection of the Marine Environment and Coastal Areas of the Southeast Pacific] (2013) ('CPPS Plan of Action'); Protocolo para la Protección del Pacífico Sudeste contra la Contaminación Proveniente de Fuentes Terrestres [Protocol for the Protection of Southeast Pacific against Pollution from Land-Based Sources], opened for signature 22 July 1983 (entered into force 23 September 1986) ('CPPS Protocol on Land-Based Sources of Pollution'); Protocolo para la Protección del Pacífico Sudeste contra la Contaminación Radiactiva [Protocol for the Protection of the Southeast Pacific against Radioactive Pollution], opened for signature 21 September 1989 (entered into force 24 January 1995) ('CPPS Protocol on Radioactive Pollution'); Acuerdo sobre la Cooperación Regional para el Combate contra la Contaminación del Pacífico Sudeste por Hidrocarburos y otras Sustancias Nocivas en Casos de Emergencia [Agreement on Regional Cooperation in Combating Pollution of the Southeast Pacific by Hydrocarbons or other Harmful Substances in Cases of Emergency], opened for signature 12 November 1981 (entered into force 7 February 1988) ('CPPS Agreement on Hydrocarbon Pollution'); Protocolo Complementario del Acuerdo sobre Cooperación Regional para el Combate contra la Contaminación del Pacífico Sudeste por Hidrocarburos y otras Sustancias Nocivas [Supplementary Protocol to the Agreement on Regional Cooperation in Combating Pollution of the Southeast Pacific by Hydrocarbons or other Harmful Substances], opened for signature 22 July 1983 (entered into force 20 May 1987) ('CPPS Protocol on Hydrocarbon Pollution').

¹⁸¹ SPRFMO Convention art 3.1a.x.

¹⁸² CPPS Marine Environmental Protection Convention art 7, art 8 and art 11. See also: CPPS Plan of Action.

¹⁸³ SPRFMO Convention art 3.1a.ii, art 3.1a.vii, art 10.2c and art 20.1d.

¹⁸⁴ CPPS Marine Environmental Protection Convention art 3.1, art 3.5 and art 4; CPPS Protocol for MPA Conservation and Management art II; CPPS Galapagos Agreement preamble.

Legal Requirement 25: Marine Pollution Prevention

Only SPRMO and CPPS have legal provisions on the prevention and reduction of marine pollution with CPPS' provisions being valid only within the national jurisdiction of its Contracting Parties.¹⁸⁵ SPRFMO's provision focuses on the prevention of marine pollution from fishing vessels while the CPPS provision focuses on the prevention of marine pollution from all anthropogenic sources (Table 6.5).

Legal Requirement 26: Monitoring

Only CPPS, with its broader environmental mandate, has legal provisions on the monitoring of marine pollution, prevention of the spread of marine pollution, the need to do environmental assessments prior to the conduct of activities, and enforcement measures (Table 6.5).¹⁸⁶

6.3.6 Discussion

Overall, and as shown in Table 6.6 below, the three organisations of the Southeast Pacific had partial or full provisions for most of the legal requirements, with no noticeable bias as to whether these are hard or soft law provisions. The only legal requirement that was not fulfilled by any of the three organisations was the one on the prevention of alien species introduction.

Table 6.6: Score Recapitulative Table for Tables 6.1 to 6.5¹⁸⁷

	IATTC			CPPS			SPRFMO		
General measures	0	3	0	0	1	2	0	0	3
Fisheries measures	1	6	3	0	8	2	0	1	9
Biodiversity measures	3	3	0	1	5	0	2	4	0
Scientific data	0	2	2	1	1	2	1	0	3
Marine environmental protection	3	0	0	0	2	1	1	1	1
TOTAL	7	14	5	2	17	7	4	7	16

¹⁸⁵ SPRFMO Convention art 3.1a.x; CPPS Marine Environmental Protection Convention art 3.1, art 3.5, art 4 and art 7.

¹⁸⁶ CPPS Marine Environmental Protection Convention art 7, art 8 and art 11.

¹⁸⁷ This table summarises the results yield in Tables 6.1 to 6.5 by showing the number of global legal provisions that the three RFOs have fully (green column) or partially (yellow column) translated into their conventions. The red column indicates the number of global legal measures that have not been translated into the three RFOs' conventions.

Unsurprisingly, most of the legal provisions regarding fisheries were partially to fully met whereas legal provisions for biodiversity were only partially met, if at all. Provisions on general measures, that is those outlined in the LOSC, and scientific data were also partially to fully met and the inclusion of provisions on environmental protection was poorly met. IATTC has no provisions on environmental protection whereas CPPS, which has a broader environmental mandate, has more provisions in its agreements.

SPRFMO was overall the organisation which most met the global legal requirements, which is unsurprising to some extent given that this is a newly established organisation incorporating modern conservation principles. Overall, CPPS scored better than IATTC but, as this organisation focuses on waters within national jurisdiction, most of its provisions for high seas areas would only be valid if the 2000 Galapagos Agreement had been in force.

Appendix H provides a comparative table summarising the integration of global legal measures aimed at States into IATTC, CPPS and SPRFMO's conventions.

6.4 Global Legal Provisions for the Conservation of Biodiversity aimed at Institutions

Amongst the global legal provisions that States must adopt and implement for the conservation of high seas biodiversity, certain legal provisions have to be fulfilled through global or regional institutions. The global legal measures aimed at institutions only include fisheries measures and measures on scientific data. None of the biodiversity or marine environmental protection measures needs to be implemented through institutions. This section assesses the extent to which the regional institutions of the Southeast Pacific have integrated the global legal measures aimed directly at institutions for the conservation of high seas living resources and the protection of the marine environment into their conventions using the categories established in Chapter 5.

For each measure category, a summary table will highlight the research's findings. The green dot denotes a match between the global legal measures and the institution's convention measures; the yellow dot indicates a partial match because the global legal requirements are only partially integrated within the regional institution's convention; finally, the red dot indicates that the required global legal measures are not included within the RFO's constitution. The summary table is followed by a detailed explanation for each global legal requirement as to why each coloured dot was selected.




6.4.1 General Legal Provisions under the LOSC

This section focuses on the only basic legal requirement outlined in Section 2 of Part VII of the LOSC that has to be implemented through institutions, namely the taking of non-discriminatory conservation measures for the conservation of high seas living resources. The extent to which the three RFOs have integrated this basic legal requirement into their conventions is assessed.

The legal requirements A (non-discriminatory conservation measures), C (fisheries data), F (data standards), G (target fish stock conservation measures), H (allowable catch and fishing effort) and I (monitoring and surveillance measures) in Sections 6.4.2 and 6.4.3 below are the same as legal requirements 3 (non-discriminatory conservation measures), 1 (scientific data), 23 (scientific criteria), 4 (conservation measures for target stocks) and 5 (conservation measures for associated, dependent and same ecosystem

species), 2 (allowable catch) and 12 (effective MCS) respectively in Sections 6.3.1, 6.3.2 and 6.3.4 of this chapter.










Table 6.7: Summary of the General Global Legal Provisions aimed at Institutions and To What Extent the three Institutions' Constitutions Fulfil Them

<i>Legal Requirement</i>	<i>IATTC</i>	<i>CPPS</i>	<i>SPRFMO</i>
A) Take non-discriminatory conservation measures for high seas living resources ¹⁸⁸	 189	 190	 191

6.4.2 Scientific Data

This section focuses on the global legal measures on scientific data that are aimed at institutions, as outlined in Section 5.5 of Chapter 5. In this section, the extent to which the three RFOs have integrated these global legal measures on scientific data into their conventions is evaluated.

Table 6.8: Summary of the Provisions on Scientific Data aimed at Institutions and To What Extent the three Institutions' Constitutions Fulfil Them

<i>Legal Requirement</i>	<i>IATTC</i>	<i>CPPS</i>	<i>SPRFMO</i>
B) Collect complete and accurate fisheries data, ¹⁹² including for stock assessments as well as for the impacts that fishing has on non-target species ¹⁹³	 194	 195	 196
C) Contribute and exchange fisheries data ¹⁹⁷	 198	 199	 200
D) Promote and conduct scientific research on straddling and migratory fish stocks ²⁰¹	 202	 203	 204

¹⁸⁸ LOSC art 119.

¹⁸⁹ IATTC *Antigua Convention* art IV, art V.1, art VII.1c, art VII.1f, art VII.1g, art VII.1m and art VII.1v.

¹⁹⁰ CPPS *Reglamento* art 33d; CPPS *Galapagos Agreement* art 2, art 5 and art 6.

¹⁹¹ SPRFMO *Convention* art 2, art 3, art 4.2b, art 8a, art 19, art 20.1a, art 20.1c, art 20.1d, art 20.5 and art 21; 22.

¹⁹² UNFSA art 5j, art 10d, art 10f; United Nations Food and Agriculture Organization, *Code of Conduct for Responsible Fisheries* (1995) ('*Code of Conduct*') art 7.4.4, art 8.1.3 and art 8.4.3.

¹⁹³ UNFSA art 10d.

¹⁹⁴ IATTC *Antigua Convention* art VII.1a, art VII.1d, art XIII.e, art XIII.g and art XVIII.2.

¹⁹⁵ CPPS *Estatuto* art 4h, art 4i and art 4l; CPPS *Reglamento* art 3; CPPS *Galapagos Agreement* art 7.e.

¹⁹⁶ SPRFMO *Convention* art 3.1a.iv and art 24.1d.

¹⁹⁷ LOSC art 119.2; UNFSA art 5j, art 10d and art 10f; *Code of Conduct* art 7.4.4, art 8.1.3 and art 8.4.3.

¹⁹⁸ IATTC *Antigua Convention* art XVIII.2, art XXIV.1 and art XXVI.2.

¹⁹⁹ CPPS *Reglamento* art 3.2; CPPS *Estatuto* art 4h, art 4i, art 4l and art 4m; CPPS *Galapagos Agreement* art 7.e, art 7.f and art 7.g.

²⁰⁰ SPRFMO *Convention* art 3.1a.iv and art 8e.







²⁰¹ UNFSA art 5k and art 10g.

²⁰² IATTC *Antigua Convention* art VII.1a.

²⁰³ CPPS *Estatuto* art 4h; CPPS *Galapagos Agreement* art 7g.

²⁰⁴ SPRFMO *Convention* art 8d.

Table 6.8 (continued)

<i>Legal Requirement</i>	<i>IATTC</i>	<i>CPPS</i>	<i>SPRFMO</i>
E) Develop appropriate technologies for research on straddling and migratory fish stocks ²⁰⁵		 ²⁰⁶	
F) Agree on standards for collection, reporting, verification and exchange of data ²⁰⁷	 ²⁰⁸		 ²⁰⁹

Legal Requirement B: Collect Complete and Accurate Fisheries Data, including for Stock Assessments as well as for the Impacts that Fishing has on Non-target Species

IATTC requires the undertaking of scientific research regarding targeted fish stocks and associated and dependent species as well as the effects of natural factors and human activities on them.²¹⁰ It furthermore requires stock assessments to be undertaken to determine whether fish stocks are fully fished and catch data to be provided (Table 6.8).²¹¹

SPRFMO requires the collection of complete and accurate fisheries data, including the impacts of fishing on marine ecosystems.²¹² CPPS encourages scientific research both on living resources, the environment and fisheries of the Southeast Pacific.²¹³ Furthermore, the 2000 Galapagos Agreement requires the collection of fisheries data on both targeted fish stocks and their associated and dependent species (Table 6.8).²¹⁴

Legal Requirement D: Promote and Conduct Scientific Research on Straddling and Migratory Fish Stocks

IATTC has a provision on the conduct of scientific research for straddling and migratory fish stocks.²¹⁵ SPRFMO also encourages the undertaking of scientific research.²¹⁶ However, given that its scope encompasses non-highly migratory species,

²⁰⁵ UNFSA art 5k and art 10g.

²⁰⁶ CPPS Galapagos Agreement art 7.g.

²⁰⁷ UNFSA art 10e.

²⁰⁸ IATTC Antigua Convention art VII.1b and art XIII.f.

²⁰⁹ SPRFMO Convention art 8c.

²¹⁰ IATTC Antigua Convention art VII.1a.

²¹¹ Ibid art VII.1d, art XIII.e, art XIII.g and art XVIII.2.

²¹² SPRFMO Convention art 3.1a.iv and art 24.1d.

²¹³ CPPS Estatuto art 4h, art 4i and art 4l; CPPS Reglamento art 3.

²¹⁴ CPPS Galapagos Agreement art 7.e.

²¹⁵ IATTC Antigua Convention art VII.1a.

²¹⁶ SPRFMO Convention art 8d.

the scientific research is directed at fishery resources under its convention's regulation as well as marine ecosystems. Likewise, CPPS' scientific research is aimed more broadly at marine living resources rather than straddling and migratory fish stocks (Table 6.8).²¹⁷










Legal Requirement E: Develop Appropriate Technologies for Research on Straddling and Migratory Fish Stocks

None of the three institutions have legal provisions on technology development for research on straddling and migratory fish stocks. Had CPPS' 2000 Galapagos Agreement been in force, there would have been a provision on the development of appropriate technologies for research on living marine resources (Table 6.8).²¹⁸

6.4.3 Fisheries Measures

This section focuses on the global legal fisheries measures aimed at institutions, as outlined in Section 5.6 of Chapter 5. In this section, the extent to which the three RFOs have integrated these global legal fisheries measures into their conventions is evaluated.

Table 6.9: Summary of the Fisheries Measures aimed at Institutions and To What Extent the three Institutions' Constitutions Fulfil Them

<i>Legal Requirement</i>	<i>IATTC</i>	<i>CPPS</i>	<i>SPRFMO</i>
G) Adopt conservation measures for target fish stocks, taking into account associated species ²¹⁹	 220	 221	 222
H) Allocation of an allowable catch and fishing effort ²²³	 224	 225	 226
I) Development of effective monitoring and surveillance measures ²²⁷	 228	 229	 230

²¹⁷ CPPS Galapagos Agreement art 7.g.

²¹⁸ Ibid art 7.g.

²¹⁹ LOSC art 119.1; UNFSA art 5a, art 5b, art 5e, art 10a, and art 10c; World Summit on Sustainable Development, *Johannesburg Plan of Implementation* (2002) ('JPOI') para 31a; United Nations General Assembly, *The Future We Want*, GA Res 66/288, 66th sess, Agenda Item 19, A/RES/66/288 (11 September 2012) ('*The Future We Want*') para 168; *United Nations Conference on Environment and Development*, 'Agenda 21, Chapter 17' (1992) ('*Agenda 21, Chapter 17*') para 17.46b; *Code of Conduct* art 6.2, art 6.4, art 7.1.1, art 7.2.1 and art 7.2.2.

²²⁰ IATTC Antigua Convention art VII.1c and art VII.1f.

²²¹ CPPS Organisation Convention art III.a and III.b; CPPS Galapagos Agreement art 4, art 5.1c, art 5.1f and art 6; CPPS Estatuto art 4a.

²²² SPRFMO Convention art 3.1a.ii, art 8a, art 20.1a, art 20.1c and art 22.
















²²³ LOSC art 119.1; UNFSA art 10b; *Code of Conduct* art 7.5.4.

²²⁴ IATTC Antigua Convention art VII.1c and art VII.1f.

²²⁵ CPPS Galapagos Agreement art 5.1f, art 6b and art 6c.

²²⁶ SPRFMO Convention art 8b, art 20.2c, art 20.3, art 20.4, art 21 and annex III.

Table 6.9 (continued)

<i>Legal Requirement</i>	<i>IATTC</i>	<i>CPPS</i>	<i>SPRFMO</i>
J) Establishment of boarding and inspection procedures ²³¹		 ²³²	 ²³³
K) Measures to reduce the number of seabirds caught as bycatch in the longline fisheries ²³⁴ (<i>soft law provision</i>)	 ²³⁵		
L) Adoption of a regional plan for the conservation of <i>Chondrichthyes</i> ²³⁶ (<i>soft law provision</i>)	 ²³⁷		
M) Adoption of measures to combat IUU fishing, including the development of unified port State measures ²³⁸ (<i>soft law provision</i>)	 ²³⁹	 ²⁴⁰	 ²⁴¹
N) Strengthening of RFOs for improved management of fishing capacity ²⁴² (<i>soft law provision</i>)	 ²⁴³	 ²⁴⁴	 ²⁴⁵

Legal Requirement J: Establishment of Boarding and Inspection Procedures

Both SPRFMO and CPPS have legal provisions on the establishment of boarding and inspection procedures.²⁴⁶ These provisions do not provide detailed measures but rather leave these to be negotiated at a later stage. IATTC, on the other hand, does not have any provisions on the establishment of boarding and inspection procedures (Table 6.9).

²²⁷ UNFSA art 51 and art 10h; Agenda 21, Chapter 17 para 17.46d; Code of Conduct art 6.10, art 7.7.3 and art 8.1.4.

²²⁸ IATTC Antigua Convention art VII.1i.

²²⁹ CPPS Galapagos Agreement art 8.

²³⁰ SPRFMO Convention art 8g, art 27.1, art 27.3 and art 28.

²³¹ UNFSA art 21.2.

²³² CPPS Galapagos Agreement art 8.1.

²³³ SPRFMO Convention art 27.1b and art 27.3.

²³⁴ United Nations Food and Agriculture Organization, 'International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries' (1999) ('IPOA-Seabirds') para 19.

²³⁵ IATTC Antigua Convention art VII.1n.

²³⁶ United Nations Food and Agriculture Organization, 'International Plan of Action for the Conservation and Management of Sharks' (1999) ('IPOA-Sharks') para 25.

²³⁷ IATTC Antigua Convention art VII.1n.

²³⁸ United Nations Food and Agriculture Organization, 'International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing' (2001) ('IPOA-IUU') para 62, para 63, para 64, para 68, para 69, para 80.1, para 80.2, para 80.3, para 80.5, para 80.7, para 80.8, para 80.9, para 80.10, para 80.13, para 80.14 and para 82.3.

²³⁹ IATTC Antigua Convention art VII.1n, art VII.1v, art XVIII.6, art XVIII.7, art XVIII.8, art XVIII.10, art XX.1 and art XXVI.3.

²⁴⁰ CPPS Galapagos Agreement art 7a, art 8.3, art 9 and art 10.

²⁴¹ SPRFMO Convention art 3.1a.ix, art 8.i, art 24.1c, art 25.1a, art 25.1b, art 25.1d, art 27.1d, art 27.1f and art 27.2.

²⁴² United Nations Food and Agriculture Organization, 'International Plan of Action for the Management of Fishing Capacity' (1999) ('IPOA-Capacity') para 8.

²⁴³ Convention updated in 2003; IATTC Antigua Convention art VI.1.

²⁴⁴ Statute and Rules updated in 2012.

²⁴⁵ Newly established organisation. Convention dates from 2009, corrected in 2010.

²⁴⁶ SPRFMO Convention art 27.1b and art 27.3; CPPS Galapagos Agreement art 8.1.

Legal Requirement K: Measures to Reduce the Number of Seabirds Caught as Bycatch in the Longline Fisheries

None of the three institutions has legal provisions on seabird bycatch reduction. However, IATTC has a provision on the promotion of the FAO IPOAs, which includes the *IPOA for Reducing Incidental Catch of Seabirds in Longline Fisheries* (IPOA-Seabirds) (Table 6.9).²⁴⁷

Legal Requirement L: Adoption of a Regional Plan for the Conservation of *Chondrichthyes*

None of the three institutions has legal provisions on *Chondrichthyes* conservation. However, IATTC has a provision on the promotion of the FAO IPOAs, which includes the *IPOA for Conservation and Management of Sharks* (IPOA-Sharks) (Table 6.9).²⁴⁸

Legal Requirement M: Adoption of Measures to Combat IUU Fishing, including the Development of Unified Port State Measures

In its Preamble, SPFRMO notes the need to effectively cooperate to eliminate IUU fishing and its Commission has to adopt measures to prevent, deter and eliminate IUU fishing.²⁴⁹ These measures include sanctions and penalties that have to be adopted to discourage illegal activities as well as trade-related measures and market-related measures to monitor transshipment, landings and trade.²⁵⁰ These market-related measures include catch documentation schemes and the establishment of an IUU vessel list.²⁵¹ It is flag States' duty to ensure that their vessels do not conduct unauthorised fishing and do not engage in activities that undermine the effectiveness of the Commission's measures (Table 6.9).²⁵²

Under CPPS, member States have to cooperate towards the establishment of efficient measures for the prevention of IUU fishing, which includes transshipment as well as port State measures and adequate sanctions.²⁵³ Contracting Parties also have to ensure that

²⁴⁷ *IATTC Antigua Convention* art VII.1n.

²⁴⁸ *Ibid* art VII.1n.

²⁴⁹ *SPFRMO Convention* art 8.i and art 24.1c.

²⁵⁰ *Ibid* art 3.1a.ix, art 25.1d, art 27.1d and art 27.2.

²⁵¹ *Ibid* art 27.1d and art 27.1f.

²⁵² *Ibid* art 25.1a and art 25.1b.

²⁵³ *CPPS Galapagos Agreement* art 8.3, art 9 and art 10.

vessels flying their flag do not undertake activities which would undermine measures adopted by CPPS (Table 6.9).²⁵⁴

IATTC does not have any explicit mention of IUU fishing in its Antigua Convention. The only legal provisions that indirectly apply to IUU fishing relate to the adoption of measures ‘to prevent, deter and eliminate activities that undermine the effectiveness of the conservation and management measures adopted by the Convention’, the duty of flag States to ensure that their vessels do not engage in activities that may undermine the effectiveness of IATTC measures and for Contracting Parties to notify IATTC of any other vessels undertaking activities that undermine the Commission’s measures.²⁵⁵ This includes the carrying out of investigation, the application of sanctions as well as taking other actions to deter vessels from undertaking these activities.²⁵⁶ The IATTC has a provision on the encouragement of the application of the FAO IPOAs, which would include the *IPOA-IUU* (Table 6.9).²⁵⁷

Legal Requirement N: Strengthening of RFOs for Improved Management of Fishing Capacity

The strengthening of RFOs as promoted in the FAO *International Plan of Action for the Management of Fishing Capacity* (IPOA-Capacity) should aim at improving the management of fishing capacity at both the regional and global levels. Both IATTC and CPPS have updated their conventions, in 2003 and 2012, respectively. SPRFMO is a newly-established organisation and its Preamble notes the need for fisheries organisations to undertake performance reviews. The IATTC is the only one of the three organisations that has a provision on the obligation of Commission members to strengthen the IATTC, although this is not specifically directed at the improved management of fishing capacity (Table 6.9).²⁵⁸

6.4.4 Discussion

Overall, and as shown in Table 6.10 below, the three organisations of the Southeast Pacific have partially to fully met most of the legal requirements that are intended for

²⁵⁴ Ibid art 7a.

²⁵⁵ IATTC *Antigua Convention* art VII.1v, art XVIII.6 and art XX.1.

²⁵⁶ Ibid art XVIII.7, art XVIII.8, art XVIII.10 and art XXVI.3.

²⁵⁷ Ibid art VII.1n.

²⁵⁸ Ibid art VI.1.

institutional application. In this case, most of the legal requirements that have been mainly fulfilled stem from hard law whereas soft law prescriptions were poorly fulfilled, if at all. Here again, CPPS scores overall better than IATTC, although its high seas provisions are not in force. SPRFMO has the highest score again, as would be expected from a newly established organisation.

Appendix I provides a comparative table summarising the integration of global legal measures aimed at institutions into IATTC, CPPS and SPRFMO's conventions.

Table 6.10: Score Recapitulative Table for Tables 6.7 to 6.9²⁵⁹

	IATTC			CPPS			SPRFMO		
General measures	0	1	0	0	1	0	0	0	1
Scientific data	1	1	3	1	3	1	1	1	3
Fisheries measures	1	5	1	2	0	5	2	0	5
TOTAL	2	7	4	3	4	6	3	1	9

²⁵⁹ This table summarises the results yield in Tables 6.7 to 6.9 by showing the number of global legal provisions aimed at institutions that the three RFOs have fully (green column) or partially (yellow column) translated into their conventions. The red column indicates the number of global legal measures that have not been translated into the three RFOs' conventions.

6.5 Implementation of Global Legal Provisions for the Conservation of Biodiversity

This section assesses the extent to which the regional institutions of the Southeast Pacific have implemented the global legal measures for the conservation of high seas living resources and the protection of the marine environment using the categories established in Chapter 5. It is to be noted that the legal measures referred to here are the globally-agreed ones as described in Chapter 5, both the ones directed at States and the ones directed at institutions, rather than the legal measures outlined in the regional institutions' constitutions.

For each measure category, a summary table will highlight the research's findings. The green dot denotes a match between the global legal measures and their implementation by the regional institution; the yellow dot indicates a partial match because the global legal requirements are only partially implemented by the RFO; finally, the red dot indicates that the required global legal measures are not being implemented by the regional institutions. The summary table is followed by a detailed explanation for each global legal requirement as to why each coloured dot was selected.

The requirement of compatibility between measures for marine areas within and beyond national jurisdiction (legal requirement 6) was not assessed and thus was not included in the analysis below. Section 6.5.1 focuses on the implementation of global legal measures by IATTC while Section 6.5.2 focuses on the implementation of the globally-agreed legal measures by SPRFMO. As mentioned at the beginning of this chapter, CPPS will not be assessed in this section as its constitution focuses on marine areas within the national jurisdiction of its Contracting Parties.

6.5.1 Inter-American Tropical Tuna Commission (IATTC)




This section assesses the extent to which IATTC has implemented the global legal provisions and measures for the conservation of high seas living resources and the protection of the marine environment. For this analysis, the global legal provisions and measures are categorised according to the categories outlined in Chapter 5, namely the general measures; fisheries measures; biodiversity measures; measures on scientific data; and marine environmental protection measures. Appendices J and K provide a comparative table summarising the integration of global legal measures aimed at States

and at institutions, respectively, into IATTC's Antigua Convention and their implementation by IATTC. A note on the compliance of States in implementing IATTC' legal measures concludes this section.

6.5.1.1 General Legal Provisions under the LOSC

This section examines the implementation of the three basic legal requirements outlined in the LOSC in Section 2 of its Part VII, namely the contribution and exchange of scientific data, the determination of an allowable catch, and the taking of non-discriminatory conservation measures for the conservation of high seas living resources (Table 6.11).²⁶⁰

Table 6.11: Implementation of General Measures by IATTC²⁶¹

<i>Legal Requirement</i>	<i>IATTC</i>
1. Contribute and exchange scientific data	
2. Determine allowable catch	
3. Take non-discriminatory conservation measures	

According to IATTC's meeting reports, all three legal requirements are implemented by the Commission. States are required to collect data and to forward it to the Commission in a timely manner.²⁶² They also have to adopt conservation measures, which are mainly focused on targeted fish stocks of yellowfin, bigeye, bluefin and albacore and skipjack tuna as well as bycatch species, including sharks, sea turtles and seabirds.²⁶³ Catch and

²⁶⁰ Although the protection and preservation of the marine environment is also a basic legal requirement outlined in the LOSC in its Part XII, it will be treated in a separate section throughout this chapter.

²⁶¹ These legal requirements are described in detail in Section 5.4 and in Figure 5.1 of Chapter 5.

²⁶² IATTC, 'Resolution on Data Provision' (C-03-05, 2003) requires all pertinent catch and effort data to be provided annually to the Commission. IATTC, 'Resolution on Catch Reporting' (C-04-10, 2004) requires the Commission to circulate to its member States all catch information in a yearly report.

²⁶³ IATTC, 'Amendment to Resolution C-11-01 on Tuna Conservation' (C-12-01, 2012) provides temporal and spatial closure areas for yellowfin, bigeye and skipjack tuna fisheries. IATTC, 'Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean during 2014-2016' (C-13-01, 2013) also provides spatial and temporal conservation measures for yellowfin, bigeye and skipjack tuna. IATTC, 'Conservation and Management Measures for Bluefin Tuna in the Eastern Pacific' (C-12-09, 2012) and IATTC, 'Measures for the Conservation and Management of Bluefin Tuna in the Eastern Pacific Ocean (C-13-02, 2013) impose limitations on commercial catches of bluefin tuna for the years 2012 to 2014.

IATTC, 'Resolution on Northern Albacore Tuna' (C-05-02, 2005) imposes limitations on the fishing effort of North Pacific albacore tuna; IATTC, 'Consolidated Resolution on Bycatch' (C-04-05 Rev 2, Revised, 2004) requests States to release non-target species, to develop measures/techniques to release sea turtles, billfish, sharks and rays and to find ways to modify the design of FADs to eliminate sea turtle entanglement.







IATTC, 'Resolution on the Conservation of Oceanic Whitetip Sharks Caught in Association with Fisheries in the Antigua Convention Area' (C-11-10, 2011) requires States to prohibit retaining onboard, transshipping, landing, storing, selling or offering for sale oceanic whitetip sharks. IATTC, 'Resolution on the Conservation of Sharks Caught in Association with Fisheries in the Eastern Pacific Ocean' (C-05-03, 2005) encourages States to establish and implement a national plan of action for the conservation of sharks. It also requires States to fully utilise shark catches, to have no more than five per cent of the weight of sharks as fins onboard. It furthermore encourages the release of live sharks and requests the prohibition to board, transship, land or trade any fins harvested in contravention of this resolution.

effort limitations are in place and are revised regularly through the Permanent Working Group on Fleet Capacity.²⁶⁴ This Working Group was established in 1998 and met for the first time in September of that year (Table 6.11).²⁶⁵ It has since met nearly every year, the latest meeting was held in October 2014. This Working Group continues to review capacity requests, claims and disputes of IATTC member States and makes fleet and effort capacity-related recommendations to the IATTC.²⁶⁶

6.5.1.2 Fisheries Measures

This section focuses on the implementation by IATTC of the global legal fisheries measures outlined in Section 5.6 of Chapter 5. These fisheries measures are presented in categories, as depicted in Figure 5.3 of Chapter 5.

Table 6.12: Implementation of Fisheries Measures by IATTC²⁶⁷

<i>Legal Requirement</i>	<i>IATTC</i>
4. Conservation measures for target stocks	
5. Conservation measures for associated, dependent and same ecosystem species	
7. Protect critical fisheries habitats and vulnerable marine ecosystems	
8. Pollution, waste, discards and bycatch minimisation	
9. Prevention and elimination of overfishing and excess fishing capacity	
10. Application of the precautionary approach	

IATTC, 'Resolution to Mitigate the Impact of Tuna Fishing Vessels on Sea Turtles' (C-07-03, 2007) requests States to implement FAO Guidelines to reduce bycatch, injury and mortality of sea turtles. States are also to implement observer programmes and apply measures/techniques to avoid turtle bycatch and to release them. IATTC, 'Resolution to Mitigate the Impact on Seabirds of Fishing for Species Covered by the IATTC' (C-11-02, 2011) requests States to report to the IATTC on their implementation of the *IPOA-Seabirds*. Longline vessels of more than 20 metres in length have to use at least two mitigation measures when fishing in the designated area. Other vessels are encouraged to use at least one measure. States are also encouraged to establish national programmes to place observers on fishing vessels and to adopt measures to release seabirds alive.









²⁶⁴ The IATTC has adopted a couple of resolutions on fleet capacity: IATTC, 'Resolution on the Capacity of the Tuna Fleet Operating in the Eastern Pacific Ocean' (C-02-03, Revised, 2002) provides a basis for the fleet capacity in the EPO. It also requests the establishment of a 'Plan for Regional Management of Fishing Capacity', which was adopted at IATTC, '73rd IATTC Meeting' (June 2005). Previous resolutions on fleet capacity include IATTC, 'Resolution on the Capacity of the Tuna Fleet Operating in the Eastern Pacific Ocean' (C-00-10, 2000), IATTC, 'Resolution on Fleet Capacity' (C-00-01, 2000) and IATTC, 'Resolution on Fleet Capacity' (C-98-11, 1998).

²⁶⁵ IATTC, 'Resolution on the Establishment of a Working Group on Fleet Capacity in the Eastern Pacific Ocean' (C-98-06, 1998).

²⁶⁶ <https://www.iattc.org/IATTC-WGsENG.htm> (accessed: 11 June 2015).

²⁶⁷ These legal requirements are described in detail in Sections 5.6 of Chapter 5. Legal requirements 4 to 19 denote all the relevant legal provisions under international law. Legal requirements J to N are those that are directly aimed at institutions. Legal requirement no. 6, on measure compatibility between marine areas within and beyond national jurisdiction, was not considered in this section. However, it is to be noted that IATTC, 'Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean during 2014-2016' (C-13-01, 2013) art 18 promotes the compatibility of conservation and management measures adopted by IATTC and the Western and Central Pacific Fisheries Commission (WCPFC), particularly in the overlapping area of jurisdiction.

Table 6.12 (continued)

<i>Legal Requirement</i>	<i>IATTC</i>
11. Promotion of the effectiveness of regional and global conservation and management measures	
12. Effective monitoring, control and surveillance	
13. Enforcement of regional conservation and management measures	
J) Establishment of boarding and inspection procedures ²⁶⁸	
K) Measures to reduce the number of seabirds caught as bycatch in the longline fisheries ²⁶⁹ (<i>soft law provision</i>)	
L) Adoption of a regional plan for the conservation of <i>Chondrichthyes</i> ²⁷⁰ (<i>soft law provision</i>)	
M) Adoption of measures to combat IUU fishing, including the development of unified port State measures ²⁷¹ (<i>soft law provision</i>)	
N) Strengthening of RFOs for improved management of fishing capacity ²⁷² (<i>soft law provision</i>)	

Legal Requirements 4 and 5: Conservation Measures for Target Stocks and Associated, Dependent and Same Ecosystem Species

IATTC has implemented conservation measures for targeted fish stocks as per legal requirement 4 and therefore warrants a green dot. These measures include time and spatial closures of the fishery and catch and effort limitations.²⁷³ The focus of these conservation measures is on the maximum sustainable yield (MSY).²⁷⁴ In contrast, only some conservation measures for associated, dependent and same ecosystem species (legal requirement 5) are in place, mainly for seabirds, sharks and sea turtles.²⁷⁵ These

²⁶⁸ UNFSA art 21.2.

²⁶⁹ IPOA-Seabirds para 19.

²⁷⁰ IPOA-Sharks para 25.

²⁷¹ IPOA-IUU para 62, para 63, para 64, para 68, para 69, para 80.1, para 80.2, para 80.3, para 80.5, para 80.7, para 80.8, para 80.9, para 80.10, para 80.13, para 80.14 and para 82.3.

²⁷² IPOA-Capacity para 8.

²⁷³ IATTC, 'Amendment to Resolution C-11-01 on Tuna Conservation' (C-12-01, 2012) provides temporal and spatial closure areas for yellowfin, bigeye and skipjack tuna fisheries. IATTC, 'Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean during 2014-2016' (C-13-01, 2013) also provides spatial and temporal conservation measures for yellowfin, bigeye and skipjack tuna. IATTC, 'Conservation and Management Measures for Bluefin Tuna in the Eastern Pacific' (C-12-09, 2012) and IATTC, 'Measures for the Conservation and Management of Bluefin Tuna in the Eastern Pacific Ocean (C-13-02, 2013) impose limitations on commercial catches of bluefin tuna for the years 2012 to 2014. IATTC, 'Resolution on Northern Albacore Tuna' (C-05-02, 2005) imposes limitations on the fishing effort of North Pacific albacore tuna. As mentioned above, there are no IATTC resolutions on catch and effort limitations.

²⁷⁴ IATTC Antigua Convention art VII.1.c.

²⁷⁵ IATTC, 'Consolidated Resolution on Bycatch' (C-04-05 Rev 2, Revised, 2004) requests States to release non-target species, to develop measures/techniques to release sea turtles, billfish, sharks and rays and to find ways to modify the design of FADs to

measures do not take into account other species or ecosystems, hence the yellow dot attribution (Table 6.12).

Legal Requirement 7: Protect Critical Fisheries Habitats and Vulnerable Marine Ecosystems

Although there are time and spatial closures of the fishery in place which may indirectly help to protect critical fishery habitats and VMEs, there are no specific measures in place to protect the latter two features.²⁷⁶ There is also no requirement to undertake EIAs. All of this therefore justifies the attribution of a red dot (Table 6.12).

Legal Requirement 8: Pollution, Waste, Discards and Bycatch Minimisation

IATTC has implemented a few measures to tackle pollution, waste, discards and bycatch minimisation but, as shown below, these are incomplete compared to the global legal requirements and therefore warrant the attribution of a yellow dot. In the Commission's annual meeting reports and resolutions, there is no mention of discard or mesh/fish size limitations or of prohibition on using large-scale pelagic driftnets for fishing. However, there are temporal and area-based fisheries closures in place, the monitoring of the effects of fish aggregating devices (FADs) on fish stocks and bycatch and measures in place to minimise impacts on affected species, as well as the tackling of IUU fishing through the establishment of an IUU vessel list and prohibitions on allowing these IUU vessels to tranship and land their catches in one of the IATTC member States.²⁷⁷ The IATTC has also established a Bycatch Working Group, which

eliminate sea turtle entanglement. IATTC, 'Resolution on the Conservation of Oceanic Whitetip Sharks Caught in Association with Fisheries in the Antigua Convention Area' (C-11-10, 2011) requires States to prohibit retaining onboard, transshipping, landing, storing, selling or offering for sale oceanic whitetip sharks. IATTC, 'Resolution on the Conservation of Sharks Caught in Association with Fisheries in the Eastern Pacific Ocean' (C-05-03, 2005) encourages States to establish and implement a national plan of action for the conservation of sharks. It also requires States to fully utilise shark catches, to have no more than five per cent of the weight of sharks as fins onboard. It furthermore encourages the release of live sharks and requests the prohibition to board, tranship, land or trade any fins harvested in contravention of this resolution. IATTC, 'Resolution to Mitigate the Impact of Tuna Fishing Vessels on Sea Turtles' (C-07-03, 2007) requests States to implement FAO Guidelines to reduce bycatch, injury and mortality of sea turtles. States are also to implement observer programmes and apply measures/techniques to avoid turtle bycatch and to release them. IATTC, 'Resolution to Mitigate the Impact on Seabirds of Fishing for Species Covered by the IATTC' (C-11-02, 2011) requests States to report to the IATTC on their implementation of the *IPOA-Seabirds*. Longline vessels of more than 20 metres in length have to use at least two mitigation measures when fishing in the designated area. Other vessels are encouraged to use at least one measure. States are also encouraged to establish national programmes to place observers on fishing vessels and to adopt measures to release seabirds alive.

²⁷⁶ IATTC, 'Amendment to Resolution C-11-01 on Tuna Conservation' (C-12-01, 2012) provides temporal and spatial closure areas for yellowfin, bigeye and skipjack tuna fisheries. IATTC, 'Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean during 2014-2016' (C-13-01, 2013) also provides spatial and temporal conservation measures for yellowfin, bigeye and skipjack tuna.

²⁷⁷ IATTC, 'Amendment to Resolution C-11-01 on Tuna Conservation' (C-12-01, 2012) provides temporal and spatial closure areas for yellowfin, bigeye and skipjack tuna fisheries. IATTC, 'Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean during 2014-2016' (C-13-01, 2013) also provides spatial and temporal conservation measures for yellowfin, bigeye and skipjack tuna. IATTC, 'Collection and Analyses of Data on Fish-Aggregating Devices' (C-13-04, 2013) requests States to design and deploy FADs so that they reduce entanglement of sharks, marine turtles, and other species. It also prohibits States from setting a

met for the first time in July 1998 (Table 6.12). Since its establishment, this Working Group has met every two years until 2006 and last met in 2007. This Working Group focused on the study of bycatches and on recommending mitigation measures for bycatch reduction to the IATTC.²⁷⁸

Legal Requirement 9: Prevention and Elimination of Overfishing and Excess Fishing Capacity

IATTC has capacity limitations and conservation measures for targeted fish stocks in place to avoid overfishing, including temporal and spatial closures as well as catch and effort limitations.²⁷⁹ There is no management plan in place but there is a monitoring of individual target species to see where they stand in comparison with the MSY.²⁸⁰ A yellow dot is therefore attributed to this category (Table 6.12).

Legal Requirement 10: Application of the Precautionary Approach

IATTC does monitor target fish stocks, with stock-specific reference points based on the MSY, but does not necessarily monitor non-target species. There are data collection and research programmes in place but there is not much information on non-target species and marine environmental protection.²⁸¹ There is nothing on the protection of

purse seine on a school of tuna associated with a live shark whale. All data related to FADs need to be collected and submitted to the Commission. See also other relevant resolutions on bycatch mitigation mentioned above.

An IUU vessel list was established through IATTC, 'Resolution to Establish a List of Vessels Presumed to Have Carried Out Illegal, Unreported and Unregulated Fishing Activities in the Eastern Pacific Ocean' (C-05-07, 2005). This Resolution, which replaces IATTC, 'Resolution to Establish a List of Vessels Presumed to Have Carried Out Illegal, Unreported and Unregulated Fishing Activities in the Eastern Pacific Ocean' (C-04-04, 2004), also requests States to take all necessary measures to combat IUU: no transshipment; forbid IUU vessels to land or tranship in ports; prohibit chartering, flag granting, commercial transactions, imports, landings and transshipments; and collect and exchange data with other States. The 2012 IATTC, 'Amendment to Resolution C-11-09 on Establishing a Program for Transshipments by Large-Scale Fishing Vessels' (C-12-07, 2012) dictates that no transshipment of tuna and tuna-like species and sharks caught by large-scale tuna longline fishing vessels (LSTLFVs) shall be allowed. The IATTC is to establish a record of vessels authorised to receive such transshipment – known as the IATTC Record of Carrier Vessels. Also, the 1999 IATTC, 'Resolution on Fish-Aggregating Devices' (C-99-07, 1999) recommends States to prohibit the transshipment of tuna by purse-seine vessels and prohibit the use of tender vessels operating in support of vessels fishing on FADs in the Eastern Pacific Ocean (EPO).

²⁷⁸ <https://www.iattc.org/IATTC-WGsENG.htm> (accessed: 11 June 2015).

²⁷⁹ See relevant resolutions on capacity limitations and conservation measures mentioned above.

²⁸⁰ The research component of IATTC is divided into four programmes, one of which is the 'Stock Assessment' programme. One of the main responsibilities of this programme is to 'determine whether tuna stocks in the eastern Pacific Ocean are fully fished or overfished' (<https://www.iattc.org/ResearchENG.htm>, accessed: 13 January 2015). In this respect, IATTC founded, together with Scripps Institution of Oceanography and the US National Marine Fisheries Service, the *Center for the Advancement of Population Assessment Methodology* (see: <http://www.capamresearch.org/>, accessed: 13 January 2015).

²⁸¹ IATTC has four research programmes: Stock Assessment, Biology and Ecosystem, Data Collection and Database and Bycatch and International Dolphin Conservation Program (<https://www.iattc.org/ResearchENG.htm>, accessed: 13 January 2015). Through 2012 Recommendation IATTC, 'Best Available Science' (C-12-10, 2012), the IATTC agrees to take measures to improve data collection, research and the training of scientists. It also promotes to enhance the participation of scientific staff in other RFMO meetings. IATTC, 'Collection and Analyses of Data on Fish-Aggregating Devices' (C-13-04, 2013) requires States to collect data on FADs in the Convention Area. Between 2004 and 2007, IATTC ran a 'Three-Year Program to Mitigate the Impact of Tuna Fishing on Sea Turtles' (IATTC, 'Resolution on a Three-Year Program to Mitigate the Impact on Tuna Fishing on Sea Turtles' (C-04-07, 2004), which encouraged States to collect data on fishery interactions with sea turtles (both as direct or indirect catches), particularly between small-scale artisanal fisheries and sea turtle bycatch in coastal areas. It also encouraged States to review the effectiveness of mitigation measures and improve techniques to reduce sea turtle bycatch. States should also distribute information to and organise seminars for fishermen to improve their knowledge and capacity.

special habitats. For these reasons, a yellow dot is attributed to this legal requirement (Table 6.12).

Legal Requirement 11: Promotion of the Effectiveness of Regional and Global Conservation and Management Measures

IATTC has in place a list of vessels authorised to fish in the IATTC Convention Area as well as an IUU vessel list.²⁸² Member States of IATTC must not allow vessels on the IUU vessel list to land or tranship catches in their ports.²⁸³ However, there are no port State measures in place and no requirement for the marking of fishing gear and vessels, hence the attribution of a yellow dot (Table 6.12).

Legal Requirement 12: Effective Monitoring, Control and Surveillance

Apart for transshipment, there is no regional observer programme in place but there are requirements for observers to be on board longline vessels and approximately five per cent observer coverage is recommended.²⁸⁴ There is also a requirement for purse-seine vessels with a capacity greater than 363 metric tons to have observers on-board; at least half of these observers should be IATTC observers.²⁸⁵ Vessels over 24 metres in length that are fishing for tuna or tuna-like species in the Eastern Pacific Ocean (EPO) are required to use a VMS.²⁸⁶ This size constraint means that this requirement does not apply to all vessels fishing in the EPO. There are furthermore no boarding and inspection measures in place, although States have to report IUU activities to the Commission.²⁸⁷ Data on fisheries and vessels are to be collected.²⁸⁸ For these reasons, a yellow dot is attributed to this legal requirement (Table 6.12).

²⁸² A regional vessel register was established at IATTC's 66th meeting in 2000 (IATTC, 'Resolution on a Regional Vessel Register' (C-00-06, 2000)). This Resolution was amended and replaced by IATTC, 'Resolution (Amended) on a Regional Vessel Register' (C-11-06, 2011) and by IATTC, 'Resolution (Amended) on a Regional Vessel Register' (C-14-01, 2014). In 2003, IATTC, 'Resolution on the Establishment of a List of Longline Fishing Vessels Over 24 Meters (LSTLFVs) Authorized to Operate in the Eastern Pacific Ocean' (C-03-07, 2003) was adopted, which was amended and replaced by IATTC, 'Resolution (Amended) on the Establishment of a List of Longline Fishing Vessels over 24 Meters (LSTLFVs) Authorized to Operate in the Eastern Pacific Ocean' (C-11-05, 2011).

²⁸³ The IUU vessel list was established in 2005 through IATTC, 'Resolution to Establish a List of Vessels Presumed to Have Carried Out Illegal, Unreported and Unregulated Fishing Activities in the Eastern Pacific Ocean' (C-05-07, 2005). This Resolution, which replaces IATTC, 'Resolution to Establish a List of Vessels Presumed to Have Carried Out Illegal, Unreported and Unregulated Fishing Activities in the Eastern Pacific Ocean' (C-04-04, 2004), also requests States to take all necessary measures to combat IUU: no transshipment; forbid IUU vessels to land or tranship in ports; prohibit chartering, flag granting, commercial transactions, imports, landings and transshipments; and collect and exchange data with other States.

²⁸⁴ IATTC, 'Resolution on Scientific Observers for Longline Vessels' (C-11-08, 2011) requests that, from 2013 on, at least five per cent of the fishing effort by longline fishing vessels of less than 20 metres in length carry a scientific observer on board.

²⁸⁵ IATTC, 'Resolution on the International Dolphin Conservation Program' (C-09-04, 2009).

²⁸⁶ A VMS was established in 2004 by IATTC, 'Resolution on the Establishment of a Vessel Monitoring System (VMS)' (C-04-06, 2004) and States are required to equip their vessels from 2005 on. This Resolution was amended and replaced in 2014 by IATTC, 'Resolution (Amended) on the Establishment of a Vessel Monitoring System (VMS)' (C-14-02, 2014).

²⁸⁷ IATTC, 'Resolution to Establish a List of Vessels Presumed to Have Carried Out Illegal, Unreported and Unregulated Fishing Activities in the Eastern Pacific Ocean' (C-05-07, 2005) art 2 requests States to provide the IATTC with a list of vessels which have presumably been carrying out IUU fishing activities in the Convention Area together with evidence of such presumption.

Legal Requirement 13: Enforcement of Regional Conservation and Management Measures

There is no clear mention of enforcement in IATTC documents. Member States just have to prohibit the landing and transshipment by IUU vessels in their ports.²⁸⁹ There are no measures in place for catch verification or sanctions. There is a requirement for the establishment of a State-based observer programme and a regional observer programme for transshipment is in place.²⁹⁰ A yellow dot is therefore attributed to this legal requirement (Table 6.12).

Legal Requirement J: Establishment of Boarding and Inspection Procedures

There are no boarding and inspection procedures in place, hence the attribution of a red dot (Table 6.12).

Legal Requirement K: Measures to Reduce the Number of Seabirds Caught as Bycatch in the Longline Fisheries

There are conservation measures in place for the regulation of longline fisheries with regard to seabird mortality, hence the attribution of a green dot (Table 6.12).²⁹¹

²⁸⁸ IATTC, 'Resolution on Data Provision' (C-03-05, 2003) requires all pertinent catch and effort data to be provided annually to the Commission.

²⁸⁹ IATTC, 'Resolution to Establish a List of Vessels Presumed to Have Carried Out Illegal, Unreported and Unregulated Fishing Activities in the Eastern Pacific Ocean' (C-05-07, 2005), as mentioned above, requests States to take all necessary measures to combat IUU: no transshipment; forbid IUU vessels to land or tranship in ports; prohibit chartering, flag granting, commercial transactions, imports, landings and transshipments.

²⁹⁰ IATTC, 'Resolution on Scientific Observers for Longline Vessels' (C-11-08, 2011) requests that, from 2013 on, at least five per cent of the fishing effort by longline fishing vessels of less than 20 metres in length carry a scientific observer on board. IATTC, 'Resolution on Establishing a Program for Transshipments by Large-Scale Fishing Vessels' (C-06-04, 2006) art 4 established a programme to monitor at-sea transshipments of large-scale tuna longline fishing vessels (LSTLFVs). This resolution was amended and replaced in 2008 by IATTC, 'Resolution on Establishing a Program for Transshipments by Large-Scale Fishing Vessels' (C-08-02, 2008), in 2011 by Resolution IATTC, 'Resolution (Amended) on Establishing a Program for Transshipments by Large-Scale Fishing Vessels' (C-11-09, 2011) and in 2012 by IATTC, 'Amendment to Resolution C-11-09 on Establishing a Program for Transshipments by Large-Scale Fishing Vessels' (C-12-07, 2012). IATTC, 'Implementation Procedures for the Observer Program for At-Sea Transshipments by Large-Scale Tuna Longline' (C-08-03, 2008) established an informal Ad Hoc Working Group to look into the implementation of such a programme.

²⁹¹ IATTC, 'Resolution to Mitigate the Impact on Seabirds of Fishing for Species Covered by the IATTC' (C-11-02, 2011) requests States to report to the IATTC on their implementation of the *IPOA-Seabirds*. Longline vessels of more than 20 metres in length have to use at least two mitigation measures when fishing in the designated area. Other vessels are encouraged to use at least one measure. States are also encouraged to establish national programmes to place observers on fishing vessels and to adopt measures to release seabirds alive. Prior to this resolution, IATTC had adopted in 2010 IATTC, 'Recommendation to Mitigate the Impact on Seabirds of Fishing for Species Covered by the IATTC' (C-10-02, 2010) and in 2005 IATTC, 'Resolution on Incidental Mortality of Seabirds' (C-05-01, 2005).

Legal Requirement L: Adoption of a Regional Plan for the Conservation of *Chondrichthyes*

There is no regional plan for the conservation of *Chondrichthyes* in place but IATTC encourages States to establish and implement a national plan of action for the conservation of sharks.²⁹² There are also measures in place for the release and avoidance of sharks and rays but nothing on the other *Chondrichthyes* species.²⁹³ For these reasons, this legal requirement gets a yellow dot (Table 6.12).

Legal Requirement M: Adoption of Measures to Combat IUU fishing, including the Development of Unified Port State Measures

Apart from the IUU vessel list and the need for States to prohibit the landing and transshipping in their ports of catches from IUU vessels, there are no measures outlined.²⁹⁴ There are also no port State measures as well as no investigation or sanction measures in place, hence the attribution of a yellow dot (Table 6.12).

Legal Requirement N: Strengthening of RFOs for Improved Management of Fishing Capacity

The 1949 IATTC Convention was updated by the Antigua Convention, which was adopted in 2003 and entered into force on 27 August 2010.²⁹⁵ To date, no performance review of the Commission has been undertaken, hence the attribution of a yellow dot. The undertaking of a performance review, which was agreed at the first meeting of the tuna RFMOs, has been debated since June 2007 at the IATTC meetings (Table 6.12).²⁹⁶

²⁹² IATTC, 'Resolution on the Conservation of Sharks Caught in Association with Fisheries in the Eastern Pacific Ocean' (C-05-03, 2005) encourages States to establish and implement a national plan of action for the conservation of sharks.

²⁹³ IATTC, 'Consolidated Resolution on Bycatch' (C-04-05 Rev 2, Revised, 2004) requests States to release non-target species and to develop measures/techniques to notably release sharks and rays. IATTC, 'Resolution on the Conservation of Oceanic Whitetip Sharks Caught in Association with Fisheries in the Antigua Convention Area' (C-11-10, 2011) requires States to prohibit retaining onboard, transshipping, landing, storing, selling or offering for sale oceanic whitetip sharks. IATTC, 'Resolution on the Conservation of Sharks Caught in Association with Fisheries in the Eastern Pacific Ocean' (C-05-03, 2005) furthermore also requires States to fully utilise shark catches, to have no more than five per cent of the weight of sharks as fins onboard. It furthermore encourages the release of live sharks and requests the prohibition to board, transship, land or trade any fins harvested in contravention of this resolution.

²⁹⁴ IATTC, 'Resolution to Establish a List of Vessels Presumed to Have Carried Out Illegal, Unreported and Unregulated Fishing Activities in the Eastern Pacific Ocean' (C-05-07, 2005), as mentioned above, established an IUU vessel list and requests States to take all necessary measures to combat IUU: no transshipment; forbid IUU vessels to land or transship in ports; prohibit chartering, flag granting, commercial transactions, imports, landings and transshipments.

²⁹⁵ IATTC, 'Resolution on the Adoption of the Convention for the Strengthening of the Inter-American Tropical Tuna Commission Established by the 1949 Convention between the United States of America and the Republic of Costa Rica – Antigua Convention' (C-03-02, 2003).

²⁹⁶ IATTC, '75th IATTC meeting' (June 2007). The five tuna RFMOs (IATTC, the International Commission for the Conservation of Atlantic Tunas (ICCAT), the Indian Ocean Tuna Commission (IOTC), WCPFC and CCSBT) have agreed that such a performance review, aiming at improving tuna RFMOs' effectiveness and efficiency in fulfilling their mandates, should be conducted as soon as possible with a common methodology and set of criteria. It was furthermore agreed that follow-up performance reviews should be undertaken every three to five years. See: 'Attachment on RFMO Performance Review' (Report of the Joint Meeting of Tuna RFMOs Appendix 14 TunaRFMOs2007/16, 22-26 January 2007).

6.5.1.3 Biodiversity Measures

This section evaluates the extent to which IATTC has implemented the global legal biodiversity measures outlined in Section 5.7 of Chapter 5. These biodiversity measures are presented in categories, as depicted in Figure 5.7 of Chapter 5.

Table 6.13: Implementation of Biodiversity Measures by IATTC²⁹⁷

<i>Legal Requirement</i>	<i>IATTC</i>
14. Area-based management	●
15. Protection of endangered and threatened species	●
16. Adoption of measures relating to the use of biological resources to avoid or minimise adverse impacts on biodiversity	●
17. Significant adverse impacts prevention	●
18. Prevention of alien species introduction	●
19. Identification and monitoring	●

Legal Requirement 14: Area-based Management

Although there are no area-based management requirements in place for biodiversity, IATTC has time and spatial closures of the fishery in place, which can also help in conserving biodiversity.²⁹⁸ This warrants the attribution of a yellow dot (Table 6.13).

Legal Requirement 15: Protection of Endangered and Threatened Species

There are no measures specifically targeting the protection of endangered and threatened species. However, there are conservation measures in place for sharks, seabirds and sea turtles as well as management and conservation measures for targeted tuna fish stocks.²⁹⁹ This warrants the attribution of a yellow dot (Table 6.13).

²⁹⁷ These legal requirements are described in detail in Section 5.7 of Chapter 5. Legal requirements 20 to 23 denote all the relevant legal provisions under international law. Legal requirements B, D and E are those that are directly aimed at institutions.

²⁹⁸ IATTC, 'Amendment to Resolution C-11-01 on Tuna Conservation' (C-12-01, 2012) provides temporal and spatial closure areas for yellowfin, bigeye and skipjack tuna fisheries. IATTC, 'Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean during 2014-2016' (C-13-01, 2013) also provides spatial and temporal conservation measures for yellowfin, bigeye and skipjack tuna.

²⁹⁹ See all relevant measures mentioned under 'fisheries measures' in Section 6.5.1.2 of this chapter.

Legal Requirement 16: Adoption of Measures relating to the Use of Biological Resources to Avoid or Minimise Adverse Impacts on Biodiversity

There are no measures in place relating to the use of EIAs and no mention of biodiversity or ecosystem protection. However, IATTC assesses the effects of fishing with FADs on targeted and non-targeted species and, hence, is attributed a yellow dot (Table 6.13).³⁰⁰

Legal Requirement 17: Significant Adverse Impacts Prevention

There are no measures in place relating to the use of EIAs and thus this legal requirement warrants a red dot (Table 6.13).

Legal Requirement 18: Prevention of Alien Species Introduction

There are no measures in place for the prevention of alien species introduction, hence the attribution of a red dot (Table 6.13).

Legal Requirement 19: Identification and Monitoring

There is no requirement to identify and monitor biodiversity *per se*, but there is a requirement to monitor the catch of specific species, particularly targeted stocks and catch or fisheries interactions with some bycatch species such as seabirds, sea turtles and sharks (Table 6.13).³⁰¹








6.5.1.4 Scientific Data

This section assesses the extent to which IATTC has implemented the global legal measures on scientific data outlined in Section 5.5 of Chapter 5. These measures on scientific data are presented in categories, as depicted in Figure 5.2 of Chapter 5.

³⁰⁰ IATTC, 'Collection and Analyses of Data on Fish-Aggregating Devices' (C-13-04, 2013) requests States to collect all data related to FADs and to submit them the Commission. See also: IATTC, 'Resolution on Fish-Aggregating Devices' (C-99-07, 1999).

³⁰¹ IATTC, 'Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean during 2014-2016' (C-13-01, 2013); IATTC, 'Resolution on the Conservation of Oceanic Whitetip Sharks Caught in Association with Fisheries in the Antigua Convention Area' (C-11-10, 2011); IATTC, 'Resolution to Mitigate the Impact on Seabirds of Fishing for Species Covered by the IATTC' (C-11-02, 2011); IATTC, 'Resolution to Mitigate the Impact of Tuna Fishing Vessels on Sea Turtles' (C-07-03, 2007); IATTC, 'Resolution on Northern Albacore Tuna' (C-05-02, 2005); IATTC, 'Resolution on the Conservation of Sharks Caught in Association with Fisheries in the Eastern Pacific Ocean' (C-05-03, 2005); IATTC, 'Resolution on a Three-Year Program to Mitigate the Impact on Tuna Fishing on Sea Turtles' (C-04-07, 2004).

Table 6.14: Implementation of Scientific Data Measures by IATTC³⁰²

<i>Legal Requirement</i>	<i>IATTC</i>
20. Data collection	
21. Data sharing	
22. Education and training	
23. Scientific criteria	
B) Collect complete and accurate fisheries data, ³⁰³ including for stock assessments as well as for the impacts that fishing has on non-target species ³⁰⁴	
D) Promote and conduct scientific research on straddling and migratory fish stocks ³⁰⁵	
E) Develop appropriate technologies for research on straddling and migratory fish stocks ³⁰⁶	

Legal Requirement 20: Data Collection

Data on targeted stocks as well as bycatch species, such as seabirds, sharks and sea turtles, must be collected by States, hence the attribution of a green dot (Table 6.14).³⁰⁷

Legal Requirement 21: Data Sharing

Data must be shared between States and the Commission.³⁰⁸ This warrants the attribution of a green dot (Table 6.14).

³⁰² These legal requirements are described in detail in Section 5.5 of Chapter 5. Legal requirements 20 to 23 denote all the relevant legal provisions under international law. Legal requirements B, D and E are those that are directly aimed at institutions.

³⁰³ UNFSA art 5j, art 10d and art 10f; *Code of Conduct* art 7.4.4, art 8.1.3 and art 8.4.3.

³⁰⁴ UNFSA art 10d.

³⁰⁵ Ibid art 5k and art 10g.

³⁰⁶ Ibid art 5k and art 10g.

³⁰⁷ IATTC, 'Resolution on Data Provision' (C-03-05, 2003) requires all pertinent catch and effort data to be provided annually to the Commission. IATTC, 'Collection and Analyses of Data on Fish-Aggregating Devices' (C-13-04, 2013) requests States to collect all data related to FADs and to submit them the Commission. IATTC, 'Consolidated Resolution on Bycatch' (C-04-05 Rev 2, Revised, 2004) art 4b encourages all States to voluntarily provide the IATTC with data on sea turtle bycatches. IATTC, 'Resolution on the Conservatoin of Sharks Caught in Association with Fisheries in the Eastern Pacific Ocean' (C-05-03, 2005) art 11 requires States to provide their data on shark catches annually to the IATTC. The same is required of States for seabird interactions data in IATTC, 'Resolution to Mitigate the Impact on Seabirds of Fishing for Species Covered by the IATTC' (C-11-02, 2011) art 7. States are also to report interactions with oceanic whitetip sharks as per IATTC, 'Resolution on the Conservation of Oceanic Whitetip Sharks Caught in Association with Fisheries in the Antigua Convention Area' (C-11-10, 2011) art 3.

³⁰⁸ See references for data collection above. All collected data has to be sent to the IATTC.

Legal Requirement 22: Education and Training

There is a training requirement for scientists as well as a requirement to educate fishermen on sea turtle bycatch.³⁰⁹ This warrants the attribution of a yellow dot (Table 6.14).

Legal Requirement 23: Scientific Criteria

IATTC has established some templates to be filled out by States.³¹⁰ Although these are less thorough than SPRFMO's, they do provide the scientific criteria that IATTC deems necessary for its functioning, hence the attribution of a green dot (Table 6.14).

Legal Requirement B: Collect Complete and Accurate Fisheries Data, including for Stock Assessments as well as for the Impacts that Fishing has on Non-target Species

Stock assessments are undertaken for targeted fish species only.³¹¹ States must collect data on species caught and send this information to the Commission.³¹² For these reasons, this legal requirement gets a yellow dot (Table 6.14).

Legal Requirement D: Promote and Conduct Scientific Research on Straddling and Migratory Fish Stocks

States and observers are to conduct research on tuna species regulated by the Commission, hence the attribution of a green dot (Table 6.14).³¹³

³⁰⁹ IATTC, 'Best Available Science' (C-12-10, 2012) art 1. IATTC, 'Consolidated Resolution on Bycatch' (C-04-05 Rev 2, Revised, 2004) art 4 reads: 'Educate fishermen through information dissemination activities, including distributing informational materials and organizing seminars on, *inter alia*, reducing bycatches of sea turtles and safe handling of incidentally caught sea turtles to improve their survivability'.

³¹⁰ See, eg: Criteria for FADs are found in IATTC, 'Collection and Analyses of Data on Fish-Aggregating Devices' (C-13-04, 2013) annex 1. Data to be collected for the VMS are found in IATTC, 'Resolution (Amended) on the Establishment of a Vessel Monitoring System (VMS)' (C-14-02, 2014) art 2. IATTC, 'Resolution (Amended) on a Regional Vessel Register' (C-14-01, 2014) provides a list of vessel data to be submitted to IATTC by States. Transshipment data information to be gathered can be found in IATTC, 'Resolution on Establishing a Program for Transshipments by Large-Scale Fishing Vessels' (C-08-02, 2008). The IATTC Transshipment Declaration can be found in IATTC, '74th IATTC Meeting' (June 2006) annex 2. Annex 1 ('Information to be Provided in Advance by Vessels Requesting Port Entry') and annex 3 ('IATTC Port Inspection Report Form') of the IATTC, '81st IATTC Meeting' (October 2010) and IATTC, '82nd IATTC Meeting' (July 2011) contain information on port inspection. Templates on catch certification are found in annexes 1-3 of IATTC, '82nd IATTC Meeting' (July 2011) and annexes 1-2 and 4 of IATTC, '83rd IATTC Meeting' (June 2012). Templates to report alleged IUU activities can be found in annex B of IATTC, '83rd IATTC Meeting' (June 2012) and annex A of IATTC, '85th IATTC Meeting' (June 2013).

³¹¹ See Stock Assessment Research Programme, <https://www.iatc.org/ResearchENG.htm> (accessed: 13 January 2015).

³¹² IATTC, 'Resolution on Data Provision' (C-03-05, 2003) requires all pertinent catch and effort data to be provided annually to the Commission.

³¹³ See, eg: IATTC, 'Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean during 2014-2016' (C-13-01, 2013) and IATTC, 'Collection and Analyses of Data on Fish-Aggregating Devices' (C-13-04, 2013).

Legal Requirement E: Develop Appropriate Technologies for Research on Straddling and Migratory Fish Stocks

No requirement, hence the attribution of a red dot (Table 6.14).

6.5.1.5 Marine Environmental Protection Measures

This section assesses the extent to which IATTC has implemented the global legal marine environmental protection measures outlined in Section 5.8 of Chapter 5. These marine environmental protection measures are presented by categories, as depicted in Table 5.14 of Chapter 5.

Table 6.15: Implementation of Marine Environmental Protection Measures by IATTC³¹⁴

<i>Legal Requirement</i>	<i>IATTC</i>
24. Protection of the marine environment	●
25. Marine pollution prevention	●
26. Monitoring	●

Legal Requirements 24, 25 and 26:

There are no measures on the protection of rare or fragile ecosystems, depleted, threatened or endangered species' habitats and other forms of marine life or measures to prevent the introduction of alien species. There is furthermore no mention of EIAs or measures on marine pollution or the monitoring thereof (Table 6.15).

6.5.1.6 Compliance with IATTC Measures

The IATTC started as a research agreement between the United States of America (USA) and Costa Rica in 1949. Over the years, other interested countries in the region joined the Commission, contributing to its development as a management institution for the conservation and sustainable use of highly migratory fish stocks in the Eastern Pacific.

The IATTC has met annually since 1950. The first years of the Commission's existence were used to undertake research on the fish stocks as well as their total capacity to

³¹⁴ These legal requirements are described in detail in Section 5.8 of Chapter 5.

sustain a growing fishery in the Eastern Pacific. With the realisation that yellowfin tuna stocks were decreasing, the IATTC first recommended a catch quota for yellowfin tuna in 1962. By 1966, a conservation programme was established for yellowfin tuna in the Eastern Pacific that was implemented until 1979. Total allowable catch, fishing capacity and fishing effort limitations have been in place since then for yellowfin tuna.³¹⁵ Fishing effort limitations are also in place for other tuna species, including bigeye, albacore, and bluefin.³¹⁶

Together with these restrictions, the IATTC started to apply time and area closures based on the total catch caught in the area and also provided for allowances for incidental catches and for bycatch. IATTC established a Permanent Working Group on Fleet Capacity in 1998 and a Plan for Regional Management of Fishing Capacity in 2005.³¹⁷ It also adopted several recommendations and resolutions on fishing regulations as well as trade measures and transshipment regulations.³¹⁸

³¹⁵ IATTC, 'Resolution on Fleet Capacity' (C-98-11, 1998); IATTC, 'Resolution on Fleet Capacity' (C-00-01, 2000); IATTC, 'Resolution on the Capacity of the Tuna Fleet Operating in the Eastern Pacific Ocean' (C-00-10, 2000); IATTC, 'Rules of Procedure Regarding Capacity Loans or Concessions and Chartering of Vessels with Temporary Transfers of Capacity' (C-12-06, 2012); IATTC, 'Resolution on the Management of Fishing Capacity of Large-Scale Tuna Longline Fishery' (C-99-04, 1999); IATTC, 'Resolution on Yellowfin Tuna' (C-98-04, 1998); IATTC, 'Resolution on Yellowfin Tuna' (C-98-07, 1998); IATTC, 'Resolution on Yellowfin Tuna' (C-99-03, 1999); IATTC, 'Resolution for Implementing the Catch Limit for Yellowfin Tuna in 1999' (C-99-08, 1999); IATTC, 'Resolution on Yellowfin Tuna' (C-00-03, 2000); IATTC, 'Resolution on Yellowfin Tuna' (C-01-07, 2001); IATTC, 'Resolution on the Conservation of Yellowfin and Bigeye Tuna in the Eastern Pacific Ocean' (C-02-04, 2002).

³¹⁶ IATTC, 'Resolution on Bigeye Tuna' (C-98-05, 1998); IATTC, 'Resolution on the Conservation and Management of Bigeye Tuna in the Eastern Pacific Ocean' (C-99-06, 1999); IATTC, 'Resolution on Bigeye Tuna' (C-99-09, 1999); IATTC, 'Resolution on Bigeye Tuna' (C-00-02, 2000); IATTC, 'Resolution on IATTC Bigeye Tuna Statistical Document Program' (C-03-01, 2003); IATTC, 'Resolution on the Conservation of Bigeye Tuna in the Eastern Pacific Ocean' (C-01-06, 2001); IATTC, 'Resolution on the Conservation of Yellowfin and Bigeye Tuna in the Eastern Pacific Ocean' (C-02-04, 2002). IATTC, 'Resolution on Northern Albacore Tuna' (C-05-02, 2005); IATTC, 'Supplemental Resolution on North Pacific Albacore' (C-13-03, 2013). IATTC, 'Conservation and Management Measures for Bluefin Tuna in the Eastern Pacific' (C-12-09, 2012); IATTC, 'Measures for the Conservation and Management of Bluefin Tuna in the Eastern Pacific Ocean' (C-13-02, 2013).

Other IATTC Resolutions for tuna: IATTC, 'Resolution on the Conservation of Tuna in the Eastern Pacific Ocean' (C-03-12, 2003); IATTC, 'Resolution for a Multi-Annual Program on the Conservation of Tuna in the Eastern Pacific Ocean for 2004, 2005 and 2006' (C-04-09, 2004); IATTC, 'Resolution for a Program on the Conservation of Tuna in the Eastern Pacific Ocean for 2007' (C-06-02, 2006); IATTC, 'On a Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean in 2009-2011' (C-09-02, 2009); IATTC, 'Resolution on a Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean in 2009-2011' (C-09-01, 2009); IATTC, 'Recommendation on a Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean in 2011-2013' (C-10-01, 2010); IATTC, 'Resolution on a Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean in 2011-2013' (C-11-01, 2011); IATTC, 'Amendment to Resolution C-11-01 on Tuna Conservation' (C-12-01, 2012); IATTC, 'Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean during 2014-2016' (C-13-01, 2013).

³¹⁷ IATTC, 'Resolution on the Establishment of a Working Group on Fleet Capacity in the Eastern Pacific Ocean' (C-98-06, 1998).

³¹⁸ IATTC, 'Resolution on Fish-Aggregating Devices' (C-98-10, 1998); IATTC, 'Resolution on Fish-Aggregating Devices' (C-99-07, 1999); IATTC, 'Collection and Analyses of Data on Fish-Aggregating Devices' (C-13-04, 2013); IATTC, 'Resolution on Fishing by Vessels of Non-Parties' (C-00-07, 2000); IATTC, 'Resolution on Fishing by Vessels of Non-Parties' (C-01-02, 2001); IATTC, 'Resolution on Criteria for Attaining the Status of Cooperating Non-Party or Cooperating Fishing Entity to AIDCP and IATTC' (C-03-11, 2003); IATTC, 'Resolution on Criteria for Attaining the Status of Cooperating Non-Party or Fishing Entity in IATTC' (C-04-02, 2004); IATTC, 'Recommendation Prohibiting Fishing on Data Buoys' (C-10-03, 2010), IATTC, 'Resolution Prohibiting Fishing on Data Buoys' (C-11-03, 2011); IATTC, 'Adoption of Trade Measures to Promote Compliance' (C-06-05, 2006); IATTC, 'Resolution on Establishing a Program for Transshipments by Large-Scale Fishing Vessels' (C-06-04, 2006); IATTC, 'Resolution on Establishing a Program for Transshipments by Large-Scale Fishing Vessels' (C-08-02, 2008) amended by IATTC, 'Resolution (Amended) on Establishing a Program for Transshipments by Large-Scale Fishing Vessels' (C-11-09, 2011), which is further replaced by IATTC, 'Amendment to Resolution C-11-09 on Establishing a Program for Transshipments by Large-Scale Fishing Vessels' (C-12-07, 2012).

In terms of compliance, the catch quotas established as well as other conservation and management measures adopted were not always fully complied with. Most of the time, the overall yearly catch quota was overstepped.³¹⁹ Member States drafted for the first time a list of infractions and sanctions to be applied within the Convention Area in 1993.³²⁰ The IATTC also adopted a regional vessel register, a positive list of longline vessels, an IUU vessel list, at-sea reporting requirements, catch reporting requirements and the requirement to use a VMS while in the Convention Area.³²¹ A Permanent Working Group on Compliance was established in June 1999 and the first Resolution on Compliance was adopted in June 2000.³²²

The 2003 Antigua Convention updated IATTC's legal framework to include some modern conservation concepts found in the latest fisheries agreements such as the *Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas* (Compliance Agreement), the *Code of Conduct*, the UNFSA, and soft law instruments such as *Agenda 21* and the *Rio Declaration*.³²³ The Antigua Convention also gave IATTC the capacity to adopt and impose binding management measures on its member States. Until then, the wording of IATTC's resolutions and recommendations was not very strong and gave many of its provisions the character of non-legally binding provisions. Particularly, conservation measures for the various tuna stocks as well as the measures for sea turtles and seabirds were only recommended. These recommendations called for joint action on the part of the member States and included from 1969, a concern to involve non-member States in cooperating in the implementation of the conservation measures adopted by IATTC.³²⁴

³¹⁹ See meeting reports of the IATTC Permanent Working Group on Compliance (total of 10 meetings between 2000 and 2009; <https://www.iattc.org/IATTC-WGsENG.htm>, accessed: 13 January 2015) and the meeting reports of the IATTC Committee for the Review of Implementation of Measures adopted by the Commission (total of 5 meetings between 2010 and 2014; <https://www.iattc.org/IATTC-CORENG.htm>, accessed: 13 January 2015).

³²⁰ IATTC, '51st IATTC Meeting' (June 1993).

³²¹ IATTC, 'Resolution on a Regional Vessel Register' (C-00-06, 2000) updated by IATTC, 'Resolution (Amended) on a Regional Vessel Register' (C-11-06, 2011) and IATTC, 'Resolution (Amended) on a Regional Vessel Register' (C-14-01, 2014); IATTC, 'Resolution on the Establishment of a List of Longline Fishing Vessels Over 24 Meters (LSTLFVs) Authorized to Operate in the Eastern Pacific Ocean' (C-03-07, 2003) replaced by IATTC, 'Resolution (Amended) on the Establishment of a List of Longline Fishing Vessels over 24 Meters (LSTLFVs) Authorized to Operate in the Eastern Pacific Ocean' (C-11-05, 2011); IATTC, 'Resolution to Establish a List of Vessels Presumed to Have Carried Out Illegal, Unreported and Unregulated Fishing Activities in the Eastern Pacific Ocean' (C-05-07, 2005); IATTC, 'Resolution on At-Sea Reporting' (C-01-03, 2001), IATTC, 'Resolution on At-Sea Reporting' (C-03-04, 2003); IATTC, 'Resolution on Catch Reporting' (C-04-10, 2004); IATTC, 'Resolution on the Establishment of a Vessel Monitoring System (VMS)' (C-04-06, 2004). This resolution has been amended and replaced in 2014 by Resolution IATTC, 'Resolution (Amended) on the Establishment of a Vessel Monitoring System (VMS)' (C-14-02, 2014).

³²² IATTC, 'Resolution on the Establishment of a Permanent Working Group on Compliance' (C-99-01, 1999); IATTC, 'Resolution on Compliance' (C-00-05, 2000); IATTC, 'Resolution on Compliance' (C-02-01, 2002); IATTC, 'Resolution on the Process for Improved Compliance of Resolutions Adopted by the Commission' (C-11-07, 2011).

³²³ Adopted in 2003 through IATTC, 'Resolution on the Adoption of the Convention for the Strengthening of the Inter-American Tropical Tuna Commission Established by the 1949 Convention between the United States of America and the Republic of Costa Rica – Antigua Convention' (C-03-02, 2003). This Convention updates the 1949 IATTC Convention.

³²⁴ IATTC, '21st IATTC Annual Meeting' (March 1969) appendix III.

The issue of tuna dumping and discards was first mentioned in 1970 and led in 1971 to the establishment of a Committee to look into this issue. This Committee was transformed into the Working Group on Bycatch in 1997 which continues to meet to date to discuss ways to reduce and eventually eliminate bycatch in the Eastern Pacific region. The issue of dolphin mortality linked to the tuna fishery was first raised in 1973, and, in 1979, a tuna-dolphin programme was established which consisted of scientific research carried out to monitor the stocks as well as to develop adequate equipment to reduce dolphin mortality when using purse-seine fishing nets.³²⁵ Due to the lack of funding, this programme did not start until 1980, at which time the IATTC international observer programme was also established.³²⁶ The non-legally binding Agreement for the Conservation of Dolphins, known as the 'La Jolla Agreement', was adopted in June 1992 and the legally binding *Agreement on the International Dolphin Conservation Program* (AIDCP) entered into force in 1999.³²⁷ In 1995, several States reiterated their commitments to eliminating dolphin mortality in the EPO fisheries as declared in the 1992 La Jolla Agreement.³²⁸

Although bycatch and other species conservation were discussed at the Commission's meetings, the dolphin issue is the only one that has warranted such attention from the Commission as well as triggering a movement to establish a special programme to look into this issue. IATTC has adopted several resolutions and recommendations since the late 1990s on bycatch, and the conservation of sharks, seabirds, and sea turtles.³²⁹

³²⁵ IATTC, '37th IATTC Meeting' (October 1979).

³²⁶ This observer programme was fully operational from 1986 on when all vessels carrying out fishery activities in the Eastern Pacific Ocean (EPO) had observers on board. IATTC, 'Implementation Procedures for the Observer Program for At-Sea Transshipments by Large-Scale Tuna Longline' (C-08-03, 2008) and IATTC, 'Resolution on Scientific Observers for Longline Vessels' (C-11-08, 2011).

³²⁷ IATTC, 'Resolution Regarding the Agreement on the International Dolphin Conservation Program' (C-98-01, 1998).

³²⁸ *Declaration of Panama* (1995) < https://www.iattc.org/PDFFiles2/Declaration_of_Panama.pdf > (accessed: 15 February 2015), signed by the governments of Belize, Colombia, Costa Rica, Ecuador, France, Honduras, Mexico, Panama, Spain, the United States of America, Vanuatu and Venezuela.

³²⁹ IATTC, 'Resolution on Bycatch' (C-99-11, 1999); IATTC, 'Resolution on Bycatch' (C-00-08, 2000); IATTC, 'Resolution on Bycatch' (C-01-04, 2001); IATTC, 'Resolution on Bycatch' (C-02-05, 2002); IATTC, 'Consolidated Resolution on Bycatch' (C-03-08, 2003); IATTC, 'Consolidated Resolution on Bycatch' (C-04-05, 2004); IATTC, 'Resolution on the Conservation of Sharks Caught in Association with Fisheries in the Eastern Pacific Ocean' (C-05-03, 2005); IATTC, 'Resolution on the Conservation of Oceanic Whitetip Sharks Caught in Association with Fisheries in the Antigua Convention Area' (C-11-10, 2011); IATTC, 'Resolution on Incidental Mortality of Seabirds' (C-05-01, 2005); IATTC, 'Recommendation to Mitigate the Impact on Seabirds of Fishing for Species Covered by the IATTC' (C-10-02, 2010); IATTC, 'Resolution to Mitigate the Impact on Seabirds of Fishing for Species Covered by the IATTC' (C-11-02, 2011); IATTC, 'Recommendation on Sea Turtles' (C-03-10, 2003); IATTC, 'Resolution on a Three-Year Program to Mitigate the Impact on Tuna Fishing on Sea Turtles' (C-04-07, 2004); IATTC, 'Resolution to Mitigate the Impact of Tuna Fishing Vessels on Sea Turtles' (C-07-03, 2007).

6.5.2 South Pacific Regional Fisheries Management Organisation (SPRFMO)

This section assesses the extent to which SPRFMO has implemented the global legal provisions and measures for the conservation of high seas living resources and the protection of the marine environment. For this analysis, the global legal measures are categorised following the same categories outlined in Chapter 5, namely the general measures; fisheries measures; biodiversity measures; measures on scientific data; and marine environmental protection measures. Appendices L and M provide a comparative table summarising the integration of global legal measures aimed at States and at institutions, respectively, into SPRFMO's Convention and their implementation by SPRFMO. A section on the compliance of States in implementing SPRFMO's legal measures concludes this section.

6.5.2.1 General Legal Provisions

This section examines the implementation of the three basic legal requirements outlined in the LOSC in Section 2 of its Part VII, namely the contribution and exchange of scientific data, the determination of an allowable catch, and the taking of non-discriminatory conservation measures for the conservation of high seas living resources.³³⁰

Table 6.16: Implementation of General Measures by SPRFMO³³¹

<i>Legal Requirement</i>	<i>SPRFMO</i>
1. Contribute and exchange scientific data	●
2. Determine allowable catch	●
3. Take non-discriminatory conservation measures	●

Legal Requirements 1, 2 and 3: Contribution and Exchange of Scientific Data; Determining of an Allowable Catch; Taking Non-discriminatory Conservation Measures

According to SPRFMO's meeting reports, all of these three legal requirements are being implemented by the Commission. States must collect relevant data and report it

³³⁰ Although the protection and preservation of the marine environment is also a basic legal requirement outlined in the LOSC in its Part XII, it will be treated in a separate section throughout this chapter.





³³¹ These legal requirements are described in detail in Section 5.4 and in Figure 5.1 of Chapter 5.

annually and in a timely manner to the SPRFMO Commission.³³² To date, SPRFMO has adopted nine conservation measures, on the conservation and management of Chilean jack mackerel, which includes the determination of an allowable catch, on the management of bottom fishing and the protection of marine ecosystems, on the use of gillnets in the Convention Area, and on the minimisation of seabird bycatch (Table 6.16).³³³

6.5.2.2 Fisheries Measures

This section evaluates the extent to which SPRFMO has implemented the global legal fisheries measures outlined in Section 5.6 of Chapter 5. These fisheries measures are presented by categories, as depicted in Figure 5.3 of Chapter 5.

Table 6.17: Implementation of Fisheries Measures by SPRFMO³³⁴

<i>Legal Requirement</i>	<i>SPRFMO</i>
4. Conservation measures for target stocks	
5. Conservation measures for associated, dependent and same ecosystem species	
7. Protect critical fisheries habitats and vulnerable marine ecosystems	
8. Pollution, waste, discards and bycatch minimisation	

³³² SPRFMO, 'Conservation and Management Measure on Standards for the Collection, Reporting, Verification and Exchange of Data' (CMM 2.02, 2014) ('CMM 2.02'). This measure replaced SPRFMO, 'Standards for the Collection, Reporting, Verification and Exchange of Data' (CMM 1.03, 2013) ('CMM 1.03') and applies to both SPRFMO members and cooperating non-members. Data to be collected includes the following: data on fishing activities; data on the impacts of fishing on non-target and associated or dependent species; data on landings and transshipments; vessel data; effort and catch data, including target, bycatch and associated and dependent species; biological data on fishery resources and other relevant scientific information; VMS data. States have to establish observer programmes aimed at collecting vessel, effort and catch data, biological data and other relevant scientific data and information as well as take relevant sample data (CMM 2.02 art 2). States furthermore have the duty to collect relevant data regarding the Chilean jack mackerel fisheries (SPRFMO, 'Conservation and Management Measure for *Trachurus murphyi*' (CMM 2.01, 2014) ('CMM 2.01') art 11 and art 13).











³³³ See: <https://www.southpacificfmo.org/conservation-measures/> (accessed: 1 September 2014). CMM 2.01. This measure complements and updates SPRFMO, 'Conservation and Management Measure for *Trachurus murphyi*' (CMM 1.01, 2013) ('CMM 1.01'). It applies to both SPRFMO members and cooperating non-members as well as within the national jurisdiction of Chile. The catch levels of States continue to be restricted but this time a total limit of 390,000 tonnes applies to all States, allowing an extra 30,000 tonnes to be caught in 2014 as compared to 2013 (CMM 2.01 art 5). The maximum total catch limit for Chilean jack mackerel has also been increased from 430,000 tonnes to 440,000 tonnes (CMM 2.01 art 10).

SPRFMO, 'Conservation and Management Measure for the Management of Bottom Fishing in the SPRFMO Convention Area' (CMM 2.03, 2014) ('CMM 2.03'); SPRFMO, 'Conservation and Management Measure for Gillnets in the SPRFMO Convention Area' (CMM 1.02, 2013) ('CMM 1.02').

SPRFMO, 'Conservation and Management Measure for Minimising Bycatch of Seabirds in the SPRFMO Convention Area' (CMM 2.04, 2014) ('CMM 2.04'). SPRFMO adopted a series of seabird mitigation measures that have to be used when using demersal longlines (art 1 and annex 1) or trawl gear (art 2 and annex 2). Captured or entangled seabirds (art 6) have to be released and States have to report all seabird encounters to the Secretariat (art 7).

³³⁴ These legal requirements are described in detail in Sections 5.6 of Chapter 5. Legal requirements 4 to 19 denote all the relevant legal provisions under international law. Legal requirements J to N are those that are directly aimed at institutions.

Table 6.17 (continued)

<i>Legal Requirement</i>	<i>SPRFMO</i>
9. Prevention and elimination of overfishing and excess fishing capacity	
10. Application of the precautionary approach	
11. Promotion of the effectiveness of regional and global conservation and management measures	
12. Effective monitoring, control and surveillance	
13. Enforcement of regional conservation and management measures	
J) Establishment of boarding and inspection procedures ³³⁵	
K) Measures to reduce the number of seabirds caught as bycatch in the longline fisheries ³³⁶ (<i>soft law provision</i>)	
L) Adoption of a regional plan for the conservation of <i>Chondrichthyes</i> ³³⁷ (<i>soft law provision</i>)	
M) Adoption of measures to combat IUU fishing, including the development of unified port State measures ³³⁸ (<i>soft law provision</i>)	
N) Strengthening of RFOs for improved management of fishing capacity ³³⁹ (<i>soft law provision</i>)	

Legal Requirements 4 and 5: Conservation Measures for Target Stocks and Associated, Dependent and Same Ecosystem Species

To date, SPRFMO has only adopted conservation measures for Chilean jack mackerel and with respect to bottom fishing and VMEs.³⁴⁰ Conservation measures for other

³³⁵ UNFSA art 21.2.

³³⁶ IPOA-Seabirds para 19.

³³⁷ IPOA-Sharks para 25.

³³⁸ IPOA-IUU para 62, para 63, para 64, para 68, para 69, para 80.1, para 80.2, para 80.3, para 80.5, para 80.7, para 80.8, para 80.9, para 80.10, para 80.13, para 80.14 and para 82.3.

³³⁹ IPOA-Capacity para 8.

³⁴⁰ CMM 2.01. This measure complements and updates 2013 CMM 1.01. It applies to both SPRFMO members and cooperating non-members as well as within the national jurisdiction of Chile. This measure continues to limit the effort levels of States through the total gross tonnage of their vessels to the same levels as for the 2013 measure (CMM 2.01 art 4). The catch levels of States continue to be restricted but this time a total limit of 390,000 tonnes applies to all States, allowing an extra 30,000 tonnes to be caught in 2014 as compared to 2013 (CMM 2.01 art 5). The maximum total catch limit for Chilean jack mackerel has also been increased from 430,000 tonnes to 440,000 tonnes (CMM 2.01 art 10).

CMM 2.03. Through this measure, SPRFMO aims to promote the sustainable management of target fish stocks and non-target species that are targeted or disturbed by bottom fisheries as well as protect marine ecosystems, particularly VMEs (art 1). Flag States members or cooperating non-members of SPRFMO are to prohibit their vessels from undertaking bottom fishing in the Convention Area (art 8b and art 10) and, in exceptional cases, to limit the bottom fishing catch to less than the 2002-2006 average levels (art 8c). Flag State vessels also have to stop any bottom fishing activities within five nautical miles of a VME (art 8g). Areas identified as VMEs will be closed to bottom fishing (art 22).

targeted fish stocks have not yet been adopted, hence the attribution of yellow dots for these legal requirements (Table 6.17).

Legal Requirement 7: Protect Critical Fisheries Habitats and Vulnerable Marine Ecosystems

Apart from the bottom fishing prohibition for VMEs, there are no measures in place to protect critical fisheries habitats.³⁴¹ This warrants the attribution of a yellow dot (Table 6.17).

Legal Requirement 8: Pollution, Waste, Discards and Bycatch Minimisation

There are no measures in place for the minimisation of pollution, waste or discards. There are furthermore no measures on fish and mesh size limits, closure areas, the amount of discard and types of fishing gear allowed. States are requested to collect data on bycatch and there are measures in place for the conservation of seabirds.³⁴² Moreover, there is also a prohibition to carry out bottom fishing in the Convention Area. This warrants the attribution of a yellow dot (Table 6.17).

Legal Requirement 9: Prevention and Elimination of Overfishing and Excess Fishing Capacity

There are effort and catch management measures in place.³⁴³ A rebuilding plan for the Chilean jack mackerel is currently being discussed at the Commission's annual meetings but there are no other management plans under discussion.³⁴⁴

Only stock assessments on Chilean jack mackerel and targeted deep-sea species are being undertaken.³⁴⁵ For these reasons, a yellow dot has been given to this legal requirement (Table 6.17).

³⁴¹ *CMM 2.03*. See above.

³⁴² *CMM 2.04*. All seabird encounters have to be reported to the SPRFMO Secretariat (*CMM 2.04* art 7). Furthermore, States have to collect data to assess the impacts of fishing on non-target and associated or dependent species (*CMM 2.02* art 1). The Scientific Committee of SPRFMO also has to undertake stock assessments of targeted deep-sea species as well as possible bycatch species (*CMM 2.03* art 5).

³⁴³ *CMM 2.01*. See details of catch and effort measures in place above.

³⁴⁴ SPRFMO, 'Proposal for a SPRFMO Jack Mackerel Rebuilding Plan' (Paper No ESRC-01-02, SPRFMO, 27 - 31 January 2014), presented by the European Union. This proposed plan to rebuild the Chilean jack mackerel stock was added as Annex K to the 2014 second Commission meeting report.

³⁴⁵ *CMM 2.01* and *CMM 2.03*.

Legal Requirement 10: Application of the Precautionary Approach

There is a prohibition on undertaking bottom fishing in the Convention Area.³⁴⁶ To date, no reference points or emergency measures have been adopted. There are research programmes as well as data collection and observer monitoring programmes in place.³⁴⁷

There is a requirement for States to collect data on non-target species but there are no research programmes and no conservation plans in place for non-target species or habitats of special concern.³⁴⁸ Only conservation measures for exploratory or new fisheries in terms of bottom fishing are in place.³⁴⁹ There are no emergency conservation measures in place. For all these reasons, a yellow dot was attributed to this legal requirement (Table 6.17).

Legal Requirement 11: Promotion of the Effectiveness of Regional and Global Conservation and Management Measures

SPRFMO established a record of vessels authorised to fish in its Convention Area in 2014, which provides that only vessels that are able to effectively exercise the responsibilities under the SPRFMO Convention should be authorised by the flag State to be on this list.³⁵⁰ SPRFMO is developing an IUU vessels list.³⁵¹ To date, no other measures to combat IUU fishing, other than port State measures (see legal requirement 13) have been established. In this regard, SPRFMO has adopted a series of minimum standards of inspection in port aimed at foreign vessels landing or transshipping species caught within the SPRFMO Convention Area, including prior notification, inspection and infringement procedures.³⁵² This warrants the attribution of a yellow dot (Table 6.17).

³⁴⁶ *CMM 2.03*. Flag States members or cooperating non-members of SPRFMO are to prohibit their vessels from undertaking bottom fishing in the Convention Area (art 8b and art10) and, in exceptional cases, to limit the bottom fishing catch to less than the 2002-2006 average levels (art 8c). Flag State vessels also have to stop any bottom fishing activities within five nautical miles of a VME (art 8g).

³⁴⁷ *CMM 2.02*. This measure replaced 2013 *CMM 1.03*. SPRFMO has established two Working Groups under its Scientific Committee: a Jack Mackerel Working Group and a Deep-water Working Group. See: <https://www.sprfmo.int/scientific-committee/> (accessed: 1 September 2014).

³⁴⁸ States have to collect data to assess the impacts of fishing on non-target and associated or dependent species (*CMM 2.02* art 1).

³⁴⁹ *CMM 2.03*.

³⁵⁰ SPRFMO, 'Conservation and Management Measure for the Establishment of the Commission Record of Vessels Authorised to Fish in the Convention Area' (CMM 2.05, 2014) ('*CMM 2.05*').

³⁵¹ A draft IUU list was discussed at the first meeting of the SPRFMO Compliance and Technical Committee meeting in 2014 (SPRFMO, 'Draft IUU List' (CTC-01-09, 2014)).

³⁵² SPRFMO, 'Conservation and Management Measure on Minimum Standards of Inspection in Port' (CMM 2.07, 2014) ('*CMM 2.07*') arts 11-25.

Legal Requirement 12: Effective Monitoring, Control and Surveillance

To date, no regional observer programme has been established, although there is a requirement that States establish observer programmes aimed at collecting vessel, effort and catch data, biological data and other relevant scientific data and information as well as taking relevant sample data, and no boarding and inspection procedures are in place.³⁵³ SPRFMO established in 2014 a VMS for the Convention Area and requests States to use this system to collect all relevant data.³⁵⁴ For these reasons, the attribution of a yellow dot is warranted (Table 6.17).

Legal Requirement 13: Enforcement of Regional Conservation and Management Measures

Port State measures to control foreign vessels (landings and transshipments) are in place.³⁵⁵ No other specific measures have been adopted to counter IUU fishing, other than the draft IUU vessels list (see legal requirement 11), and no sanctions have yet been established.³⁵⁶ This warrants the attribution of a yellow dot (Table 6.17).

Legal Requirement J: Establishment of Boarding and Inspection Procedures

No boarding and inspection procedures are in place, hence the attribution of a red dot (Table 6.17).³⁵⁷

Legal Requirement K: Measures to Reduce the Number of Seabirds Caught as Bycatch in the Longline Fisheries

SPRFMO adopted measures in 2014 to reduce the number of seabirds caught as bycatch in its longline fisheries, thus the attribution of a green dot (Table 6.17).³⁵⁸

³⁵³ *CMM 2.02* art 2. This measure replaced 2013 measure *CMM 1.03* and applies to both SPRFMO members and cooperating non-members. SPRFMO is planning to develop an observer programme, as per *SPRFMO Convention* art 28. Such a programme needs to be established within 3 years of the convention's entry into force.

³⁵⁴ SPRFMO, 'Conservation and Management Measure for the Establishment of the Vessel Monitoring System in the SPRFMO Convention Area' (CMM 2.06, 2014) ('*CMM 2.06*'), *CMM 2.02* art 3. This measure replaced 2013 measure *CMM 1.03* and applies to both SPRFMO members and cooperating non-members.

³⁵⁵ *CMM 2.07*. A proposal for a CMM for the Regulation of Transshipments has been presented at the first meeting of the SPRFMO Compliance and Technical Committee meeting in 2014 (SPRFMO, 'Proposed Conservation and Management Measure for the Regulation of Transshipments in the SPRFMO Convention Area' (CTC-01-14, 2014)).

³⁵⁶ A draft IUU list was discussed at the first meeting of the SPRFMO Compliance and Technical Committee meeting (SPRFMO, 'Draft IUU List' (CTC-01-09, 2014)).

³⁵⁷ A proposal for a CMM for boarding and inspection procedures in the SPRFMO Convention Area has been presented at the first meeting of the SPRFMO Compliance and Technical Committee meeting in 2014 (SPRFMO, 'Proposed CMM for Boarding and Inspection Procedures in the SPRFMO Convention Area' (CTC-01-13, 2014)).

³⁵⁸ *CMM 2.04*. SPRFMO adopted a series of seabird mitigation measures that have to be used when using demersal longlines (art 1 and annex 1) or trawl gear (art 2 and annex 2). Captured or entangled seabirds (art 6) have to be released and States have to report all seabird encounters to the Secretariat (art 7).

Legal Requirement L: Adoption of a Regional Plan for the Conservation of *Chondrichthyes*

No regional plan for the conservation of *Chondrichthyes* has been adopted, hence the attribution of red dot (Table 6.17).

Legal Requirement M: Adoption of Measures to Combat IUU Fishing, including the Development of Unified Port State Measures

A draft IUU list was discussed at the first meeting of the SPRFMO Compliance and Technical Committee meeting in 2014.³⁵⁹ Only port State measures have been established thus far, hence the attribution of a yellow dot (Table 6.17).³⁶⁰






Legal Requirement N: Strengthening of RFOs for Improved Management of Fishing Capacity

As a newly established institution, SPRFMO has not yet had to strengthen its organisation or to undertake a performance review, hence the attribution of a red dot (Table 6.17).

6.5.2.3 Biodiversity Measures

This section evaluates the extent to which SPRFMO has implemented the global legal biodiversity measures outlined in Section 5.7 of Chapter 5. These biodiversity measures are presented in categories, as depicted in Figure 5.7 of Chapter 5.

Table 6.18: Implementation of Biodiversity Measures by SPRFMO³⁶¹


<i>Legal Requirement</i>	<i>SPRFMO</i>
14. Area-based management	
15. Protection of endangered and threatened species	
16. Adoption of measures relating to the use of biological resources to avoid or minimise adverse impacts on biodiversity	
17. Significant adverse impacts prevention	
18. Prevention of alien species introduction	

³⁵⁹ A draft IUU list was discussed at the first meeting of the SPRFMO Compliance and Technical Committee meeting (SPRFMO, 'Draft IUU List' (CTC-01-09, 2014)).

³⁶⁰ CMM 2.07.

³⁶¹ These legal requirements are described in detail in Section 5.7 of Chapter 5. Legal requirements 4 to 19 denote all the relevant legal provisions under international law. Legal requirements J to N are those that are directly aimed at institutions.

Table 6.18 (continued)

<i>Legal Requirement</i>	<i>SPRFMO</i>
19. Identification and monitoring	

Legal Requirement 14: Area-based Management

There is no area-based management in place, apart from bottom fishing closures around VMEs.³⁶² There are no measures in place to identify and select protected areas. This warrants the attribution of a yellow dot (Table 6.18).

Legal Requirement 15: Protection of Endangered and Threatened Species

The only measures in place are for Chilean jack mackerel and seabirds.³⁶³ There are no other conservation measures in place for other species. Hence the attribution of a yellow dot (Table 6.18).

Legal Requirement 16: Adoption of Measures relating to the Use of Biological Resources to Avoid or Minimise Adverse Impacts on Biodiversity

There are legal provisions on seabird mitigation measures and the protection of marine ecosystems but no measures on the protection of migratory species along their migratory routes, as required by the CMS, hence the attribution of a yellow dot (Table 6.18).³⁶⁴

Legal Requirement 17: Significant Adverse Impacts Prevention

There are stock assessments done for bottom fishing as well as for assessing the impacts of fishing gears on VMEs.³⁶⁵ There are no requirements for EIAs in place. This warrants the attribution of a yellow dot (Table 6.18).

Legal Requirement 18: Prevention of Alien Species Introduction

There are no measures in place for the prevention of alien species introduction, hence the attribution of a red dot (Table 6.18).

³⁶² CMM 2.03. Flag States members or cooperating non-members of SPRFMO are to prohibit their vessels from undertaking bottom fishing in the Convention Area (art 8b and art 10) and, in exceptional cases, to limit the bottom fishing catch to less than the 2002-2006 average levels (art 8c). Flag State vessels also have to stop any bottom fishing activities within five nautical miles of a VME (art 8g). Areas identified as VMEs will be closed to bottom fishing (art 22).

³⁶³ CMM 2.01; CMM 2.04.

³⁶⁴ CMM 2.03; CMM 2.04.

³⁶⁵ Ibid. Article 5 requests the Scientific Committee to notably undertake stock assessments of the targeted deep-sea species as well as possible bycatch species and assess the impacts of fishing gears on VMEs.








Legal Requirement 19: Identification and Monitoring

Scientific data must be collected for targeted stocks but there is no requirement to do so for biodiversity.³⁶⁶ Apart from targeted fish stocks, there is no requirement to identify components of biodiversity. This warrants the attribution of a yellow dot (Table 6.18).

6.5.2.4 Scientific Data

This section assesses the extent to which SPRFMO has implemented the global legal measures on scientific data outlined in Section 5.5 of Chapter 5. These measures on scientific data are presented by categories, as depicted in Figure 5.2 of Chapter 5.

Table 6.19: Implementation of Scientific Data Measures by SPRFMO³⁶⁷

<i>Legal Requirement</i>	<i>SPRFMO</i>
20. Data collection	
21. Data sharing	
22. Education and training	
23. Scientific criteria	
B) Collect complete and accurate fisheries data, ³⁶⁸ including for stock assessments as well as for the impacts that fishing has on non-target species ³⁶⁹	
D) Promote and conduct scientific research on straddling and migratory fish stocks ³⁷⁰	
E) Develop appropriate technologies for research on straddling and migratory fish stocks ³⁷¹	

Legal Requirement 20: Data Collection

There is a general requirement for SPRFMO members and cooperating non-members to collect data.³⁷² This includes annual catch data, data to assess the impacts of fishing on

³⁶⁶ CMM 2.02. This measure replaced 2013 CMM 1.03.

³⁶⁷ These legal requirements are described in detail in Section 5.5 of Chapter 5. Legal requirements 20 to 23 denote all the relevant legal provisions under international law. Legal requirements B, D and E are those that are directly aimed at institutions.

³⁶⁸ UNFSA art 5j, art 10d and art 10f; Code of Conduct art 7.4.4, art 8.1.3 and art 8.4.3.

³⁶⁹ UNFSA art 10d.

³⁷⁰ Ibid art 5k and art 10g.

³⁷¹ Ibid.

³⁷² CMM 2.02. This measure replaced 2013 CMM 1.03.

non-target and associated or dependent species, and data on landings and transshipment.³⁷³

Furthermore, States have to establish observer programmes aimed at collecting vessel, effort and catch data, biological data and other relevant scientific data and information as well as take relevant sample data.³⁷⁴ There is no specific provision for the collection of data for biodiversity, but as this global legal measure is a soft law provision under international law, this legal requirement is therefore attributed a green dot (Table 6.19).

Legal Requirement 21: Data Sharing

Member and cooperating non-member States have to share their data with the Commission.³⁷⁵ Non-confidential data is publicly available on SPRFMO's website. This warrants the attribution of a green dot (Table 6.19).

Legal Requirement 22: Education and Training

There are no legal requirements on education and training, hence the attribution of a red dot (Table 6.19).

Legal Requirement 23: Scientific Criteria

Data standards have been established and thorough templates are provided for use, hence the attribution of a green dot (Table 6.19).³⁷⁶

Legal Requirement B: Collect Complete and Accurate Fisheries Data, including for Stock Assessments as well as for the Impacts that Fishing has on Non-target Species

States are required to collect fisheries data, including annual catch data and data to assess the impacts of fishing on non-target and associated or dependent species, using the templates provided by SPRFMO.³⁷⁷ This warrants the attribution of a green dot (Table 6.19).

³⁷³ CMM 2.02 art 1.

³⁷⁴ Ibid art 2.

³⁷⁵ Ibid.

³⁷⁶ Ibid annexes 1-13.

³⁷⁷ Ibid.

Legal Requirement D: Promote and Conduct Scientific Research on Straddling and Migratory Fish Stocks

SPRFMO has been gathering information on different fish species that fall under its management. These include: Chilean jack mackerel (*Trachurus murphyi*), chub mackerel (*Scomber japonicus*), orange roughy (*Hoplostethus atlanticus*), alfonsino (*Beryx splendens*), bluenose (*Hyperoglyphe antarctica*), oreos (*Oreosomatidae*), black cardinalfish (*Epigonus telescopus*), jumbo flying squid (*Dosidicus gigas*), purple-back flying squid (*Sthenoteuthis oualaniensis*), neon flying squid (*Ommastrephes bartrami*), rock lobster (*Jasus caveorum*), and deepwater rock lobster (*Projasus parkeri*).³⁷⁸

However, scientific research is currently particularly focused on Chilean jack mackerel and on deep-water species.³⁷⁹ States have to establish observer programmes to collect biological data and other relevant scientific data and information, including taking sample data.³⁸⁰ This warrants the attribution of a green dot (Table 6.19).


Legal Requirement E: Develop Appropriate Technologies for Research on Straddling and Migratory Fish Stocks

There are no measures in place for this legal requirement, hence the attribution of a red dot (Table 6.19).

6.5.2.5 Marine Environmental Protection Measures

This section assesses the extent to which SPRFMO has implemented the global legal marine environmental protection measures outlined in Section 5.8 of Chapter 5. These marine environmental protection measures are presented by categories, as depicted in Table 5.14 of Chapter 5.

Table 6.20: Implementation of Marine Environmental Protection Measures by SPRFMO³⁸¹

<i>Legal Requirement</i>	<i>SPRFMO</i>
24. Protection of the marine environment	



³⁷⁸ See: www.southpacificrfmo.org/species-profiles/ (accessed: 29 August 2014).

³⁷⁹ The Scientific Committee of SPRFMO has created two working groups: the Jack Mackerel Working Group and the Deep-water Working Group.

³⁸⁰ CMM 2.02 art 2. This measure replaced 2013 CMM 1.03.

³⁸¹ These legal requirements are described in detail in Section 5.8 of Chapter 5.

Table 6.20 (continued)

<i>Legal Requirement</i>	<i>SPRFMO</i>
25. Marine pollution prevention	
26. Monitoring	

Legal Requirement 24: Protection of the Marine Environment

Apart from protective measures for VMEs, there are no current SPRFMO measures specifically targeting marine environmental protection.³⁸² There are no measures for the prevention or reduction of marine pollution, no measures for the protection of rare or fragile ecosystems and depleted, threatened or endangered species' habitats or other forms of marine life. There are furthermore no port State measures for the regulation of pollution and no requirement to undertake EIAs. This warrants the attribution of a yellow dot (Table 6.20).

Legal Requirement 25: Marine Pollution Prevention

There are no provisions on marine pollution prevention, hence the attribution of a red dot (Table 6.20).

Legal Requirement 26: Monitoring

There are no monitoring provisions other than the requirement to undertake environmental assessments for bottom fishing, hence the attribution of a yellow dot (Table 6.20).³⁸³

6.5.2.6 Compliance with SPRFMO Measures

The SPRFMO Compliance and Technical Committee (CTC) met for the first time in January 2014. In its assessment report, the CTC evaluated the compliance of SPRFMO members and cooperating non-members against the three conservation and management measures adopted at the first meeting of the SPRFMO Commission in 2013, namely 1) Conservation and Management Measure (CMM) for Chilean jack mackerel; 2) CMM for gillnets; and 3) data standards.³⁸⁴

³⁸² CMM 2.03.

³⁸³ Ibid.

³⁸⁴ SPRFMO, 'Assessment of Compliance of Members and CNCPs' (CTC-01-02, 2014); CMM 1.01; CMM 1.02; CMM 1.03; superseded by CMM 2.02 adopted in 2014.

All States complied fully with the requirements of the CMM for Chilean jack mackerel in relation to effort and catch management. However, most States did not comply fully with the data reporting requirements, which included late and/or incomplete report submissions and no data submissions, particularly in the case of data on fishing activities and the impacts on non-target species, vessel data as well as for landing and transshipment data.³⁸⁵ No States reported having undertaken bottom gillnet fishing or having carried these gears across the Convention Area, thus respecting the SPRFMO CMM in place for gillnets.³⁸⁶

6.6 Conclusion

International law provides for global legal provisions and measures to be implemented either through States directly or through a relevant institution, under States' duty to cooperate. In contrast, biodiversity measures under international law are very broad and, in general, there are no concrete hard law obligations to implement them. It is therefore up to the States party to the relevant instruments to adopt specific measures for the conservation of biodiversity. With the exception of LOSC Article 194(5) which refers to the protection and preservation of rare and fragile ecosystems and habitats of endangered species, marine environmental protection obligations under the LOSC mainly deal with marine pollution prevention, reduction and control. However, these broad general obligations under Part XII of the LOSC on Protection and Preservation for the Marine Environment have since been expanded through other legal instruments to include the application of the ecosystem approach, the conservation of VMEs and habitats as well as the use of the precautionary approach.

Although the three RFOs of the Southeast Pacific have incorporated in their conventions and implemented to some extent some of the global legal provisions on the conservation of biodiversity described at the beginning of this chapter, they are mainly focused, as would be expected, on the management of target fish stocks within their Convention Areas. Biodiversity is somewhat taken into account through the legal provisions on associated and dependent species, bycatch mitigation measures as well as the application of the ecosystem and precautionary approaches. However, these provisions are limited and not necessarily implemented in practice as these

³⁸⁵ SPRFMO, 'Assessment of Compliance of Members and CNCPs' (CTC-01-02, 2014), 4-9.

³⁸⁶ Ibid 6.

organisations focus mainly on target stocks. Interestingly, these three organisations covered many of the legal provisions aimed specifically at individual States rather than institutions, which shows that States are willing to use the institutional setting of RFMOs as means to coordinate their legal obligations at the regional level. Most of the legal requirements directed at institutions were also partially to fully met by the three organisations. Overall, SPRFMO was the organisation which most met the global legal requirements, followed by CPPS (although its provisions are implemented within national jurisdiction only). Although IATTC recently updated its 1949 Convention, its legal provisions are not fully consistent with all the legal instruments relevant to biodiversity conservation.

In terms of the actual implementation of legal requirements by the three regional organisations, the main focus lies on catch and fishing effort limitations for target fish stocks. Interestingly, bycatch is one of the issues looked at in some detail and is the main contributor to the expansion of the management and conservation duties of these regional organisations to species other than target fish stocks. The main underlying issue regarding the implementation of global legal requirements is the lack of compliance with and enforcement of measures adopted by the organisations.

7 OPTIONS AND RECOMMENDATIONS TO STRENGTHEN INSTITUTIONAL COOPERATION AND HIGH SEAS BIODIVERSITY CONSERVATION IN THE SOUTHEAST PACIFIC

7.1 Introduction

This chapter summarises and reviews the outcomes of the analyses performed in Chapters 4, 5 and 6 on inter-institutional cooperation and the incorporation of high seas biodiversity conservation obligations into regional fisheries management organisations' (RFMOs) mandates. It presents the main challenges and opportunities identified in the conservation of high seas biodiversity for the Southeast Pacific region. The analysis undertaken in Chapter 4 identified cooperation and collaboration challenges and opportunities while the analysis undertaken in Chapters 5 and 6 identified conservation challenges and opportunities, including challenges related to compliance with and enforcement of management measures adopted by the three regional institutions. Challenges identify problems within the region that affect or are likely to affect institutional cooperation and the conservation of high seas biodiversity. Conversely, opportunities denote positive aspects that have an overall benefit for the region or that can be used to manage these identified challenges. Listed in no particular order and independently of their perceived importance or severity, the challenges and opportunities presented in this chapter follow the general structure of this thesis.

This chapter further discusses options and provides recommendations on how to strengthen institutional cooperation and high seas biodiversity conservation in the Southeast Pacific. The independent expert panel established by Chatham House to develop a model for improved governance by RFMOs provided the following definition of a good RFMO: it 'will (a) require that more be done to conserve and manage the stocks at an optimum level than States would otherwise be inclined to do, (b) create incentives for States to participate, and (c) create incentives for parties to comply'.¹ Adopting a similar approach, the options and recommendations provided below are divided into two sections: a) the ones necessary to improve institutions' and States' cooperation in the region and b) the ones necessary to improve the conservation of high

¹ Michael W Lodge et al, 'Recommended Best Practices for Regional Fisheries Organizations: Report of an independent panel to develop a model for improved governance by Regional Fisheries Management Organizations' (Report, Chatham House, 2007) x.

seas biodiversity, including ways to improve States' compliance and enforcement of such measures.

7.2 Cooperation, Coordination and Collaboration Challenges between the three Regional Institutions

The analysis performed in Chapter 4 show that there is limited interaction and collaboration between the Inter-American Tropical Tuna Commission (IATTC), the Comisión Permanente del Pacífico Sur (CPPS) and the South Pacific Regional Fisheries Management Organisation (SPRFMO). There is limited participation of these three institutions at each other's meetings and, to date, no memorandum of understanding (MoU) or memorandum of cooperation (MoC) has been signed between them or discussed at Commission meetings.

Although IATTC and CPPS have informally cooperated, there is no concrete evidence of collaboration in information and data exchanges between the three institutions.² Both IATTC and CPPS have entered into collaborative partnerships with other global or regional institutions, of particular note are their partnership with the Western and Central Pacific Fisheries Commission (WCPFC) and with the *Agreement on the Conservation of Albatrosses and Petrels* (ACAP) for IATTC.

CPPS does not have any legal provisions in its conventions on cooperation with other institutions but it has signed 32 MoUs to date with other universities, international organisations and programmes, and financial and scientific institutions, including with the Food and Agriculture Organization (FAO), the *Convention on Biological Diversity* (CBD), the Secretariat of the South Pacific Regional Environment Programme (SPREP), the International Maritime Organization (IMO) and the Organización del Sector Pesquero y Acuícola del Istmo Centroamericano (OSPESCA).

SPRFMO and IATTC have cooperation provisions in their conventions, which extend beyond fisheries organisations in the case of SPRFMO. Such provisions and signing of MoUs show a willingness on behalf of the three institutions to collaborate and cooperate

² See, eg: Clifford L Peterson and William H Bayliff, 'Organization, Functions, and Achievements of the Inter-American Tropical Tuna Commission' (Special Report 5, IATTC, 1985) 27; William H Bayliff, 'Organization, Functions, and Achievements of the Inter-American Tropical Tuna Commission' (Special Report 13, IATTC, 2001) 42.

with other global and regional institutions. As SPRFMO is a newly established organisation, it is possible that such cooperative interaction with other institutions, including IATTC and CPPS, will take some time to develop.

Another challenge is the unclear geographical scope and advisory nature of CPPS. Its competency to promote the conservation of marine living resources in marine areas beyond national jurisdiction (ABNJ) is included in its 2013 statute but the extent to which this competency applies is not described.³ In addition, CPPS' competency to prevent, reduce and control marine pollution as prescribed by the 1981 *Convention for the Protection of the Marine Environment and Coastal Area of the Southeast Pacific* extends to adjacent high seas areas that are impacted by marine pollution but in this case again, the extent of this competency is not clearly described in the convention.⁴

As the *Framework Agreement for the Conservation of Living Marine Resources on the High Seas of the South Pacific* (Galapagos Agreement) adopted by CPPS in 2000 to extend its mandate to the high seas of the Southeast Pacific is not in force and given CPPS' focus on the promotion of linkages between marine scientific research and the development and harmonisation of regional policies, CPPS' scope in terms of marine living resources conservation and marine environmental protection remains therefore predominantly within the national jurisdiction of its member States.⁵

Nevertheless, this ambiguity in scope can be an issue when considering ways for these institutions to collaborate and cooperate. In contrast to IATTC and SPRFMO, CPPS has an advisory mandate to promote the conservation of marine living resources and the protection of the marine environment within the jurisdiction of its member States.⁶ Although all non-disputed resolutions adopted by CPPS are binding on its member

³ *Estatuto sobre Competencias y Estructura de la Comisión Permanente del Pacífico Sur* [Statute on Competency and Structure of the Permanent Commission for the South Pacific] (2013) ('*CPPS Estatuto*') art 4.

⁴ *Convenio para la Protección del Medio Marino y la Zona Costera del Pacífico Sudeste* [Convention for the Protection of the Marine Environment and Coastal Area of the Southeast Pacific], opened for signature 12 November 1981 (entered into force 19 May 1986) ('*CPPS Marine Environmental Protection Convention*') art 1. This lack of clarity in the convention can sometimes be the result of the compromise text obtained through tough negotiations being deliberately vague and open to interpretation.

⁵ *Acuerdo Marco para la Conservación de los Recursos Vivos Marinos en la Alta Mar del Pacífico Sudeste* ('*Acuerdo de Galápagos*') [Framework Agreement for the Conservation of Living Marine Resources on the High Seas of the South Pacific], opened for signature 14 August 2000 (not yet in force) ('*CPPS Galapagos Agreement*').

⁶ *Convenio sobre Organización de la Comisión Permanente de la Conferencia sobre Explotación y Conservación de las Riquezas Marítimas del Pacífico Sur* [Convention on the Organisation of the Permanent Commission of the Conference on Exploitation and Conservation of Marine Resources of the South Pacific], opened for signature 18 August 1952 (entered into force 6 May 1955) ('*CPPS Organisation Convention*') art 4.

States, it allows them to object to a resolution and hence not be bound by it.⁷ This advisory mandate can therefore limit its management capabilities over its area of competency.

All three institutions use their own scientific information as their knowledge base. There is no external or common scientific institution providing independent scientific information and assessments for the Southeast Pacific, as is the case in the North Atlantic through the International Council for the Exploration of the Sea (ICES) and in the North Pacific through the North Pacific Marine Science Organization (PICES). However, there are several provisions in their conventions on data collection, involving target and non-target species, and also on vessels, landings and transshipments, and data exchange, which could create collaboration and cooperation links in the future.

Regarding the scientific data collected, there does not seem to be an overlap or much duplication in data gathering between the three regional institutions. The main focus remains on target fish species for IATTC and SPRFMO, hence tuna and tuna-like species, and non-highly migratory species, respectively. IATTC mainly focuses on yellowfin, bigeye, bluefin, albacore and skipjack tuna while SPRFMO currently focuses on gathering data for Chilean jack mackerel and targeted deep-sea species.⁸ Both IATTC and SPRFMO are also obliged to gather scientific data on bycatch species, including sharks, seabirds and sea turtles.⁹

⁷ Ibid.

⁸ IATTC, 'Amendment to Resolution C-11-01 on Tuna Conservation' (C-12-01, 2012) provides temporal and spatial closure areas for yellowfin, bigeye and skipjack tuna fisheries. IATTC, 'Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean during 2014-2016' (C-13-01, 2013) also provides spatial and temporal conservation measures for yellowfin, bigeye and skipjack tuna. IATTC, 'Conservation and Management Measures for Bluefin Tuna in the Eastern Pacific' (C-12-09, 2012) and IATTC, 'Measures for the Conservation and Management of Bluefin Tuna in the Eastern Pacific Ocean' (C-13-02, 2013) impose limitations on commercial catches of bluefin tuna for the years 2012 to 2014. IATTC, 'Resolution on Northern Albacore Tuna' (C-05-02, 2005) imposes limitations on the fishing effort of North Pacific albacore tuna. Two working groups have been established under SPRFMO's Scientific Committee: the Jack Mackerel Working Group and the Deep-water Working Group.

⁹ IATTC, 'Consolidated Resolution on Bycatch' (C-04-05 Rev 2, Revised, 2004) requests States to release non-target species, to develop measures/techniques to release sea turtles, billfish, sharks and rays and to find ways to modify the design of fish aggregating devices (FADs) to eliminate sea turtle entanglement. IATTC, 'Resolution on the Conservation of Oceanic Whitetip Sharks Caught in Association with Fisheries in the Antigua Convention Area' (C-11-10, 2011) requires States to prohibit retaining onboard, transshipping, landing, storing, selling or offering for sale oceanic whitetip sharks. IATTC, 'Resolution on the Conservation of Sharks Caught in Association with Fisheries in the Eastern Pacific Ocean' (C-05-03, 2005) encourages States to establish and implement a national plan of action for the conservation of sharks. It also requires States to fully utilise shark catches, to have no more than 5 per cent of the weight of sharks as fins onboard. It furthermore encourages the release of live sharks and requests the prohibition to board, tranship, land or trade any fins harvested in contravention of this resolution. IATTC, 'Resolution to Mitigate the Impact of Tuna Fishing Vessels on Sea Turtles' (C-07-03, 2007) requests States to implement FAO Guidelines to reduce bycatch, injury and mortality of sea turtles. States are also to implement observer programmes and apply measures/techniques to avoid turtle bycatch and to release them. IATTC, 'Resolution to Mitigate the Impact on Seabirds of Fishing for Species Covered by the IATTC' (C-11-02, 2011) requests States to report to the IATTC on their implementation of the *United Nations Food and Agriculture Organization*, 'International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries' (1999) ('*IPOA-Seabirds*'). Longline vessels of more than 20 metres in length have to use at least two mitigation measures when fishing in the designated area. Other vessels are encouraged to use at least one measure. States are also encouraged to establish national programmes to place observers on fishing vessels and to adopt measures to release seabirds alive.

CPPS encourages the conduct of scientific research on marine resources, particularly fisheries, within the national jurisdiction of its member States as well as undertaking climatic and socio-economic studies.¹⁰ It is to be noted that IATTC has no general provision on data sharing with other institutions and, although it could still implement and apply this without having such a provision in its convention, it will be important for future cooperation that IATTC recognises the importance and benefits of such data sharing mechanisms. SPRFMO also requests its member States to establish observer programmes to collect relevant data.

State membership of RFMOs and of global treaties represents only a minor challenge for this region. As noted in Section 4.6.3 of Chapter 4, all but two States that are currently fishing in the Southeast Pacific region are members of the correct RFMO for their reported fish catch (see also Appendix A). Furthermore, as States currently fishing in the Southeast Pacific that are not Parties to the *United Nations Law of the Sea Convention* (LOSC) or the *United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks* (UNFSA) are members of either IATTC or SPRFMO, they are indirectly bound by LOSC and UNFSA provisions.¹¹

Consequently, there are currently no identified third States for this region. While this implies that there should be no issues with free-riders, this thesis has not analysed the extent to which non-UNFSA or non-LOSC Parties may influence decisions adopted by and the decision making of the RFMOs.¹² Since 58 per cent of IATTC member and cooperative non-member States and 42 per cent of SPRFMO member States are non-parties to the LOSC and/or UNFSA, such an influence may well be present.

SPRFMO adopted a series of seabird mitigation measures that have to be used when using demersal longlines (SPRFMO, 'Conservation and Management Measure for Minimising Bycatch of Seabirds in the SPRFMO Convention Area' (CMM 2.04, 2014) ('CMM 2.04') art 1 and annex 1) or trawl gear (art 2 and annex 2). Captured or entangled seabirds (art 6) have to be released and States have to report all seabird encounters to the SPRFMO Secretariat (art 7).

¹⁰ *CPPS Estatuto* art 4a, art 4e and art 4l; *Reglamento de la Comisión Permanente del Pacífico Sur Personal Internacional de la CPPS* [Rules of the Permanent Commission for the South Pacific CPPS] (2013) ('*CPPS Reglamento*') art 3. This is CPPS' second strategic objective.

¹¹ Current fishing States not parties to the LOSC are: Colombia, Peru and Venezuela. Current fishing States not parties to the UNFSA are: Chile, China, Colombia, Ecuador, Guatemala, Mexico, Nicaragua, Peru, Vanuatu, and Venezuela. In the case of Chile, the incomplete membership cannot be accurately assessed from the FAO data. Since Chile only caught a very small percentage of tuna species in 2012, it can be argued that Chile's membership should be reviewed if that percentage of tuna and tuna-like species were to become more significant within its total catch. At this stage, it can be argued that, although Chile is not a party to the UNFSA, it is bound by the legal provisions under SPRFMO, which is the right body for the type of fish this State catches. See Section 4.6.3 of Chapter 4 and Appendix A for more information on the membership analysis.

¹² Ted L McDorman, 'Implementing Existing Tools: Turning Words into Actions – Decision-Making Processes of Regional Fisheries Management Organisations (RFMOs)' (2005) 20(3) *The International Journal of Marine and Coastal Law* 423.

The Southeast Pacific region also presents opportunities for cooperation and collaboration between regional institutions. The extent of the IATTC, CPPS and SPRFMO's Convention Areas over the Southeast Pacific provides an extensive geographical coverage of the FAO Statistical Area No. 87. Only a small area of the northern part and the southern part of the Southeast Pacific region are not fully covered by IATTC and SPRFMO and thus these two areas have a somewhat less extensive management coverage than the rest of the Southeast Pacific region.¹³ Nonetheless, these areas are small in comparison to the overall regional coverage provided by these three institutions. Also, both marine areas within national jurisdiction, through CPPS and IATTC, and the high seas, through IATTC and SPRFMO, are included, providing comprehensive geographical coverage of the Southeast Pacific region.¹⁴

Both IATTC and SPRFMO have a management mandate, for the management of tuna and tuna-like species and for non-highly migratory species respectively. CPPS is both a regional fisheries organisation (RFO) and the Executive Secretariat for the Southeast Pacific regional seas programme (RSP), hence has an advisory mandate to promote the conservation of marine living resources and marine environmental protection within its Convention Area. This provides for a complementary scope and ensures that there are no direct overlapping competences between these three regional institutions.

The institutional structure, through these important and unique characteristics, provides a good basis for the management and conservation of high seas biodiversity and represents a potent opportunity for the institutions to cooperate and advance in the conservation of high seas biodiversity. Appendix E provides a summary table of identified opportunities and challenges in collaboration for inter-institutional cooperation.

¹³ See Figure 4.7 in Chapter 4.

¹⁴ Although CPPS' vision of an integrated approach to marine management embodies the same concerns expressed in the 1952 *Santiago Declaration* of being able to apply its strategy outside of national jurisdiction to the Pacific basin (CPPS *Estatuto* art 2), CPPS' legal competence remains within the limits of national jurisdiction of its member States in terms of resource management and policy development. However, for the protection of the marine environment, the jurisdiction of CPPS extends beyond national jurisdiction to those parts of the high seas that could be affected by marine and coastal pollution (CPPS *Marine Environmental Protection Convention* art 1).

Convention for the Strengthening of the Inter-American Tropical Tuna Commission established by the 1949 Convention between the United States of America and the Republic of Costa Rica, opened for signature 27 June 2003 (entered into force 27 August 2010) ('IATTC *Antigua Convention*') art 3 defines the limits of jurisdiction of the agreement as: 'i. the 50°N parallel from the coast of North America to its intersection with the 150°W meridian; ii. The 150°W meridian to its intersection with the 50°S parallel; iii. The 50°S parallel to its intersection with the coast of South America'.

7.3 Options and Recommendations for Improved Cooperation and Collaboration between the three Regional Institutions

The duty to cooperate is one of the main duties of States for the management and conservation of high seas living resources.¹⁵ As underscored in Chapter 2, regional cooperation is a key requirement for the successful management, conservation and sustainable use of marine biodiversity in ABNJ.¹⁶ Such cooperation and coordination between States, institutions, sectors and regimes is critical for integrated ocean management, especially when considering the cross-cutting nature of marine biodiversity.¹⁷ Particularly regional cross-sectoral cooperation, through coordinated efforts and political will, can ensure the full implementation of existing legal instruments and can positively influence the conservation and sustainable use of biodiversity in ABNJ.¹⁸

There are no legal prescriptions as to how cooperation is to be exercised by States other than the requirement for States to cooperate in the conservation and management of high seas living resources and to establish conservation measures under the LOSC.¹⁹ Establishing RFOs for this purpose is a partial fulfilment of this cooperation duty but there is no legal obligation for RFMOs or regional seas organisations (RSOs) to work

¹⁵ See Chapter 3.

¹⁶ See, eg: Kristina M Gjerde et al, 'Options for Addressing Regulatory and Governance Gaps in the International Regime for the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction' (IUCN Environmental Policy and Law Papers Online Marine Series No 2, IUCN, 2008); Rosemary Rayfuse and Robin Warner, 'Securing a Sustainable Future for the Oceans Beyond National Jurisdiction: The Legal Basis for an Integrated Cross-Sectoral Regime for High Seas Governance for the 21st Century' (2008) 23(3) *The International Journal of Marine and Coastal Law* 399; Elisabeth Druel et al, 'Governance of Marine Biodiversity in Areas Beyond National Jurisdiction at the Regional Level: Filling the Gaps and Strengthening the Framework for Action. Case Studies from the North-East Atlantic, Southern Ocean, Western Indian Ocean, South West Pacific and the Sargasso Sea' (IDDRI Study No 04/12, IDDRI, 2012); Jeff A Ardron et al, 'The Sustainable Use and Conservation of Biodiversity in ABNJ: What Can Be Achieved Using Existing International Agreements?' (2014) 49 *Marine Policy* 98; Julien Rochette et al, 'The Regional Approach to the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction' (2014) 49 *Marine Policy* 109; Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 30 June 2011 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/66/119, United Nations General Assembly, 66th sess, Item 77(a) of the preliminary list (30 June 2011) ('2011 BBNJ Report').

¹⁷ Juan Manuel Gómez-Robledo and Philip D. Burgess, *Report of the Ad Hoc Open-ended Informal Working Group to Study Issues Relating to the Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction*, A/61/65, United Nations General Assembly, 61st sess, Item 69(a) of the preliminary list (20 March 2006) ('2006 BBNJ Report') para 53; Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 16 March 2010 from the Co-Chairpersons of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/65/68, United Nations General Assembly, 65th sess, Item 75(a) of the preliminary list (17 March 2010) ('2010 BBNJ Report') para 48; Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 8 June 2012 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/67/95, United Nations General Assembly, 67th sess, Item 76(a) of the preliminary list (13 June 2012) ('2012 BBNJ Report') para 13.

¹⁸ Juan Manuel Gómez-Robledo and Robert Hill, *Letter dated 15 May 2008 from the Co-Chairpersons of the Ad Hoc Open-ended Informal Working Group to Study Issues Relating to the Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction Addressed to the President of the General Assembly*, A/63/79, United Nations General Assembly, 63rd sess, Item 73 of the preliminary list (16 May 2008) ('2008 BBNJ Report') para 22; 2011 BBNJ Report para 56; 2012 BBNJ Report para 21; R Warner, K M Gjerde and D Freestone, 'Regional Governance for Fisheries and Biodiversity' in Serge M Garcia, Jake Rice and Anthony Charles (eds), *Governance of Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution* (Wiley-Blackwell, 2014) 211; Rochette et al, above n 16.

¹⁹ See Section 3.3.2.4 of Chapter 3.

together, outside of recommendations by the international community.²⁰ Since the content of this duty to cooperate is not specified in the LOSC or other instruments such as the CBD, States can choose the ways and means of collaboration. This can include inter-RFMO cooperation, as for example the collaboration between tuna RFMOs through the Kobe Process, as well as through RFMO-RSO cooperation, as is the case for instance in the North-East Atlantic with the Commission for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) and the North East Atlantic Fisheries Commission (NEAFC).

Given the scale of the region and the migratory nature of many marine species, one institution alone cannot adequately conserve high seas biodiversity. Not only is cooperation important to ensure the financial viability of these regional management institutions but also to ensure that a cooperative compliance and enforcement scheme can be adopted to ensure a large-scale conservation and management approach to high seas biodiversity.

The use of a range of institutional cooperative mechanisms is a fundamental prerequisite in achieving effective high seas biodiversity conservation.²¹ These include the signing of MoUs to clarify institutions' competences, regular contact between institutions' secretariats, cooperation between institutions' committees, meeting participation, and the development of a common science platform.²² Research undertaken by the independent expert panel under Chatham House shows that, by cooperating and collaborating, neighbouring RFMOs are able to merge their financial, technological and human resources in activities, such as scientific research, monitoring, compliance and enforcement, to better achieve their objectives.²³ Also, such cooperation can contribute to deterring free-riders and to avoiding the duplication of work.²⁴

²⁰ *United Nations Convention on the Law of the Sea*, opened for signature 10 December 1982, ATS 31 (entered into force 16 November 1994) ('LOSC') art 118; *United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, opened for signature 8 September 1995, ATS 8 (entered into force 11 December 2001) ('UNFSA') art 8.5; 2010 BBNJ Report para 44.

²¹ See, eg: Karen N Scott, 'Transboundary Environmental Governance and Emerging Environmental Threats: Geo-engineering in the Marine Environment' in Robin Warner and Simon Marsden (eds), *Transboundary Environmental Governance: Inland, Coastal and Marine Perspectives* (Ashgate Publishing, 2012) 223; 2006 BBNJ Report para 51, para 53 and annex I para 13; 2008 BBNJ Report para 22 and para 24; 2010 BBNJ Report para 12, para 13, para 48 and para 49.

²² Ingrid Kvalvik, 'Managing Institutional Overlap in the Protection of Marine Ecosystems on the High Seas. The Case of the North East Atlantic' (2012) 56 *Ocean & Coastal Management* 35; 2010 BBNJ Report para 49.

²³ Lodge et al, above n 1, 18.

²⁴ Ibid x; Kvalvik, above n 22; Eric Neumayer, 'How Regime Theory and the Economic Theory of International Environmental Cooperation Can Learn From Each other' (2001) 1(1) *Global Environmental Politics* 122, 137-138; Sebastian Oberthür, 'Interplay Management: Enhancing Environmental Policy Integration among International Institutions' (2009) 9 *International Environmental*

As noted by Neumayer, there needs to be an incentive for States to cooperate within a region and outside of their respective RFMO memberships. Particularly, a fair procedure needs to be applied, whereby States can expect the same gains or losses, in order for them to enter into cooperative arrangements.²⁵ Also, there must be an interest on the part of States in the sustainability of common resources for them to expect higher benefits from cooperation than the costs linked to it.²⁶ As emphasised by Ostrom et al, 'reciprocal cooperation can be established, sustain itself, and even grow if the proportion of those who always act in a narrow, self-interested manner is initially not too high'.²⁷

The Southeast Pacific region shows a jurisdictional overlap between the three institutions.²⁸ Although their mandates are different, their geographic scopes overlap and IATTC and SPRFMO both have legal provisions on bycatch species, particularly sharks, seabirds and sea turtles. Such jurisdictional overlap may lead to the adoption of incoherent and contradictory measures between institutions and hence their ineffective implementation, duplication of work and can even cause conflict.²⁹ It is also important to note that one institution's managed species can potentially become bycatch species of the other and therefore collaboration will not only help to apply an ecosystem approach to the management of the region but also to reduce the costs linked with managing such a broad area.

Working on institutional interactions and coordination as well as policy integration can positively enhance institutional interplay.³⁰ Indeed, synergistic overlaps generally occur between coordinating institutions and institutions working on similar issues or with similar scopes.³¹ As highlighted by Oberthür, interplay management requires an 'awareness of and reflection upon the interaction' and 'deliberate efforts by any relevant

Agreements 371; Olav Schram Stokke, 'The Interplay of International Regimes: Putting Effectiveness Theory to Work' (FNI Report 14/2001, The Fridtjof Nansen Institute, 2001); Karen N Scott, 'International Environmental Governance: Managing Fragmentation Through Institutional Connection' (2011) 12 *Melbourne Journal of International Law* 177.

²⁵ Neumayer, above n 24, 137-138.

²⁶ Elinor Ostrom et al, 'Revisiting the Commons: Local Lessons, Global Challenges' (1999) 284 *Science* 278, 281.

²⁷ *Ibid* 279.

²⁸ A jurisdictional overlap 'occurs where two or more statutes or regulations govern some aspect of the same resource or activity in the same geographic space' (Julia A Ekstrom et al, 'A Tool to Navigate Overlaps in Fragmented Ocean Governance' (2009) 33 *Marine Policy* 532).

²⁹ Kvalvik, above n 22; Oberthür, above n 24; Stokke, above n 24; Scott, above n 24.

³⁰ Oberthür, above n 24.

³¹ G Kristin Rosendal, 'Impacts of Overlapping International Regimes: The Case of Biodiversity' (2001) 7 *Global Governance* 95; Stokke, above n 24.

actor, or group of actors, in whatever form or forum to address and improve institutional interaction and its effects'.³²

Although there do not seem to be large and obstructive jurisdictional and geographic overlaps in this region, as high seas biodiversity conservation is not fully included in the mandate of any of these institutions, it is important to address this issue through the adoption of cooperative mechanisms. As argued by Scott with the comparable issue of geo-engineering regulation, creating formal linkages and interactions between institutions is one mechanism, which can improve the governance of issues for which a legally binding agreement does not yet exist.³³ Working on cooperative mechanisms within existing institutions, such as through the exchange of information, providing a forum for discussion and the promotion and management of work programmes, allows for low resource levels to be used and avoids more contentious political issues that can take place in higher stages of cooperation. It also provides a basis for further cooperative developments, of a political or governance regime nature.³⁴

When tackling biodiversity conservation, particularly on the high seas, a multidisciplinary and complementary approach to management is necessary. With one tuna and one non-tuna RFMO working in this region, collaboration and cooperation between them can provide a good basis for a better overall conservation of high seas biodiversity. Since IATTC and SPRFMO are complementary and are both RFMOs, their duty to cooperate seems self-evident. A question remains over the role of CPPS in this regional institutional triangle. Given its different scope, CPPS is unlikely to be a key institution in promoting the conservation of high seas biodiversity in the region; however, as will be shown below, CPPS could still play an important role as the link between the South American coastal States and the RFMOs and their member States, and as a scientific body.

As categorised by Scott, there are three forms of cooperative institutional interplay: a) formal institutional cooperation through the establishment of MoUs or MoCs; b) integrated institutional management; and c) integrated political management.³⁵

³² Oberthür, above n 24, 373.

³³ Scott, above n 21, 239 and 246.

³⁴ Ibid 246.

³⁵ Scott, above n 24.

Therefore, options to increase the proactive cooperation and collaboration between the institutions of the Southeast Pacific can be of a scientific, institutional and/or legal nature, as outlined below.

In her analysis of the institutional interplay between OSPAR and NEAFC in the North-East Atlantic, Kvalvik identified three important lessons learnt: a) the need to include the ecosystem approach in institutions' mandate; b) the need to clarify each institution's competence regarding the protection of high seas ecosystems through, for instance, a MoU; and c) the establishment of a formal framework to facilitate inter-institutional cooperation. The outcome of this analysis also suggests that cooperation of an institutional and legal nature is particularly important.³⁶

7.3.1 Cooperation under Differing Membership

As outlined in Chapter 4, there are not many common member States between SPRFMO and IATTC.³⁷ These only represent 28.6 per cent of IATTC's membership and 46.15 per cent of SPRFMO's overall membership. As CPPS has a closed membership with only the coastal States of the Southeast Pacific as members, it does not share many member States with IATTC and SPRFMO. The membership similarity between institutions of the Southeast Pacific region is therefore different from the situation in the North-East Atlantic region where NEAFC and OSPAR share all but one member State.³⁸

Matz-Lück and Fuchs have attributed this membership commonality in the North-East Atlantic region as having benefitted the level and advances in regional cooperation that have occurred but a study by Kvalvik on the same region concluded that an overlapping core institutional membership does not necessarily result in a higher inter-institutional cooperation.³⁹ Kvalvik emphasises that, rather than an overlapping institutional membership, inter-institutional interaction and coordination between regional and

³⁶ Kvalvik, above n 22.

³⁷ See Section 4.6.3, and particularly Table 4.1, of Chapter 4.

³⁸ Only two countries (Russian Federation and Switzerland) are not members of both institutions. See: K Hoydal, D Johnson, and A H Hoel, 'Regional Governance: The Case of NEAFC and OSPAR' in Serge M Garcia, Jake Rice and Anthony Charles (eds), *Governance of Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution* (Wiley-Blackwell, 2014) 225.

³⁹ Nele Matz-Lück and Johannes Fuchs, 'The Impact of OSPAR on Protected Area Management Beyond National Jurisdiction: Effective Regional Cooperation or a Network of Paper Parks?' (2014) 49 *Marine Policy* 155; Kvalvik, above n 22.

international institutions and appropriate coordination at the national level is required for the successful management of ABNJ.⁴⁰

While a fully overlapping institutional membership may not be entirely required, the fact that the membership of States between the institutions in the Southeast Pacific is not similar will affect the extent of cooperation possible. In this regard, Scott notes several risks associated with institutional interplay management.⁴¹ In particular, when a State is not a member of the institution or party to the regime with whom its current institution or regime is signing a cooperative agreement, there is a risk that the State will become unwillingly affiliated with this institution or regime and will therefore implicitly be subject to its obligations. While an increasing participation between institutions and regimes may have positive effects for the State, it could also possibly lead to the withdrawal of an objecting State from the cooperating regime.⁴² Therefore, cooperation on the conservation of high seas biodiversity in the Southeast Pacific even under differing institutional membership is possible but certain risks and constraints need to be taken into account.

7.3.2 Cooperation through Agreement

As an initial form of cooperative institutional interplay, the three regional institutions could sign a MoU or MoC, which would help to clarify each institution's competence towards high seas biodiversity conservation and detail the extent and outcomes of such proposed collaboration on this issue.⁴³

A good example of this form of cooperation can be found in the North-East Atlantic region where NEAFC, a RFMO, and OSPAR, a RSO, signed a MoU in 2008 to 'promote mutual cooperation towards the conservation and sustainable use of marine biological diversity including protection of marine ecosystems'.⁴⁴ This MoU particularly aims to allow for the 'free flow of mutually useful information (including data)'; to 'discuss jointly their respective concerns over the management of human

⁴⁰ Kvalvik, above n 22.

⁴¹ See Section 4.5.3 of Chapter 4.

⁴² Scott, above n 24.

⁴³ Ibid.

⁴⁴ Commission established by the *Convention for the Protection of the Marine Environment of the North-East Atlantic*, opened for signature 22 September 1992, 32 ILM 1072 (entered into force 25 March 1998); *Memorandum of Understanding between the North East Atlantic Fisheries Commission (NEAFC) and the OSPAR Commission* (2008) ('MoU NEAFC-OSPAR') <www.ospar.org/html_documents/ospar/html/mou_neafc_ospar.pdf> (accessed: 3 January 2015)> art 1.

activities that impact on the marine environment and the living marine resources (...) and possible actions and measures to address them'; 'to develop a common understanding of the application of the precautionary approach/principle'; 'to cooperate regarding marine spatial planning and area management'; to 'encourage the funding and conduct of marine science'; to 'establish reciprocal observer arrangements'; to distribute reciprocal meeting reports; and to maintain working relations between the two Commissions 'at an appropriate level, complemented by review meetings'.⁴⁵ NEAFC and OSPAR have also signed MoUs with other institutions working on the North-East Atlantic, including the International Seabed Authority (ISA), IMO and ICES.⁴⁶

Another example is provided by the Sargasso Sea experience, where the 2014 soft law *Hamilton Declaration on Collaboration for the Conservation of the Sargasso Sea* provides a cooperative basis for interested States to build ways forward for the protection of the Sargasso Sea. It is likely that, in order to develop and strengthen collaborative partnerships in this region, the Sargasso Sea Commission will also be investigating the development of collaborative proposals with relevant regional or international organisations, such as IMO or FAO.⁴⁷

Establishing such collaboration and cooperation for the Southeast Pacific through the signing of MoUs might be more difficult than in the North-East Atlantic, given the difference in membership between RFMOs. However, with the pooled financial, technical and human resources of all three institutions, it would be a cost-effective solution that would assist in achieving better high seas biodiversity conservation and more effective governance through the use of cooperative mechanisms, particularly between IATTC and SPRFMO for high seas fisheries resources. It would establish a formal framework within which work and responsibility distribution would be clearly outlined and the institutions' competence in the management, conservation and sustainable use of marine biodiversity in ABNJ clarified.

⁴⁵ *MoU NEAFC-OSPAR* art 1a, art 1b, art 1c, art 1d, art 1e, art 1g, art 1h, art 1i, and art 2.

⁴⁶ See Section 2.7.1 of Chapter 2 and Section 4.5.4 of Chapter 4.

⁴⁷ *Hamilton Declaration on Collaboration for the Conservation of the Sargasso Sea* (2014) < http://www.sargassoalliance.org/storage/documents/Hamilton_Declaration_on_Collaboration_for_the_Conservation_of_the_Sargasso_Sea.with_signatures.pdf> (accessed: 1 March 2015) art 8.

As shown in the analyses in previous chapters and as demonstrated in the case of CPPS, it is not essential for these institutions to have legal provisions on cooperation in their conventions in order for them to establish cooperative relationships.⁴⁸ However, in the long term, updating their respective conventions or adopting relevant resolutions on cooperation will be important to ensure the ongoing legal basis for cooperation.

Cooperative mechanisms adopted through MoUs or MoCs can be more basic in nature, such as establishing information exchange procedures and the participation at each other's meetings, or more advanced, such as the establishment of joint work programmes, joint reporting mechanisms and joint liaison positions.⁴⁹ This region would particularly benefit from scientific cooperation (see Section 7.3.3 of this chapter), as well as cooperation on management measures (see Section 7.5 of this chapter) and on compliance and enforcement (see Section 7.7 of this chapter). Such cooperation would help to harmonise measures across RFMOs in the region and help ensure that States that are not members of both IATTC and SPRFMO do not undermine the management and conservation measures put in place by each institution.⁵⁰

Given that CPPS is an advisory body for its member States and has a closed membership, its role in the Southeast Pacific will mainly relate to marine biodiversity within the national jurisdiction of its contracting parties. Nevertheless, it would benefit the region if CPPS could sign MoUs of scientific cooperation with IATTC and SPRFMO in order to establish a scientific information and data exchange – even a monitoring programme – to ensure that environmental and climatic data complementary and necessary to fisheries management and biodiversity conservation are shared between the three institutions as part of the ecosystem approach to management (see Section 7.3.3 of this chapter).

Also, there is a need for the region to consider ways of better implementing environmental protection, prevention, reduction and control of marine pollution and the management of other human activities impacting on marine biodiversity.⁵¹ It is within IATTC's and SPRFMO's mandates to take an ecosystem approach to management.

⁴⁸ See Section 4.6.5.2 of Chapter 4 for a list of cooperative MoUs signed by CPPS.

⁴⁹ Scott, above n 24; Scott, above n 21.

⁵⁰ Lodge et al, above n 1, 59.

⁵¹ See Sections 6.3.5, 6.3.6, 6.5.1.5, and 6.5.2.5 of Chapter 6.

Given that it is unlikely that their conventions will be updated in the near term, a possible option would be for IATTC and SPRFMO to adopt more stringent measures on the prevention of marine pollution, such as vessel source discharge restrictions, for their flag and port States in their yearly meeting resolutions in line with the work of the IMO and its relevant legal agreements. RFMOs could also request their member States to ratify IMO's treaties and protocols and enforce the provisions of IMO treaties on the prevention, reduction and control of vessel source marine pollution. Ultimately, signing a MoU or MoC with IMO would also be an option. It could be based on the MoC model that OSPAR has signed with IMO in 1999. This MoC, which has been consistently implemented, encourages OSPAR and IMO to take part at each other's meetings and to exchange relevant information, initiate joint programmes or activities, and render mutual assistance on issues of common interest relating to marine environmental protection.⁵²

Another option would be to extend such cooperation between the three institutions to develop a longer term legal pathway in the form of a regional agreement on the conservation of high seas biodiversity in the Southeast Pacific, similar to the 2000 Galapagos Agreement adopted by CPPS. However, at this stage, this option may be premature and unrealistic for several reasons:

Firstly, negotiating and implementing such an agreement would cost time, money and effort that could be more valuably invested into proactive and efficient management of the region. Secondly, given the number and different nature of stakeholders in the region, it would be very difficult or nearly impossible to have everyone agree on the nature and content of such an agreement. Thirdly, the geographical scope of the three institutions does not completely match and therefore there may be reluctance on the part of member States of these institutions to extend their competencies beyond their current scope.

⁵² *Memorandum of Understanding between the North East Atlantic Fisheries Commission (NEAFC) and the OSPAR Commission (2008)* (www.ospar.org/html_documents/ospar/html/mou_neafc_ospar.pdf; accessed: 3 January 2015); *Agreement Cooperation with IMO* (OSPAR, 1999) (www.ospar.org/html_documents/ospar/html/imo_oneils_letter_30_nov_1999_and_attachments_from_imo.pdf; accessed: 3 January 2015).

Fourthly, agreeing to a MoU with incentives for States to contribute towards a more efficient regional management and with more stringent compliance and enforcement methods may be a first and more cost-efficient step towards a better conservation of high seas biodiversity. As for the North-East Atlantic region with OSPAR and NEAFC, if collaboration and cooperation is implemented in a practical and phased manner, an adequate framework for ocean management and the conservation of high seas biodiversity can be created over time.

Finally, a possible implementing agreement to the LOSC on the conservation and sustainable use of marine biodiversity in ABNJ is currently being discussed in the United Nations (UN) through the *Ad Hoc Open-ended Informal Working Group to Study Issues Relating to the Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction* (BBNJ Working Group) and States in the region may be therefore more committed at this stage in developing and consolidating the global framework, before implementing it at the regional level.

7.3.3 Cooperation of a Scientific Nature

Lodge et al in their study on recommended best practices for RFMO governance and performance identified, as a best practice, the necessity for RFMOs to have ‘a scientific body with appropriate technical expertise that is commissioned to understand and assess issues relating to target and non-target species, implement monitoring and research programmes, develop reference points and management strategies, provide stock and broader ecosystem status reports (...)’.⁵³

All three regional institutions in the Southeast Pacific have their own scientific information as their knowledge base but they will need to ensure that their scientific and technical commissions include all of the above-mentioned points in order to be effective not only for fisheries management but also for biodiversity conservation. The analysis undertaken in Chapters 5 and 6 shows that scientific data provisions are not uniformly well implemented in the region.

⁵³ Lodge, above n 1, 32.

As mentioned above, the Southeast Pacific region would particularly benefit from scientific cooperation, either informally through the participation of scientists at each other's Commission or Science Committee meetings. In these fora, scientific data and information on fish stocks and other relevant marine species of the Southeast Pacific as well as illegal, unreported and unregulated (IUU) fishing vessel lists could be exchanged. This cooperation could also be achieved through the formal establishment of a MoU or a MoC on scientific research, data collection and exchange, observer and monitoring programmes.

Collaborating on a regionally operated observer and monitoring programme could help reduce IUU fishing, providing a cost-effective option to take a regional approach to IUU fishing and enhance free-rider deterrence (see Section 7.7 of this chapter). Such a collaborative platform for scientific data collection and exchange would not only strengthen and improve the knowledge in this region but also channel and reduce the costs involved with data collection and scientific assessments and more effectively allocate the resources at the disposal of the institutions for this region. It could even include scientific collaboration and partnerships with other relevant regional institutions, such as SPREP and WCPFC, to cover the whole of the South Pacific.

As the Executive Secretariat for the Southeast Pacific RSP and with its focus on the reduction and control of marine pollution and the establishment of marine protected areas (MPAs) within the national jurisdiction of its member States, CPPS could serve as link between the management of areas within national jurisdiction and the two RFMOs. This would ensure that management resolutions and measures adopted on either side of the legal divide are compatible and not competing against each other.

CPPS also gathers environmental and climatic data for the region and is therefore a scientific and environmental monitoring link that could be strengthened. Such environmental data forms an important basis for taking scientifically sound management decisions. This, of course, is only possible if the different member States of the three institutions see a benefit in this type of cooperation and if CPPS' member States are willing to pursue such cooperation. As these coastal States have, as major fishing nations, a lot at stake in this region, such cooperation and collaboration would be beneficial for them in the long term. As CPPS has undertaken and is undertaking

extensive scientific research across the Southeast Pacific, particularly on climate-related issues, this institution could provide a scientific platform for the two other institutions that will benefit from such collaboration. In this respect, the management of highly migratory species in this region can be better managed and informed through the incorporation of an environmental parameter.

Given the oceanography of the Southeast Pacific and the highly migratory and straddling nature of fish stocks, cooperation between CPPS, IATTC and SPRFMO is necessary to ensure that measures within and beyond national jurisdiction are complementary and compatible and any information that can provide help in fisheries management and ultimately biodiversity conservation for this region should be used. One issue with this proposal may be that States contributing financial resources to their member institution may not necessarily agree to such a detailed and large amount of scientific data and information being released to other institutions, particularly under such differing memberships. Nevertheless, given the importance of scientific information in underpinning sound and effective management decisions, such scientific collaboration is crucial for the conservation and sustainable use of high seas biodiversity.

Given the extensive geographical coverage and overlap between the three RFOs, another possibility in the long-term would be to extend such legal and scientific cooperation to create a common and external scientific knowledge base that could provide background scientific information and make stock assessments for these three regional institutions, while also helping to reduce research and data collection costs and providing a more solid and sound scientific basis for management decisions. This could also be extended to include other relevant regional institutions and cover a more basin-wide area across the South Pacific. This scientific institutionalisation is already occurring in the North Atlantic and North Pacific through the scientific institutions ICES and PICES, respectively. In her institutional analysis of the North-East Atlantic, Kvalvik found that the development of such a common science platform is important for high seas management.⁵⁴

⁵⁴ Kvalvik, above n 22.

7.3.4 Cooperation of Institutional Nature

Integrated institutional management is the next level in cooperative institutional interplay.⁵⁵ Integrated institutional arrangements as well as strong leadership are integral in creating synergistic institutional interplay.⁵⁶ The importance of having a ‘champion’ has also been emphasised by O’Leary et al and Freestone et al.⁵⁷ This champion can be ‘an organisation, State and/or individual(s) intent on awareness raising, knocking on the door and asking questions of decision-makers’.⁵⁸ It is the one who takes the political lead and steers the process forward. For the Southeast Pacific, this means that either the secretariat of one of the institutions or a State needs to take the lead and facilitate inter-institutional cooperation and States’ commitment towards tackling and resolving the challenges in the conservation and sustainable use of high seas biodiversity, proposing effective and realistic ways forward in cooperation and conservation.

This type of cooperative management involves a more conscious, targeted and deeper cooperation through communication, encompassing an active coordination of work programmes as well as administrative and procedural coordination, including in some cases the decision-making process, the implementation of activities or the regulation of behaviours through the adoption, implementation and enforcement of mechanisms and measures to avert non-compliance.⁵⁹ The development of ‘common rules and decision-making procedures’ between RFMOs can also ensure homogeneity between their policies and between those of coastal States and neighbouring RFMOs.⁶⁰ Such cooperative management has the potential to create ‘an overarching institutional framework’.⁶¹

Institutionally, the three regional institutions could increase the participation at each other’s meetings, ensure a full, continuous and regular cooperation between their

⁵⁵ Scott, above n 24.

⁵⁶ Jon Birger Skjaerseth, ‘Protecting the North-East Atlantic: Enhancing Synergies by Institutional Interplay’ (2006) 30 *Marine Policy* 157.

⁵⁷ B C O’Leary et al, ‘The First Network of Marine Protected Areas (MPAs) in the High Seas: The Process, the Challenges and Where Next’ (2012) 36 *Marine Policy* 598, 600; David Freestone et al, ‘Can Existing Institutions Protect Biodiversity in Areas Beyond National Jurisdiction? Experiences from Two On-going Processes’ (2014) 49 *Marine Policy* 167, 173-174.

⁵⁸ Freestone et al, above n 57.

⁵⁹ Scott, above n 24; Scott, above n 21; Oberthür, above n 24; Stokke, above n 24.

⁶⁰ J Samuel Barkin and Elizabeth R DeSombre, *Saving Global Fisheries: Reducing Fishing Capacity to Promote Sustainability* (MIT Press, 2013).

⁶¹ Oberthür, above n 24.

Secretariats as well as between their Committees. This has been underscored by Kvalvik as important in her analysis of the institutional interplay in the North-East Atlantic.⁶²

The three institutions could establish joint activities and programmes of work and could also enhance their cooperation in ensuring the compliance and enforcement of measures in place, not just to fight IUU fishing, but through the coordination of their port and market measures, such as catch documentation schemes, and the establishment and implementation of regionally agreed boarding and inspection procedures. Given the relevance of the work of WCPFC in the Western and Central Pacific and its work with IATTC under the tuna RFMO collaboration, it could also be an option to include this RFMO in such arrangements and to develop such procedures for the whole South Pacific. Also, it would be useful and important to develop a shared or consolidated vessel list, particularly with regard to IUU fishing vessels, and vessel monitoring systems (VMS) for the South Pacific, and particularly between SPRFMO and IATTC for the Southeast Pacific.⁶³ The development of MPAs within a region is seen by Kvalvik as a good basis for the enhancement of inter-institutional cooperation.⁶⁴

CPPS could promote marine environmental protection, and particularly marine pollution management, beyond its borders: Colombia, Ecuador, Chile and Peru could promote these issues within the fora of IATTC and SPRFMO, thus encouraging these institutions to improve their duty to protect the marine environment. Establishing a region-wide environmental protection programme through cooperation and collaboration could also be an option.

All three regional institutions need to ensure that their performance is regularly reviewed and their convention updated to incorporate modern conservation principles. Within the Southeast Pacific, none of the three regional institutions have, to date, undertaken such a performance review. IATTC has been discussing it at its Commission meetings since June 2007. SPRFMO, as a newly established organisation, has not had to undertake such a review at this stage.

⁶² Kvalvik, above n 22.

⁶³ Lodge et al, above n 1, 46; Michael Lodge, 'Managing International Fisheries: Improving Fisheries Governance by Strengthening Regional Fisheries Management Organizations' (Briefing Paper No EEDP BP 07/01, Chatham House Energy, Environment and Development Programme, May 2007), 2 and 5.

⁶⁴ Kvalvik, above n 22.

The strengthening and updating of RFMOs' and RSOs' mandates has been proposed to allow for an extension of their mandate into ABNJ, multi-species management, the integration of high seas biodiversity obligations and the inclusion of broader environmental principles.⁶⁵ Although updated in 2003, IATTC's Antigua Convention is not as advanced as SPRFMO's Convention in terms of decision-making processes and the incorporation of modern conservation principles. Particularly, it does not include a legal provision on the application of the ecosystem approach, which has been identified by Kvalvik as important to strengthen the institutional interplay between NEAFC and OSPAR in the North-East Atlantic.⁶⁶ IATTC's Antigua Convention could therefore be strengthened through appropriate resolutions and, in the long-term, through its revision. IATTC could also benefit from having its performance reviewed in order to highlight its management strengths and weaknesses. In this respect, Lodge et al have proposed recommended best practices that may be used as criteria for the evaluation of RFOs' performance.⁶⁷

The final level of cooperative institutional interplay identified by Scott is integrated political management, involving both institutional and political management and cooperation.⁶⁸ Institutional nesting through the merging of RFMOs and RSOs has also been proposed as a medium to long-term option for the conservation and sustainable use of high seas biodiversity.⁶⁹ Given the complexity of the region in terms of differing RFMO membership, incomplete LOSC and UNFSA ratification by States currently fishing in the Southeast Pacific, and tensions between coastal States and distant water fishing nations (DWFNs), such political integration is, however, premature for the region. Rather, by adopting lower level cooperative mechanisms, either legally, scientifically, or institutionally, the Southeast Pacific could be better equipped and more efficient in dealing with the conservation of high seas biodiversity. This more modest approach will allow for the reduction of risks, such as political tensions, and will require a lower level of resources, at least initially.⁷⁰

⁶⁵ See, eg: Gjerde et al, above n 16; Kristina M Gjerde et al, 'Ocean in Peril: Reforming the Management of Global Ocean Living Resources in Areas Beyond National Jurisdiction' (2013) 74 *Marine Pollution Bulletin* 540; Natalie C Ban et al, 'Systematic Conservation Planning: A Better Recipe for Managing the High Seas for Biodiversity Conservation and Sustainable Use' (2014) 7(1) *Conservation Letters* 41; Rochette et al, above n 16; Warner et al, above n 18; 2008 *BBNJ Report* para 40.

⁶⁶ Kvalvik, above n 22.

⁶⁷ Lodge et al, above n 1.

⁶⁸ Scott, above n 21.

⁶⁹ Druel et al, above n 16.

⁷⁰ Scott, above n 21, 246.

7.4 Challenges in the Adoption and Implementation of Conservation and Management Measures for High Seas Biodiversity Conservation

The analysis undertaken in Chapters 5 and 6 shows that, while there is still progress to be made for the conservation and sustainable use of high seas biodiversity in the Southeast Pacific, many of the global legal provisions pertinent to high seas biodiversity conservation have been, even if sometimes only partially, integrated within the three institutions' conventions. They have also been implemented to some extent by IATTC and SPRFMO.

In this respect, there are several positive aspects that can be noted from this analysis. Firstly, most fisheries measures as well as scientific data measures have been adopted and implemented. This is only understandable for institutions with a fisheries focus and builds on their scientific knowledge. Interestingly, States seem to be delegating their duties to these institutions as many of the global legal provisions aimed at States are being adopted and implemented through these organisations. Also, some global legal provisions that have not been taken up in the institutions' conventions are being implemented, thus showing that a legally binding convention is not always necessary for States to cooperate. It is also interesting to note that institutions are implementing some of the soft law provisions as well. On the other hand, biodiversity and environmental measures have not always been incorporated in the institutions' conventions or implemented. While broad conservation provisions are generally adopted and implemented, the more specific measures are not always adopted or implemented.

Specifically, the main challenges in terms of the integration of biodiversity conservation components into the three regional institutions' conventions and their implementation by IATTC and SPRFMO can be noted as follows: Firstly, as mentioned in Section 7.3.4 of this chapter, IATTC has no provision in its Antigua Convention on the application of the ecosystem approach. One of the main challenges with regard to biodiversity conservation is that RFMOs continue to be mainly single-species management focused rather than having a broader ecosystem approach to fisheries (EAF) management. Given that the concept of biodiversity is based on the interconnections between species, habitats and ecosystems, as outlined in Chapter 3, such an ecosystem approach is vital to the conservation and sustainable use of high seas biodiversity.

Secondly, with regard to target stocks, all three regional institutions have legal provisions in their conventions on conservation measures for target stocks, including the establishment of an allowable catch and fishing effort. Although both IATTC and SPRFMO have implemented such conservation measures, the main challenges reside in the fact that SPRFMO has, to date, not implemented conservation measures for targeted fish stocks other than Chilean jack mackerel and IATTC has not established a management plan for targeted fish stocks.

Thirdly, with regard to associated, dependent, same ecosystem and bycatch species, there are no legal provisions in the three regional institutions' conventions on the adoption of plans of action for the conservation of *Chondrichthyes* and for the conservation of seabirds. There are also no legal provisions on bycatch reduction. In addition, IATTC and SPRFMO have not implemented such regional plans. The three regional institutions do not have legal provisions relating to the conservation of albatrosses and petrels. IATTC has established a Bycatch Working Group, has implemented conservation measures for seabirds, sharks, and sea turtles and has also signed a MoU with ACAP.⁷¹ To date, SPRFMO has also implemented conservation measures for seabirds, particularly for their bycatch reduction in longline fisheries. IATTC and SPRFMO also do not have legal provisions on the protection of endangered or threatened species nor have they implemented special conservation measures to this end. In contrast, CPPS has legal provisions on the protection of endangered and threatened species of fauna and flora within national jurisdiction.

⁷¹ IATTC, 'Consolidated Resolution on Bycatch' (C-04-05 Rev 2, Revised, 2004) requests States to release non-target species, to develop measures/techniques to release sea turtles, billfish, sharks and rays and to find ways to modify the design of FADs to eliminate sea turtle entanglement. IATTC, 'Resolution on the Conservation of Oceanic Whitetip Sharks Caught in Association with Fisheries in the Antigua Convention Area' (C-11-10, 2011) requires States to prohibit retaining onboard, transshipping, landing, storing, selling or offering for sale oceanic whitetip sharks. IATTC, 'Resolution on the Conservation of Sharks Caught in Association with Fisheries in the Eastern Pacific Ocean' (C-05-03, 2005) encourages States to establish and implement a national plan of action for the conservation of sharks. It also requires States to fully utilise shark catches, to have no more than 5 per cent of the weight of sharks as fins onboard. It furthermore encourages the release of live sharks and requests the prohibition to board, transship, land or trade any fins harvested in contravention of this resolution. IATTC, 'Resolution to Mitigate the Impact of Tuna Fishing Vessels on Sea Turtles' (C-07-03, 2007) requests States to implement FAO Guidelines to reduce bycatch, injury and mortality of sea turtles. States are also to implement observer programmes and apply measures/techniques to avoid turtle bycatch and to release them. IATTC, 'Resolution to Mitigate the Impact on Seabirds of Fishing for Species Covered by the IATTC' (C-11-02, 2011) requests States to report to the IATTC on their implementation of the IPOA-Seabirds. Longline vessels of more than 20 metres in length have to use at least two mitigation measures when fishing in the designated area. Other vessels are encouraged to use at least one measure. States are also encouraged to establish national programmes to place observers on fishing vessels and to adopt measures to release seabirds alive.

The MoU between IATTC and ACAP was signed at La Jolla, United States of America (USA), on 14 July 2011 (acap.aq/en/acap-agreement/2168-mou-between-acap-secretariat-and-iatcc/file, accessed: 7 March 2015). IATTC's Bycatch Working Group met for the first time in July 1998.

Fourthly, although IATTC has implemented time and spatial closures for fisheries under its jurisdiction, both this institution and SPRFMO do not have legal provisions on area-based management or the establishment of MPAs and time and area closures. In contrast, CPPS has legal provisions on the establishment of MPAs and fisheries closure areas within the national jurisdiction of its member States.

Fifthly, IATTC and CPPS do not have provisions on the development of management plans or regional assessments for improved management of fishing capacity and, in the case of IATTC, a legal provision on the marking of vessels and gear. Furthermore, SPRFMO has not implemented any measures on fish and mesh size limits, closure areas, the amount of discard and types of fishing gear allowed.

Sixthly, in contrast to SPRFMO and CPPS, IATTC does not have legal provisions on the protection of the marine environment, VMEs and habitats. IATTC has also not implemented any conservation measures to this effect but SPRFMO has implemented bottom fishing closures for the protection of VMEs and has a prohibition in place on bottom fishing in its Convention Area. To date, SPRFMO has not implemented other measures to protect critical fisheries habitats or for marine environmental protection. In contrast to CPPS, IATTC and SPRFMO do not have any legal provisions on the use of EIAs and IATTC has not implemented any measures to this effect. SPRFMO requires its member States to undertake environmental assessments for bottom fishing. In contrast to IATTC, both SPRFMO and CPPS have legal provisions on the prevention, reduction and control of marine pollution. Both IATTC and SPRFMO have not yet implemented any such measures. Furthermore, none of the three institutions have legal provisions on the prevention of alien species introduction or, in the case of IATTC and SPRFMO, have implemented any measures to this effect.

Finally, none of the three regional institutions have legal provisions for the identification and monitoring of biodiversity or of processes and categories of activities which are likely to have significant adverse impacts on biodiversity. In contrast to CPPS, neither IATTC nor SPRFMO have legal provisions on marine pollution monitoring. IATTC requires its member States to monitor targeted stock catches and fisheries interactions with bycatch species as well as the effects of FADs on fish stocks and bycatch species, while SPRFMO monitors bottom fishing stocks and impacts of

fishing gears on VMEs. Appendix F provides a summary table of identified opportunities and challenges in conservation for inter-institutional cooperation.

The poor implementation of management measures, particularly biodiversity-related ones, and the lack of environmental protection principles in RFMOs' conventions is seen by scholars as contributing to their failure in effectively managing and conserving fish stocks under their management.⁷²

7.5 Options and Recommendations on Conservation and Management Measures

Although RFMOs were not originally established to manage and conserve high seas biodiversity, this extension has been partially and organically integrated into their mandates through the continuous request of various international fora to focus on a broader ecosystem approach and precautionary approach to fisheries management.

According to the analysis conducted in Chapters 5 and 6, fisheries measures are not extensive enough in the Southeast Pacific region to properly cover the species and ecosystem components of biodiversity. However, many fisheries conservation and management measures in place in the region, relating to the impacts of fishing and fisheries on ecosystems and the marine environment in general, have the potential to address aspects of biodiversity conservation. Given the conceptual nature of biodiversity, legal obligations towards its conservation can only be achieved through the conservation and sustainable use of its tangible components, namely biological resources and ecosystems (see Section 3.3.2.1 of Chapter 3).⁷³ That is, biodiversity conservation needs to include both the conservation of living resources and the protection of the marine environment.

⁷² Convention on Biological Diversity, *Report of Joint Expert Meeting on Addressing Biodiversity Concerns in Sustainable Fisheries*, UNEP/CBD/SBSTTA/16/INF/13, Subsidiary Body on Scientific Technical and Technological Advice, 16th meeting, Item 6.2 of the Provisional Agenda (5 March 2012) ('*Biodiversity Concerns Report*') annex III para 9; Kristina M Gjerde, 'High Seas Fisheries Governance: Prospects and Challenges in the 21st Century' in Davor Vidas and Peter Johann Schei (eds), *The World Ocean in Globalisation: Climate Change, Sustainable Fisheries, Biodiversity, Shipping, Regional Issues* (Martinus Nijhoff, 2011) 221; Rosemary Rayfuse, 'The Challenge of Sustainable High Seas Fisheries' in Nico Schrijver and Friedl Weiss (eds), *International Law and Sustainable Development: Principles and Practice* (Martinus Nijhoff, 2004) 467; Rosemary Rayfuse, 'Moving Beyond the Tragedy of the Global Commons: The Grotian Legacy and the Future of Sustainable Management of the Biodiversity of the High Seas' in David Leary and Balakrishna Pisupati (eds), *The Future of International Environmental Law* (United Nations University Press, 2010) 201; Gjerde et al, above n 65; Rochette et al, above n 16; Warner et al, above n 18.

⁷³ Lyle Glowka et al, 'A Guide to the Convention on Biological Diversity' (Report, IUCN, 1994), 16. Biological resources are defined as 'genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity' (*Convention on Biological Diversity*, opened for signature 5 June 1992, ATS 32 (entered into force 29 December 1993) ('*CBD*') art 2) and thus are 'tangible biotic components of ecosystems' (Glowka et al, above n 73, 16). Ecosystems are defined by the CBD as 'a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit' (*CBD* art 2).

The fisheries conservation and management measures currently provided for under international law, as identified in this thesis, are not broad enough to encompass the conservation and sustainable use of all high seas biodiversity. Although current fisheries measures in place do, to some extent, include biodiversity conservation, RFMOs in general fail to address the broader ecosystem approach and multi-species management approach that would be necessary to fully implement the conservation of high seas biodiversity.

As noted by Lodge et al, there is currently not much attention put on developing ways to better manage fisheries' impacts 'on broader ecological elements such as bycatch, habitats and food webs'.⁷⁴ Measures that address global issues such as IUU fishing, excess capacity, allocations and subsidies will have an impact not only on targeted fish stocks but also on the broader marine environment and therefore such measures will overall benefit biodiversity conservation. In this respect, specific measures targeting biodiversity conservation with a wider spatial and time scale need to be adopted in order to ensure that biodiversity conservation is properly address. There is a need for RFMOs to adopt and implement other biodiversity-related measures as well as environmental protection measures in order to adequately conserve high seas biodiversity. This includes the use of area-based management measures and EIAs.

The CBD has established a list of conservation measures that should be used when dealing with the conservation of biodiversity. Although this convention is only legally applicable to areas within the national jurisdiction of States, the conservation measures proposed are explicitly formulated for biodiversity and could also be applied to biodiversity on the high seas. Apart from species-based conservation measures, the CBD also recommends the use of area-based management tools, such as MPAs, to cover 10 per cent of coastal and marine areas by 2020.⁷⁵ It is widely recognised that MPAs on their own do not adequately fulfil the requirement to conserve biodiversity

⁷⁴ Lodge et al, above n 1, 27.

⁷⁵ CBD art 8. The United Nations Conference on Environment and Development, 'Agenda 21, Chapter 17' (1992) ('*Agenda 21, Chapter 17*') also encourages the establishment and management of protected areas (para 17.7). There is neither a legal agreement nor guidelines on the establishment of MPAs in ABNJ. Under the CBD, States Parties are encouraged to cooperate between them or through a competent organisation for the conservation and management of biodiversity (CBD art 5). The establishment of MPAs in ABNJ has been achieved to date through the cooperation of States at the regional level and through regional bodies such as RFMOs. Because of their international characters, MPAs can only be established and managed in ABNJ through the willingness and cooperation of States. Convention on Biological Diversity, *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Tenth Meeting: X/2. The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets*, UNEP/CBD/COP/DEC/X/2, Conference of the Parties to the Convention on Biological Diversity, 10th meeting, Agenda Item 4.4 (29 October 2010), Aichi Biodiversity Target 11.

and that a network of MPAs which includes various representative ecosystems coupled with other measures such as EIAs and strategic environmental assessments (SEAs) are necessary to adequately and effectively conserve biodiversity.⁷⁶

Area-based management measures such as MPAs and fisheries spatial closures are key for the conservation and sustainable use of high seas biodiversity by addressing activities and threats in a holistic manner and protecting vulnerable and unique habitats.⁷⁷ The development of MPAs within a region provides a good basis for the enhancement of inter-institutional cooperation.⁷⁸ In this respect, Freestone et al note that, for successful regional cooperation, there is a need for States to recognise ‘the need to identify and protect selected areas’, with ‘agreement on overarching principles’, ‘targets and deadlines’ and ‘agreed criteria and selection processes for MPAs based on established biodiversity considerations’.⁷⁹ They also emphasise that an institutional commitment for the long-term and political will are essential to protect biodiversity.⁸⁰ MPAs take into account the ecosystems component of biodiversity but do not completely include the species component as many species are migratory in nature and therefore need further management and conservation measures to effectively conserve them.

The importance of environmental management tools, including EIAs, more broadly for the conservation and management of high seas biodiversity is consistently emphasised in the BBNJ Working Group.⁸¹ This would translate to a stronger component in the Southeast Pacific regional institutions’ resolutions on marine environmental protection and the protection of vulnerable ecosystems and habitats, such as VMEs. CPPS could also promote marine environmental protection, and particularly marine pollution management, beyond its borders: Colombia, Ecuador, Chile and Peru could promote these issues within IATTC and SPRFMO, thus encouraging these institutions to

⁷⁶ See Davey cited in Nigel Dudley, ‘Guidelines for applying protected area management categories’ (Report, IUCN, 2008), 10.

⁷⁷ 2006 BBNJ Report para 33 and para 59; 2008 BBNJ Report para 26; 2010 BBNJ Report para 58; 2011 BBNJ Report para 23; 2012 BBNJ Report para 20. See also: Kristina M Gjerde and Anna Rulska-Domino, ‘Marine Protected Areas Beyond National Jurisdiction: Some Practical Perspectives for Moving Ahead’ (2012) 27 *The International Journal of Marine and Coastal Law* 351.

⁷⁸ Kvalvik, above n 22.

⁷⁹ Freestone et al, above n 57, 173-174.

⁸⁰ Ibid.

⁸¹ 2006 BBNJ Report para 34 and annex 1 para 5; 2008 BBNJ Report para 17, para 46 and para 54; 2010 BBNJ Report para 14, para 43 and para 51; 2011 BBNJ Report para 30 and para 54; 2012 BBNJ Report para 24 and para 26; Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 25 July 2014 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly, A/69/177*, United Nations General Assembly, 69th sess, Item 75(a) of the preliminary list (23 July 2014) (‘2014b BBNJ Report’) para 65. See Section 3.3.2.2 of Chapter 3 for more information on EIAs.

improve their duty to protect the marine environment. Another option would be for IATTC and SPRFMO to adopt more stringent measures for their flag and port States in their yearly meeting resolutions in line with the work of the IMO and its legal agreements on vessel source pollution. The Southeast Pacific regional institutions could also adopt appropriate data collection and reporting mechanisms to allow for an adequate knowledge of the status of living resources and ecosystems as well as for their management.⁸²

Other options are also relevant for the Southeast Pacific regional institutions in strengthening their commitment to high seas biodiversity conservation. These would include those proposed by the 2011 CBD Joint Expert Meeting on Addressing Biodiversity Concerns in Sustainable Fisheries, such as integrating biodiversity obligations in the EAF; integrating the application of management tools as well as enforcement and surveillance; using marine spatial planning to better integrate both components; and developing processes and mechanisms for increased transboundary cooperation.⁸³

It has been suggested in multiple fora that RFMOs and RSOs should work more cooperatively and develop cooperative mechanisms, including through the implementation of EIAs, SEAs and marine spatial planning, the establishment and implementation of fisheries and biodiversity management measures using common methodology and incorporation of modern conservation principles.⁸⁴ The precautionary and ecosystem approaches to management have been widely acknowledged and accepted within the international community as being fundamental principles for the conservation of high seas biodiversity.⁸⁵ These considerations will need to be adequately and efficiently implemented and integrated within the Southeast Pacific regional institutions' conventions, particularly in IATTC's if more effective high seas biodiversity is to be achieved. Programmes on trophic interactions and dependencies should also be established to allow for a better estimation of catch levels and management measures across the whole region.⁸⁶

⁸² Lodge et al, above n 1, 31.

⁸³ *Biodiversity Concerns Report* annex III para 12, para 15, para 18 and para 20.

⁸⁴ Warner et al. above n 18.

⁸⁵ See, eg: *2006 BBNJ Report* para 33 and annex 1 para 5; *2010 BBNJ Report* para 13. See also Section 3.3.2.2 of Chapter 3 for more information on these approaches.

⁸⁶ Lodge et al, above n 1, 26.

7.6 Challenges in Compliance with and Enforcement of Management Measures Adopted by the three Regional Institutions

Although all three regional institutions have legal provisions on the implementation of and compliance with their respective conventions and have adopted enforcement measures, including the investigation of infractions and the application of sanctions, the analysis undertaken in this thesis on measures implemented by IATTC and SPRFMO show that both institutions have issues with State compliance and the enforcement of management measures. In the case of IATTC, catch quotas and other conservation and management measures are not always fully complied with, with the yearly catch quota often being overstepped. In the case of SPRFMO, its member States have not complied fully with data reporting requirements, including the submission of late and/or incomplete reports and no data submissions. SPRFMO member States have so far fully complied with the Chilean jack mackerel catch and effort conservation and management measures, which have been put into place.

Another compliance challenge for the Southeast Pacific region is the decision-making process of IATTC, CPPS and SPRFMO involving consensus-based decisions. Although such decisions enjoy the approval of all member States and are therefore more likely to be applied, implemented and respected by all member States, having such a decision-making process can also prevent the organisation from agreeing on management and conservation measures.⁸⁷ SPRFMO offers an alternative in cases when consensus cannot be obtained, namely by allowing questions of procedure to be adopted by a majority of votes and questions of substance by a three-fourths majority.⁸⁸ This allows for more flexibility and accelerates the decision-making process and, to a certain extent, can help to reduce the ‘political blockades’ that may be put in place to stop a management measure from being passed. Also, SPRFMO’s objection procedure is very strict, preventing States from using this option to avoid their legal obligations. CPPS has an objection procedure but this only allows objecting member States not to be bound by

⁸⁷ The use of a consensus-based decision-making process in some RFMOs is seen as an ineffective management practice as States can, despite having to apply the precautionary and ecosystem approaches, use the lack of scientific certainty to object to and therefore block the development and implementation of management and conservation measures. See, eg: Robin Warner, *Protecting the Oceans Beyond National Jurisdiction: Strengthening the International Law Framework* (Martinus Nijhoff, 2009); High Seas Task Force, ‘Closing the Net: Stopping Illegal Fishing on the High Seas’ (Report, Governments of Australia, Canada, Chile, Namibia, New Zealand and the United Kingdom, WWF, IUCN and the Earth Institute at Columbia University, 2006); Lodge et al, above n 1, x; Ardron et al, above n 16; McDorman, above n 12; Rosemary Rayfuse, *Regional Allocation Issues or Zen and the Art of Pie Cutting* (2007) UNSW Legal Research Series 10 <<http://www.austlii.edu.au/au/journals/UNSWLRS/2007/10.html>> (accessed: 1 December 2014).

⁸⁸ *Convention on the Conservation and Management of High Seas Fishery Resources in the South Pacific Ocean*, opened for signature 14 November 2009, ATS 28 (entered into force 24 August 2012) corrected in 2010 (‘*SPRFMO Convention*’) art 16.2.

a recommendation. IATTC is more rigid as it has no objection procedure in place, so that one objection leads to a measure not being passed. These objection procedures and the general non-compliance of States are seen as potentially ‘major impediments to the implementation of even the weak rules that are agreed to within RFMOs’.⁸⁹ In contrast to CPPS, both IATTC and SPRFMO have dispute settlement procedures in place.

The lack of effective methods to monitor and control vessels and effective reporting regimes for catches, imports and exports pose a problem and contribute to IUU fishing.⁹⁰ In terms of IUU fishing, IATTC does not have explicit legal provisions on the prevention, deterrence and elimination of IUU fishing or on the regulation of transshipments. However, IATTC member States must report any IUU activities to the Commission and prohibit the landing and transshipment of IUU vessel catches in their ports. The Commission itself has not implemented any port State measures and has no measures in place for catch verification, sanctions and investigations in case of IUU fishing. SPRFMO has implemented port State measures to control foreign vessels in terms of their landings and transshipments but has not yet established an IUU vessel list or sanctions to fight IUU fishing. Nonetheless, all three regional institutions have legal provisions on the maintenance of a registry of fishing vessels entitled to fish in their respective Convention Areas.

In contrast to IATTC, both SPRFMO and CPPS have legal provisions in their conventions on the adoption of boarding and inspection procedures. Neither IATTC nor SPRFMO have implemented them. In contrast to IATTC, SPRFMO has a legal provision on the establishment of an observer programme but both institutions have not to date implemented a regional observer programme. IATTC has a regional observer programme for transshipment and requires five per cent observer coverage on longline vessels and observers on board purse-seine vessels above 363 metric tons. CPPS has a legal provision on the establishment of a VMS and SPRFMO has established such a VMS. Appendix G provides a summary table of identified opportunities and challenges in compliance for inter-institutional cooperation.

⁸⁹ Barkin and DeSombre, above n 60, 28.

⁹⁰ Gjerde, above n 72, 228; Lodge et al, above n 1, 39.

7.7 Options and Recommendations on Compliance and Enforcement Measures

The most important step will be for the region to build and strengthen a compliance and enforcement framework through the efforts of each institution but also, as outlined in Sections 7.2 and 7.3 of this chapter, by promoting collaboration between IATTC and SPRFMO, and other relevant RFMOs, and the South American coastal and port States. The analyses undertaken in Chapters 5 and 6 show that the compliance with and the enforcement of agreed conservation and management measures is an issue in the region, particularly in terms of catch quota overstepping for IATTC and non-compliance in data reporting for SPRFMO.

Given that RFMOs are not supranational entities and are composed of sovereign States, the only way biodiversity can be conserved and sustainably managed on the high seas is through the effective implementation by States of and compliance with agreed management measures. It is also to be done through the use of dissuasive measures and sanctions for the effective enforcement of such management measures by RFMOs.

By agreeing to strong legally binding resolutions, strengthening their conventions, regularly reviewing their performance, ensuring the financial support to and independence of their compliance committees, promoting port States measures and also by investing in monitoring schemes, the regional institutions of the Southeast Pacific could strengthen their compliance and enforcement capacity.

Successful deterrence of free-riders could also be achieved through the establishment of joint compliance and enforcement measures, such as having a regionally operated observer programme as well as for instance regional boarding and inspection procedures. Sharing access to each institution's IUU list or creating such a list for the whole Southeast Pacific region, or even, with the collaboration of other relevant RFMOs, the whole South Pacific or Pacific Oceans is important in ensuring a common approach to IUU fishing deterrence. In this respect, SPRFMO needs to establish such an IUU list for its Convention Area. The implementation of trade-related measures, including import bans, to counter IUU fishing could also be considered.⁹¹

⁹¹ Lodge et al, above n 1, 56.

Another way to reduce IUU fishing lies in the regional implementation of the FAO Port State Model Scheme together with the regional standardisation of catch documentation schemes.⁹² Furthermore, Lodge et al underscore the necessity to enhance cooperation for transshipments at sea, which regulation contributes towards the deterrence of IUU fishing as well as being an ‘important tool (...) for collecting and verifying data’.⁹³ Also of importance to the strengthening of compliance and enforcement in the region, are notably the application of sanctions and penalties when States overfish, the establishment of adequate monitoring, control and surveillance (MCS), a full implementation of the VMS, the adoption of an efficient inspection system, and increasing port States measures and controls.⁹⁴

The decision-making process, particularly of IATTC, will need to be reviewed in the long-term to challenge the opt-out closes in order to promote a quicker adoption of management measures that will be collectively implemented by member States. Lodge also notes the need to have alternative dispute resolution procedures to improve the decision-making process that could involve technical expert panels.⁹⁵

7.8 Conclusion

This chapter presents the main challenges and opportunities for the Southeast Pacific in achieving improved high seas biodiversity conservation. These are of a cooperative, managerial and compliance nature. Challenges derive mainly from the fact that IATTC and SPRFMO are primarily species-focused institutions rather than integrating a full ecosystem approach to their fisheries management. Although these institutions are primarily focused on fisheries conservation and management, they also include some biodiversity components in their conventions and practice, which, if developed, could contribute to the conservation of high seas biodiversity.

This chapter then proposed several options to improve the conservation and sustainable use of high seas biodiversity in the Southeast Pacific that ranged from legal, scientific and institutional cooperative mechanisms to the strengthening of conservation and management and compliance and enforcement measures. Such options particularly

⁹² Lodge, above n 63, 5.

⁹³ Lodge et al, above n 1, 52.

⁹⁴ Ibid 40, 44, 46, 51 and 54.

⁹⁵ Lodge, above n 63, 5.

include the strengthening of cooperation and collaboration mechanisms not only between the three regional institutions of the Southeast Pacific but also with other relevant regional and global institutions.

Increased cooperation and collaboration helps to merge more financially costly and resource demanding activities, such as scientific research, monitoring, compliance and enforcement. This in turn can positively influence the conservation and sustainable use of high seas biodiversity. Furthermore, such cooperative mechanisms also help institutions to reach their objectives as well as contribute towards the deterrence of free-riders and the avoidance of duplication of work.

8 CONCLUSION

8.1 Study Background

This thesis examined the conservation and sustainable use of high seas biodiversity from the viewpoint of fisheries as the main threat, focusing on the ecologically important and productive Southeast Pacific region.

Identified as a prominent concern by the international community, marine biodiversity loss has been attributed to the continuous intensification of human activities on and in the oceans, and the non-participation of and non-compliance by States with international and regional fisheries instruments. Furthermore, the special legal status of the high seas as a global commons continues to be a challenge in achieving the conservation and sustainable use of high seas biodiversity.

Legal obligations towards biodiversity conservation can only be achieved through the conservation and sustainable use of its tangible components, namely biodiversity resources and ecosystems. Therefore, the basis under international law for the conservation and sustainable use of high seas biodiversity is provided by: a) States' duty to conserve high seas living resources; b) the general obligations under customary international law for States to protect and preserve the marine environment and to safeguard it from harm resulting from human activities; and c) by the customary international law obligation for States to cooperate to this end.

International law institutionalises the cooperation and conservation duties for the management of high seas living resources, particularly straddling and highly migratory fish stocks, at the regional level through regional fisheries organisations (RFOs). Both the duty to cooperate and the duty to conserve high seas living resources under international law provide the basis for the conservation and sustainable use of high seas biodiversity. Regional cooperation, mainly through regional cross-sectoral cooperation, is a key requirement for successful high seas management and the conservation and sustainable use of high seas biodiversity. However, there is no legal specificity in most relevant international law instruments as to how cooperation is to be exercised by States other than the legal requirement for States to cooperate in the conservation and management of high seas living resources and to establish conservation measures.

Responding to the need identified by the international community to strengthen the regional institutional framework to advance the conservation of high seas biodiversity, this is the first study of its kind with a focus on regional fisheries management organisation (RFMO) governance from a high seas biodiversity conservation perspective. It is also the first comprehensive regional study, which focuses on evaluating institutional interplay management, cooperation between RFMOs and regional seas organisations (RSOs) and the incorporation of biodiversity obligations in RFMOs within one region.

8.2 Key Findings for the Southeast Pacific

This thesis examined the adequacy of the regional legal and institutional framework of the Southeast Pacific to address high seas biodiversity conservation by looking specifically at:

- a) The role of RFMOs in contributing to high seas biodiversity conservation;
- b) The level of cooperation and institutional interplay between the Inter-American Tropical Tuna Commission (IATTC), the Comisión Permanente del Pacífico Sur (CPPS) and the South Pacific Regional Fisheries Management Organisation (SPRFMO) in this region; and
- c) The extent to which IATTC and SPRFMO have adopted and implemented global legal provisions and measures pertinent to the conservation of high seas biodiversity.

This thesis made the following key findings for the Southeast Pacific region:

8.2.1 General Key Findings

- a) RFMOs are at least partially legally equipped to deal with high seas biodiversity conservation. Although they mainly focus on fisheries management, they do include some biodiversity obligations in their conventions, albeit not to the extent of fully integrating the two tangible components of biodiversity, namely the conservation of biological resources and ecosystems, and the protection of the marine environment. This thesis also found that RFMOs have an important role to play in the conservation of high seas biodiversity but, given the current non-comprehensive and scattered global legal and institutional framework in place for the conservation of high seas biodiversity, they are not the only organisations that contribute or can

contribute towards its conservation. Indeed, particularly when tackling high seas biodiversity conservation, a multidisciplinary and complementary approach to management is necessary. Therefore, regional cross-sectoral and inter-institutional cooperation are needed to promote the conservation and sustainable use of high seas biodiversity. In this respect, cooperation between RFMOs and RSOs as well as with other relevant international institutions is important;

- b) SPRFMO and IATTC do not have many member States in common. While a fully overlapping institutional membership is not necessarily required, this dissimilarity in State membership of the three regional institutions in the Southeast Pacific will likely affect the extent of their cooperation. This thesis concludes that cooperation under differing membership is possible and should be undertaken for the conservation of high seas biodiversity. However, likely risks to and constraints on such cooperation need to be taken into account;
- c) The unclear geographical scope and advisory nature of CPPS can limit its management capabilities over its area of responsibility;
- d) The rigidity of the consensus-based decision-making process within these regional institutions in the Southeast Pacific, particularly in the case of IATTC and CPPS, presents obstacles to the adoption of relevant conservation and management decisions and to compliance with conservation and sustainable use of high seas biodiversity for this region. With its reliance on consensus based decision-making and no objection procedure in place, IATTC is the most rigid institution of the three.

8.2.2 Specific Key Findings Relating to Cooperation

- e) There is currently limited interaction and collaboration between IATTC, CPPS and SPRFMO as well as limited participation in each other's meetings. To date, no memorandum of understanding (MoU) or memorandum of cooperation (MoC) has been signed between them or discussed at their Commission meetings;
- f) Both IATTC and CPPS have signed MoUs with other relevant regional and global institutions.

8.2.3 Specific Key Findings Relating to Conservation Measures

- g) States are delegating their conservation duties to RFMOs as many of the global legal provisions pertinent to high seas biodiversity conservation aimed at States are being adopted and implemented through and by these regional institutions;
- h) Some global legal provisions pertinent to the conservation of high seas biodiversity that have not been adopted in the RFMOs' conventions are nonetheless being implemented by the RFMOs. This shows that a legal basis is not always necessary for States to implement their global legal duties through RFMOs;
- i) RFMOs are implementing both hard and some soft law provisions on the conservation of high seas biodiversity;
- j) As is the norm for the majority of RFMOs, most fisheries measures as well as scientific data measures have been adopted and implemented by IATTC and SPRFMO. In contrast, biodiversity conservation and environmental protection measures are not always adopted in the institutions' conventions or implemented by them. In this respect, this thesis concurs with the findings of the 2011 Joint Meeting on Addressing Biodiversity Concerns in Sustainable Fisheries organised by the *Convention on Biological Diversity* (CBD) that RFMOs do indeed give, at least partially, attention to major biodiversity conservation obligations in their conventions and policies but fail to adequately and fully implement them;¹
- k) While broad biodiversity conservation measures are generally adopted and implemented, more specific management measures for biodiversity conservation are not always adopted or implemented;
- l) Although IATTC has implemented time and spatial closures for fisheries management, both this institution and SPRFMO do not have legal provisions on area-based management or on the establishment of marine protected areas (MPAs) and time and area closures;

¹ Convention on Biological Diversity, *Report of Joint Expert Meeting on Addressing Biodiversity Concerns in Sustainable Fisheries*, UNEP/CBD/SBSTTA/16/INF/13, Subsidiary Body on Scientific Technical and Technological Advice, 16th meeting, Item 6.2 of the Provisional Agenda (5 March 2012).

- m) In contrast to SPRFMO and CPPS, IATTC does not have legal provisions on the protection of the marine environment, vulnerable marine ecosystems (VMEs) and habitats. IATTC has also not implemented any conservation measures on these matters but SPRFMO has implemented bottom fishing closures for the protection of VMEs and has a prohibition in place to undertake bottom fishing in its Convention Area. However, to date, SPRFMO has not implemented other measures to protect critical fisheries habitats or for marine environmental protection;
- n) In contrast to CPPS, IATTC and SPRFMO do not have any legal provisions on the use of environmental impact assessments (EIAs) and IATTC has not implemented any measures to this effect. In contrast, SPRFMO requires its member States to undertake EIAs for bottom fishing;
- o) None of the three regional institutions have legal provisions on the identification and monitoring of biodiversity or of processes and categories of activities which are likely to have significant adverse impacts on biodiversity;
- p) All three institutions use their own scientific information as their knowledge base. There is no external or common scientific institution providing independent scientific information and assessments for the Southeast Pacific.

8.2.4 Specific Key Findings Relating to Compliance Measures

- q) All three regional institutions have legal provisions on the implementation of and compliance with their respective conventions and have adopted compliance measures, including the investigation of infractions and the application of sanctions. However, the analysis undertaken in this thesis on measures implemented by IATTC and SPRFMO show that both institutions have difficulties with State compliance and the enforcement of management measures. In the case of IATTC, catch quotas and other conservation and management measures are not always fully complied with, with the yearly catch quota being often overstepped. In the case of SPRFMO, its member States have not complied fully with data reporting requirements, which has included late and/or incomplete report submissions and no data submissions from some States. However, SPRFMO member States have so far

fully complied with the Chilean jack mackerel catch and effort conservation and management measures in place.

8.3 Proposed Options and Ways to Strengthen the Current Regional Framework of the Southeast Pacific

With one tuna and one non-tuna RFMO working in this region, collaboration and cooperation between them can provide a good basis for better overall conservation of high seas biodiversity. The complementarity in their geographic scope and functional mandates is a strength that can be used positively to improve the management of high seas living resources and the conservation of high seas biodiversity in the Southeast Pacific. Through the strengthening of their mandates, dealing with their current shortcomings and inter-sectoral cooperation, these three institutions can contribute to the conservation of high seas biodiversity in the Southeast Pacific.

8.3.1 Recommendations on Strengthening Cooperation

- a) Scientific cooperation needs to be encouraged through, for instance, the participation of scientists at each other's Commission or Science Committee meetings. At these meetings, scientific data and information on fish stocks and other relevant marine species of the Southeast Pacific and relevant illegal, unreported and unregulated (IUU) fishing information could be exchanged;
- b) Scientific cooperation could also take place through the formal establishment of a MoU or a MoC on scientific research, data collection and exchange, and observer and monitoring programmes. Given that CPPS has undertaken and is undertaking extensive scientific research across the Southeast Pacific, particularly on environmental and climate-related issues, this institution could provide a scientific platform for the two other institutions. Through the signing of scientific cooperation MoUs or MoCs with IATTC and SPRFMO, the three institutions could establish a scientific information and data exchange as well as a monitoring programme to ensure that environmental and climatic data complementary and necessary to fisheries management and biodiversity conservation are shared between the three institutions as part of an ecosystem approach to management;

- c) Collaborating on a regionally operated observer and monitoring, control and surveillance (MCS) programme could help reduce IUU fishing, providing a cost-effective option and taking a regional approach to IUU fishing and free-riders deterrence. Such a collaborative platform for scientific data collection and exchange would not only strengthen and improve the knowledge of marine biodiversity in this region but also channel and reduce the costs involved with data collection and scientific assessments. It could also more effectively allocate the scientific, technical and human resources available in the region. It could even include scientific collaboration and partnerships with other relevant regional institutions to cover the whole of the South Pacific;
- d) Establishing a region-wide environmental protection programme through cooperation and collaboration could also be an option;
- e) The three institutions could establish joint activities and programmes of work and could also enhance their cooperation in ensuring the compliance with and enforcement of conservation and management measures in place. This would not just operate to identify IUU fishing, but could also include the coordination of port and market-based measures, such as catch documentation schemes, and the establishment of regionally agreed and performed boarding and inspection procedures. Given the relevance of the work of the Western Central Pacific Fisheries Commission (WCPFC) and its work with IATTC under the tuna RFMOs collaboration, it could also be an option to join with the WCPFC in developing such procedures for the whole South Pacific. Also, it could be useful and important to develop a shared or consolidated vessel list, particularly with regard to IUU fishing vessels, and vessel monitoring systems (VMS) for the South Pacific, and particularly between SPRFMO and IATTC for the Southeast Pacific;
- f) Given the extensive geographic coverage and overlap between the three regional institutions, another possibility in the long-term would be to extend such legal and scientific cooperation to create a common and external scientific knowledge base that could provide background scientific information and make stock assessments for the three regional institutions. This would also assist in reducing research and data collection costs and provide a more solid and sound scientific basis for

management decisions. This could also be extended to include other relevant regional institutions to cover a more basin-wide area across the South Pacific;

- g) Another option would be to extend such legal cooperation to develop a long term legal pathway in the form of a regional agreement on the conservation of high seas biodiversity in the Southeast Pacific, similar to the 2000 Galapagos Agreement adopted by CPPS;
- h) The three regional institutions in the Southeast Pacific could increase participation at each other's meetings, ensuring a full, continuous and regular cooperation between their secretariats and their respective committees;
- i) The decision-making process, particularly of IATTC, would benefit from being reviewed in the longer term to challenge the current opt-out clauses in order to promote quicker adoption of management measures that will be collectively implemented by member States.

8.3.2 Recommendations on Strengthening Conservation

- j) IATTC and SPRFMO should adopt and implement more biodiversity conservation-related measures as well as environmental protection measures in order to meet an objective of adequately conserving and sustainably using high seas biodiversity. This would include the use of area-based management measures, EIAs and the protection of vulnerable ecosystems and habitats, such as VMEs;
- k) CPPS could promote marine environmental protection, and particularly marine pollution management, beyond its borders: Colombia, Ecuador, Chile and Peru could raise these issues in IATTC and SPRFMO, thus encouraging these institutions to improve efforts to protect the marine environment;

8.3.3 Recommendations on Strengthening Compliance

- l) The application of sanctions and penalties is also needed when States overfish. They should be efficiently implemented and integrated within the institutions' conventions, particularly in IATTC;

- m) The most important step will be for the region to build and strengthen a compliance and enforcement framework through strengthening each institution. This can also be done by promoting collaboration between IATTC and SPRFMO, and other relevant RFMOs, and the South American coastal and port States;
- n) In this respect, IATTC's Antigua Convention needs to be strengthened through appropriate resolutions and, in the long-term, through its revision. IATTC could also benefit from having its performance reviewed in order to highlight its management strengths and weaknesses.

8.4 Recommendations for Further Studies

While this thesis looked into the conservation of high seas biodiversity from a fisheries-threat perspective, other threats will need to be considered if a comprehensive study on high seas biodiversity conservation is to be undertaken for the Southeast Pacific. It is therefore recommended that a task force or working group be established, ideally as a cooperative mechanism under the three regional institutions, to look into ways to comprehensively improve the conservation of high seas biodiversity in the Southeast Pacific. This could also include political and socio-economic challenges that have not been accounted for in this thesis. Furthermore, a cost-benefit analysis should be undertaken as a complementary study to this one to help reduce resource waste and more efficiently allocate resources while maximising the benefits gained from managing high seas living resources in this region.

It is also to be noted that this thesis focused on a more theoretical than applied approach as only meeting reports, commission resolutions and recommendations as well as other relevant information found on the three regional institutions' websites were used to evaluate measures implemented by IATTC and SPRFMO. While this provides a more impartial and objective account of what is happening in the Southeast Pacific, the actual implementation of measures will need to be fully evaluated in order to more comprehensively assess the compliance and enforcement needs for this region. Furthermore, SPRFMO being a newly established institution, the outcomes of this thesis are likely to be quickly out-dated and therefore warrant a continuous monitoring of the institutional developments in this region and the significance for the conservation and sustainable use of high seas biodiversity in the Southeast Pacific.

8.5 Priorities for the Southeast Pacific

The immediate priority for the Southeast Pacific is to establish a task force or working group as a cooperative mechanism under the three regional institutions to look into ways to comprehensively improve and to commit to the conservation of high seas biodiversity in the Southeast Pacific.

Another key priority for this region is to strengthen cooperation and collaboration between the three institutions' secretariats and committees on matters of common interest and concern. These include the collection of scientific data, monitoring, enforcement and compliance and the establishment of common, or at least complementary and non-conflicting, conservation and management measures.

Finally, another priority for the Southeast Pacific is to make sure that these institutions undergo regular, externally audited performance reviews. This will allow for regular checking and reporting on the progress made to date on the conservation of high seas biodiversity. It will also ensure that these institutions' conventions and resolutions are up-to-date with the requirements under the international legal framework for the conservation and sustainable use of high seas biodiversity.

8.6 Conclusion

This thesis concludes that, although this region has several opportunities to strengthen the conservation and sustainable use of high seas biodiversity, it still has to overcome a range of institutional, cooperative and management challenges. In particular, more ecosystem-based conservation measures will need to be adopted by the regional institutions and compliance and enforcement of such measures strengthened. By overcoming these shortcomings and increasing cooperation and collaboration between the three regional institutions, this region should be able to achieve a better level of conservation and management of high seas biodiversity, despite the current absence of a comprehensive global legal framework for this purpose. The level of high seas biodiversity conservation that States aspire to at the regional level is for them to decide. This can be done through the adoption of biodiversity conservation and management plans at their level, pending the adoption of a comprehensive implementing agreement for the conservation and sustainable use of marine biodiversity in areas beyond national

jurisdiction (ABNJ) under the *United Nations Convention on the Law of the Sea* (LOSC).

It is hoped that this thesis will contribute towards the development of more comprehensive biodiversity studies for the Southeast Pacific as well as similar assessment studies for other regions in the world with the aim of providing a useful insight in their institutional and legal strengths and weaknesses in conserving and sustainably using high seas biodiversity.

BIBLIOGRAPHY

A. BOOKS

Allen, Robin, James Joseph and Dale Squires, *Conservation and Management of Transnational Tuna Fisheries* (Wiley-Blackwell, 2010)

Allsopp, Michelle, Richard Page, Paul Johnston and David Santillo, *State of the World's Oceans* (Springer, 2009)

Barkin, J Samuel and Elizabeth R DeSombre, *Saving Global Fisheries: Reducing Fishing Capacity to Promote Sustainability* (MIT Press, 2013)

Birnie, Patricia, Alan Boyle and Catherine Redgwell, *International Law and the Environment* (Oxford University Press, 3rd ed., 2009)

Buck, Susan J, *The Global Commons: an Introduction* (Earthscan, 1998)

Craik, Neil, *The International Law of Environmental Impact Assessment: Process, Substance and Integration* (Cambridge University Press, 2008)

De Yturriaga, José Antonio, *The International Regime of Fisheries: From UNCLOS 1982 to the Presential Sea* (Martinus Nijhoff, 1997)

Feenstra, Robert, *Hugo Grotius Mare Liberum 1609-2009* (Brill Academic Publishers, 2009)

Freestone, David and Ellen Hey, *The Precautionary Principle and International Law: the Challenge of Implementation* (Kluwer Law International, 1995)

Garcia, Serge M, Jake Rice and Anthony Charles, *Governance of Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution* (Wiley-Blackwell, 2014)

Kiss, Alexandre and Dinah Shelton, *Guide to International Environmental Law* (Martinus Nijhoff, 2007)

Love, Patrick, *Fisheries: While Stocks Last?* (OECD Publishing, 2010)

Roberts, Julian, *Marine Environmental Protection and Biodiversity Conservation: The Application and Future Development of the IMO's Particularly Sensitive Sea Area Concept* (Springer, 2007)

Selden, John, *Mare Clausum seu de Dominio Maris Libri Duo* (Londini, 1635)

Trouwborst, Arie, *Evolution and Status of the Precautionary Principle in International Law* (Kluwer Law International, 2002)

Vogler, John, *The Global Commons: a Regime Analysis* (Wiley, 1995)

Warner, Robin, *Protecting the Oceans Beyond National Jurisdiction: Strengthening the International Law Framework* (Martinus Nijhoff, 2009)

B. BOOK CHAPTERS

Anand, R P, 'Changing Concepts of Freedom of the Seas: a Historical Perspective' in Jon M Van Dyke, Durwood Zaelke and Grant Hewison (eds), *Freedom for the Seas in the 21st Century: Ocean Governance and Environmental Harmony* (Island Press, 1993) 72

Brunnée, Jutta, 'Common Areas, Common Heritage, and Common Concern' in Daniel Bodansky, Jutta Brunnée and Ellen Hey (eds), *The Oxford Handbook of International Environmental Law* (Oxford University Press, 2007) 550

Carpenter, Angela, 'International Protection of the Marine Environment' in Adam D Nemeth (ed), *The Marine Environment: Ecology, Management and Conservation* (Nova Science Publishers, 2011) 51

Charles, A, S M Garcia and J Rice, 'A Tale of Two Streams: Synthesizing Governance of Marine Fisheries and Biodiversity Conservation' in Serge M Garcia, Jake Rice and Anthony Charles (eds), *Governance of Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution* (Wiley-Blackwell, 2014) 413

D'Amato, Anthony, 'Good Faith' in R Bernhardt, Max Planck Institute for Comparative Public Law and International Law (eds), *Encyclopedia of Public International Law* (1992) 599

De Marffy-Mantuano, Annick, 'What International Coordination for Marine Biodiversity Governance in Areas Beyond National Jurisdiction?' in Julien Rochette (ed), *Towards a New Governance of High Seas Biodiversity* (Institut Oceanographique, 2009) 205

Dunn, Euan, 'Reducing Seabird Bycatch: From Identifying Problems to Implementing Policy' in Davor Vidas and Peter Johann Schei (eds), *The World Ocean in Globalisation: Climate Change, Sustainable Fisheries, Biodiversity, Shipping, Regional Issues* (Martinus Nijhoff, 2011) 247

Dutton, Peter A, 'The International Dynamics of the Controversy over Military Activities in the EEZ' in Jon M van Dyke, Sherry P Broder, Seokwoo Lee and Jin-Hyun Paik (eds), *Governing Ocean Resources: New Challenges and Emerging Regimes: a Tribute to Judge Choon-Ho Park* (Martinus Nijhoff, 2013) 287

Floit, Catherine, 'Reconsidering Freedom of the High Seas: Protection of Living Marine Resources on the High Seas' in Jon M Van Dyke, Durwood Zaelke and Grant Hewison (eds), *Freedom for the Seas in the 21st Century: Ocean Governance and Environmental Harmony* (Island Press, 1993) 310

Garcia, S M, J Rice and A Charles, 'Governance of Marine Fisheries and Biodiversity Conservation: A History' in Serge M Garcia, Jake Rice and Anthony Charles (eds),

Governance of Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution (Wiley-Blackwell, 2014) 3

Garcia, S M, J Rice and A Charles, 'Governance of Marine Fisheries and Biodiversity Conservation: Convergence or Coevolution?' in Serge M Garcia, Jake Rice and Anthony Charles (eds), *Governance of Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution* (Wiley-Blackwell, 2014) 18

Garcia, S M, 'Annex 1: History of Fisheries and Biodiversity Conservation: A Timeline of Key Events (1850-2012)' in Serge M Garcia, Jake Rice and Anthony Charles (eds), *Governance of Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution* (Wiley-Blackwell, 2014) 429

Gehring, Thomas and Sebastian Oberthür, 'Interplay: Exploring Institutional Interaction' in Oran R Young, Leslie A King and Heike Schroeder (eds), *Institutions and Environmental Change: Principal Findings, Applications, and Research Frontiers* (MIT Press, 2008) 187

Gjerde, Kristina M, 'Framing the Debate on Marine Biodiversity Conservation Beyond National Jurisdiction: Processes Underway and Main Deadlines' in Julien Rochette (ed), *Towards a New Governance of High Seas Biodiversity* (Institut Oceanographique, 2009) 19

Gjerde, Kristina M, 'High Seas Fisheries Governance: Prospects and Challenges in the 21st Century' in Davor Vidas and Peter Johann Schei (eds), *The World Ocean in Globalisation: Climate Change, Sustainable Fisheries, Biodiversity, Shipping, Regional Issues* (Martinus Nijhoff, 2011) 221

Gullett, Warwick, 'Fishing industry: Taiwan' in Mary Bagg (ed), *Berkshire Encyclopaedia of China: Modern and Historic Views of the World's Newest and Oldest Global Power* (Berkshire Publishing, 2009) 824

Hoydal, K, D Johnson, and A H Hoel, 'Regional Governance: The Case of NEAFC and OSPAR' in Serge M Garcia, Jake Rice and Anthony Charles (eds), *Governance of Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution* (Wiley-Blackwell, 2014) 225

Kitchingman, Adrian and Sherman Lai, 'Inferences on Potential Seamount Locations from Mid-Resolution Bathymetric Data' in Telmo Morato and Daniel Pauly (eds), *Seamounts: Biodiversity and Fisheries* (Fisheries Centre Research Reports 12(5), 2004) 7

Kitchingman, Adrian, Sherman Lai, Telmo Morato and Daniel Paula, 'How Many Seamounts Are There and Where Are They Located?' in Tony J Pitcher, Telmo Morato, Paul J B Hart, Malcolm R Clark, Nigel Haggan, Ricardo S Santos (eds), *Seamounts: Ecology, Fisheries and Conservation* (Blackwell Publishing, 2007) 26

Marauhn, Thilo, 'Changing Role of the State' in Daniel Bodansky, Jutta Brunnée and Ellen Hey (eds), *The Oxford Handbook of International Environmental Law* (Oxford University Press, 2007) 727

McConnell, Moira L, 'Observations on Compliance and Enforcement and Regional Fisheries Institutions: Overcoming the Limitations of the Law of the Seas' in Dawn A Russell and David L VanderZwaag (eds), *Recasting Transboundary Fisheries Management Arrangements in Light of Sustainability Principles: Canadian and International Perspectives* (Martinus Nijhoff, 2010) 71

Molenaar, Erik, 'Port State Jurisdiction to Combat IUU Fishing: The Port State Measures Agreement' in Dawn A Russell and David L VanderZwaag (eds), *Recasting Transboundary Fisheries Management Arrangements in Light of Sustainability Principles: Canadian and International Perspectives* (Martinus Nijhoff, 2010) 369

Preikshot, Dave and Daniel Pauly, 'Global Fisheries and Marine Conservation: Is Coexistence Possible?' in Elliot A Norse and Larry B Crowder (eds), *Marine Conservation Biology: The Science of Maintaining the Sea's Biodiversity* (Island Press, 2005) 185

Ray, G Carleton and Jerry McCormick-Ray, 'In Pursuit of Marine Conservation' in G Carleton Ray and Jerry McCormick-Ray (eds), *Marine Conservation: Science, Policy, and Management* (Wiley-Blackwell, 2014) 1

Rayfuse, Rosemary, 'The Challenge of Sustainable High Seas Fisheries' in Nico Schrijver and Friedl Weiss (eds), *International Law and Sustainable Development: Principles and Practice* (Martinus Nijhoff, 2004) 467

Rayfuse, Rosemary, 'Biological Resources' in Daniel Bodansky, Jutta Brunnée and Ellen Hey (eds), *The Oxford Handbook of International Environmental Law* (Oxford University Press, 2007) 362

Rayfuse, Rosemary, 'Non-Flag State Enforcement and Protection of the Marine Environment: Responding to IUU Fishing' in Myron H Nordquist, Tommy T B Koh and John Norton Moore (eds), *Freedom of Seas, Passage Rights and the 1982 Law of the Sea Convention* (Martinus Nijhoff, 2009) 573

Rayfuse, Rosemary, 'Moving Beyond the Tragedy of the Global Commons: The Grotian Legacy and the Future of Sustainable Management of the Biodiversity of the High Seas' in David Leary and Balakrishna Pisupati (eds), *The Future of International Environmental Law* (United Nations University Press, 2010) 201

Ridgeway, Lori, 'Governance Beyond National Jurisdiction. Linkages to Sectoral Management' in Julien Rochette (ed), *Towards a New Governance of High Seas Biodiversity* (Institut Oceanographique, 2009) 245

Russell, Dawn A and David L VanderZwaag, 'Ecosystem and Precautionary Approaches to International Fisheries Governance: Beacons of Hope, Seas of Confusion and Illusion' in Dawn A Russell and David L VanderZwaag (eds), *Recasting Transboundary Fisheries Management Arrangements in Light of Sustainability Principles: Canadian and International Perspectives* (Martinus Nijhoff, 2010) 25

Scott, Karen N, 'Transboundary Environmental Governance and Emerging Environmental Threats: Geo-engineering in the Marine Environment' in Robin Warner and Simon Marsden (eds), *Transboundary Environmental Governance: Inland, Coastal and Marine Perspectives* (Ashgate Publishing, 2012) 223

Smith, Craig R, L A Levin, J A Koslow, P A Tyler, A G Glover, 'The Near Future of the Deep-Sea Floor Ecosystems' in N Polunin (ed), *Aquatic Ecosystems: Trends and Global Prospects* (Cambridge University Press, 2008) 334

Van Bohemen, Gerard, 'High Seas Fisheries Management: Reflections on Experience with Regional Fisheries Management Organisations in the South Pacific' in Davor Vidas and Peter Johann Schei (eds), *The World Ocean in Globalisation: Climate Change, Sustainable Fisheries, Biodiversity, Shipping, Regional Issues* (Martinus Nijhoff, 2011) 233

Van Dyke, Jon M, 'International Governance and Stewardship of the High Seas and its Resources' in Jon M Van Dyke, Durwood Zaelke and Grant Hewison (eds), *Freedom for the Seas in the 21st Century: Ocean Governance and Environmental Harmony* (Island Press, 1993) 13

Van Dyke, Jon M, 'Giving Teeth to the Environmental Obligations in the LOSC' in Alex G Oude Elferink and Donald R Rothwell (eds), *Oceans Management in the 21st Century: Institutional Frameworks and Responses* (Martinus Nijhoff, 2004)

Warner, R, K M Gjerde and D Freestone, 'Regional Governance for Fisheries and Biodiversity' in Serge M Garcia, Jake Rice and Anthony Charles (eds), *Governance of*

Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution (Wiley-Blackwell, 2014) 211

Wolfrum, Rüdiger and Nele Matz, 'The Interplay of the United Nations Convention on the Law of the Sea and the Convention on Biological Diversity' in Jochen A Frowein and Rüdiger Wolfrum (eds), *Max Planck Yearbook of United Nations Law* (Kluwer Law International, 2000) 445

Young, Oran R, 'Institutional Interplay: The Environmental Consequences of Cross-Scale Interactions' in Elinor Ostrom, Thomas Dietz, Nives Dolšák, Paul C Stern, Susan Stonich and Elke U Weber (eds), *The Drama of the Commons* (National Academy Press, 2002) 263

C. JOURNAL ARTICLES

Abers, Geoffrey A, Barry Parsons and Jeffrey K Weissel, 'Seamount Abundances and Distributions in the Southeast Pacific' (1988) 87 *Earth and Planetary Science Letters* 137

Anticamara, J A, R Watson, A Gelchu and D Pauly, 'Global Fishing Effort (1950-2010): Trends, Gaps, and Implications' 107 *Fisheries Research* 131

Appeltans, Ward, Shane T Ahyong, Gary Anderson, Martin V Angel, Tom Artois, Nicolas Bailly, Roger Bamber, Anthony Barber, Ilse Bartsch, Annalisa Berta, Magdalena Błazewicz-Paszkowycz, Phil Bock, Geoff Boxshall, Christopher B Boyko, Simone Nunes Branda, Rod A Bray, Niel L Bruce, Stephen D Cairns, Tin-Yam Chan, Lanna Cheng, Allen G Collins, Thomas Cribb, Marco Curini-Galletti, Farid Dahdouh-Guebas, Peter J F Davie, Michael N Dawson, Olivier De Clerck, Wim Decock, Sammy De Grave, Nicole J de Voogd, Daryl P Domning, Christian C Emig, Christer Erséus, William Eschmeyer, Kristian Fauchald, Daphne G Fautin, Stephen W Feist, Charles H J M Fransen, Hidetaka Furuya, Oscar Garcia-Alvarez, Sarah Gerken, David Gibson, Arjan Gittenberger, Serge Gofas, Liza Gómez-Daglio, Dennis P Gordon, Michael D Guiry, Francisco Hernandez, Bert W Hoeksema, Russell R Hopcroft, Damía Jaume, Paul Kirk, Nico Koedam, Stefan Koenemann, Jürgen B Kolb, Reinhardt M Kristensen, Andreas Kroh, Gretchen Lambert,

David B Lazarus, Rafael Lemaitre, Matt Longshaw, Jim Lowry, Enrique Macpherson, Laurence P Madin, Christopher Mah, Gill Mapstone, Patsy A McLaughlin, Jan Mees, Kenneth Meland, Charles G Messing, Claudia E Mills, Tina N Molodtsova, Rich Mooi, Birger Neuhaus, Peter K L Ng, Claus Nielsen, Jon Norenburg, Dennis M Opresko, Masayuki Osawa, Gustav Paulay, William Perrin, John F Pilger, Gary C B Poore, Phil Pugh, Geoffrey B Read, James D Reimer, Marc Rius, Rosana M Rocha, José I Saiz-Salinas, Victor Scarabino, Bernd Schierwater, Andreas Schmidt-Rhaesa, Kareen E Schnabel, Marilyn Schotte, Peter Schuchert, Enrico Schwabe, Hendrik Segers, Caryn Self-Sullivan, Noa Shenkar, Volker Siegel, Wolfgang Sterrer, Sabine Stöhr, Billie Swalla, Mark L Tasker, Erik V Thuesen, Tarmo Timm, M Antonio Todaro, Xavier Turon, Seth Tyler, Peter Uetz, Jacob van der Land, Bart Vanhoorne, Leen P van Ofwegen, Rob W M van Soest, Jan Vanaverbeke, Genefor Walker-Smith, T Chad Walter, Alan Warren, Gary C Williams, Simon P Wilson and Mark J Costello, ‘The Magnitude of Global Marine Species Diversity’ (2012) 22 *Current Biology* 2189

Ardron, Jeff A, Rosemary Rayfuse, Kristina Gjerde and Robin Warner, ‘The Sustainable Use and Conservation of Biodiversity in ABNJ: What Can Be Achieved Using Existing International Agreements?’ (2014) 49 *Marine Policy* 98

Ban, Natalie C, Nicholas J Bax, Kristina M Gjerde, Rodolphe Devillers, Daniel C Dunn, Piers K Dunstan, Alistair J Hobday, Sara M Maxwell, David M Kaplan, Robert L Pressey, Jeff A Ardron, Edward T Game and Patrick N Halpin, ‘Systematic Conservation Planning: A Better Recipe for Managing the High Seas for Biodiversity Conservation and Sustainable Use’ (2014) 7(1) *Conservation Letters* 41

Ban, Natalie C, Sara M Maxwell, Daniel C Dunn, Alistair J Hobday, Nicholas J Bax, Jeff Ardron, Kristina M Gjerde, Edward T Game, Rodolphe Devillers, David M Kaplan, Piers K Dunstan, Patrick N Halpin, Robert L Pressey, ‘Better Integration of Sectoral Planning and Management Approaches for the Interlinked Ecology of the Open Oceans’ (2014) 49 *Marine Policy* 127

Barnes, Richard A, 'Consolidating Governance Principles for Areas Beyond National Jurisdiction' (2012) 27 *The International Journal of Marine and Coastal Law* 261

Beddington, J R, D J Agnew and C W Clark, 'Current Problems in the Management of Marine Fisheries' (2007) 316 *Science* 1713

Bjørndal, Trond, 'Overview, Roles, and Performance of the North East Atlantic Fisheries Commission (NEAFC)' (2009) 33 *Marine Policy* 685

Block, B A, I D Jonsen, S J Jorgensen, A J Winship, S A Shaffer, S J Bograd, E L Hazen, D G Foley, G A Breed, A-L Harrison, J E Ganong, A Swithenbank, M Castleton, H Dewar, B R Mate, G L Shillinger, K M Schaefer, S R Benson, M J Weise, R W Henry and D P Costa, 'Tracking Apex Marine Predator Movements in a Dynamic Ocean' (2011) 86 *Nature* 475

Broggiato, Arianna, 'Traditional and New Challenges to the Marine Environment' (2008) 38(6) *Environmental Policy and Law* 319

Burhenne-Guilmin, Françoise, 'Hotspots in Biodiversity Law' (2009) 39(1) *Environmental Policy and Law* 40

Caddy, J F, 'Deciding on Precautionary Management Measures for a Stock Based on a Suite of Limit Reference Points (LRPs) as a Basis for a Multi-LRP Harvest Law' (1999) 32 *NAFO Scientific Council Studies* 55

Caddy, J F and D J Agnew, 'An Overview of Recent Global Experience with Recovery Plans for Depleted Marine Resources and Suggested Guidelines for Recovery Planning' (2004) 14 *Reviews in Fish Biology and Fisheries* 43

Caddy, J F, E Wade, T Surette, M Hebert and M Moriyasu, 'Using an Empirical Traffic Light Procedure for Monitoring and Forecasting in the Gulf of St. Lawrence Fishery for the Snow Crab, *Chionoecetes opilio*' (2005) 76 *Fisheries Research* 123

Chapin III, F Stuart, Erika S Zavaleta, Valerie T Eviner, Rosamond L Naylor, Peter M Vitousek, Chavez, Francisco P, Arnaud Bertrand, Renato Guevara-Carrasco, Pierre Soler and Jorge Csirke, 'The Northern Humboldt Current System: Brief History, Present Status and a View Towards the Future' (2008) 79 *Progress in Oceanography* 95

Costanza, Robert, Ralph d'Arge, Rudolf de Groot, Stephen Farber, Monica Grasso, Bruce Hannon, Karin Limburg, Shahid Naeem, Robert V O'Neill, Jose Paruelo, Robert G Raskin, Paul Sutton and Marjan van den Belt, 'The Value of the World's Ecosystem Services and Natural Capital' (1997) 387 *Nature* 253

Costanza, Robert, 'The Ecological, Economic, and Social Importance of the Oceans' (1999) 31 *Ecological Economics* 199

Cullis-Suzuki, Sarika and Daniel Pauly, 'Failing the High Seas: a Global Evaluation of Regional Fisheries Management Organization' (2010) 34 *Marine Policy* 1036

Currie, Duncan E J and Kateryna Wowk, 'Climate Change and CO₂ in the Oceans and Global Oceans Governance' (2009) 4 *Carbon and Climate Law Review* 387

De Bruyn, Paul, Hilario Murua and Martín Aranda, 'The Precautionary Approach to Fisheries Management: How is This Taken into Account by Tuna Regional Fisheries Management Organisations (RFMOs)' 38 *Marine Policy* 397

Dijkstra, H A, 'The ENSO Phenomenon: Theory and Mechanisms' (2006) 6 *Advances in Geosciences* 3

Ekstrom, Julia A, Oran R Young, Steve D Gaines, Maria Gordon and Bonnie J McCay, 'A Tool to Navigate Overlaps in Fragmented Ocean Governance' (2009) 33 *Marine Policy* 532

Englender, Dorota, JennyKirschey, AlekeStöfen and AndreasZink, 'Cooperation and Compliance Control in Areas Beyond National Jurisdiction' (2014) 49 *Marine Policy* 186

Espaliat Larson, Astrid and María José Henríquez, 'Conflictos Pesqueros Contemporáneos: la Búsqueda de una Gestión Racional' (2003) 36(143) *Estudios Internacionales* 127

Flothmann, Stefan, Kristín von Kistowski, Emily Dolan, Elsa Lee, Frank Meere and Gunnar Album, 'Closing Loopholes: Getting Illegal Fishing Under Control' (2010) 328 *Science* 1235

Franckx, Erik, 'Pacta Tertiis and the Agreement for the Implementation of the Straddling and Highly Migratory Fish Stocks Provisions of the United Nations Convention on the Law of the Sea' (2000) 8 *Tulane Journal of International and Comparative Law* 49

Frantzi, Sofia, 'What Determines the Institutional Performance of Environmental Regimes? A Case Study of the Mediterranean Action Plan' (2008), 32 *Marine Policy* 618

Freestone, David, 'The Road from Rio: International Environmental Law After The Earth Summit' (1994) 6(2) *Journal of Environmental Law* 193

Freestone, David, 'Principles Applicable to Modern Oceans Governance' (2008) 23 *International Journal of Marine and Coastal Law* 385

Freestone, David, 'Modern Principles of High Seas Governance: The Legal Underpinnings' (2009) 39(1) *Environmental Policy and Law* 44

Freestone, D and K K Morrison, 'The Sargasso Sea Alliance: Seeking to Protect the Sargasso Sea' (2012) 27 *The International Journal of Marine and Coastal Law* 647

Freestone, David, 'International Governance, Responsibility and Management of Areas Beyond National Jurisdiction' (2012) 27 *The International Journal of Marine and Coastal Law* 191

Freestone, David, David Johnson, Jeff Ardron, Kate Killerlain Morrison, Sebastian Unger, 'Can Existing Institutions Protect Biodiversity in Areas Beyond National Jurisdiction? Experiences from Two On-going Processes' (2014) 49 *Marine Policy* 167

Gilman, Eric L, 'Bycatch Governance and Best Practice Mitigation Technology in Global Tuna Fisheries' (2011) 35 *Marine Policy* 590

Gilman, Eric and Eric Kingma, 'Standard for Assessing Transparency in Information on Compliance with Obligations of Regional Fisheries Management Organizations: Validation through Assessment of the Western and Central Pacific Fisheries Commission' (2013) 84 *Ocean and Coastal Management* 31

Gjerde, Kristina M and Anna Rulska-Domino, 'Marine Protected Areas Beyond National Jurisdiction: Some Practical Perspectives for Moving Ahead' (2012) 27 *The International Journal of Marine and Coastal Law* 351

Gjerde, Kristina M, 'Challenges to Protecting the Marine Environment Beyond National Jurisdiction' (2012) 27 *The International Journal of Marine and Coastal Law* 839

Gjerde, Kristina M, Duncan Currie, Kateryna Wowk and Karen Sack, 'Ocean in Peril: Reforming the Management of Global Ocean Living Resources in Areas Beyond National Jurisdiction' (2013) 74 *Marine Pollution Bulletin* 540

Gordon, H Scott, 'The Economic Theory of a Common-Property Resource: The Fishery' (1954) 62(2) *Journal of Political Economy* 124

Halpern, Benjamin S, Shaun Walbridge, Kimberly A Selkoe, Carrie V Kappel, Fiorenza Micheli, Caterina D'Agrosa, John F Bruno, Kenneth S Casey, Colin Ebert, Helen E Fox, Rod Fujita, Dennis Heinemann, Hunter S Lenihan, Elizabeth M P Madin, Matthew T Perry, Elizabeth R Selig, Mark Spalding, Robert Steneck and Reg Watson, 'A Global Map of Human Impact on Marine Ecosystems' (2008) 319(5865) *Science* 948

Hardin, Garrett, 'The Tragedy of the Commons' (1968) 162 *Science* 1243

Hargrave, B T, 'A Traffic Light Decision System for Marine Finfish Aquaculture Siting' (2002) 45 *Ocean and Coastal Management* 215

Heather L Reynolds, David U Hooper, Sandra Lavorel, Osvaldo E Sala, Sarah E Hobbie, Michelle C Mack and Sandra Díaz, 'Consequences of Changing Biodiversity' (2000) 405 *Nature* 234

Henriksen, Tore, 'Revisiting the Freedom of Fishing and Legal Obligations on States Not Party to Regional Fisheries Management Organizations' (2009) 40 *Ocean Development and International Law* 80

Hinds, Lennox, 'Oceans Governance and the Implementation Gap' (2003) 27 *Marine Policy* 349

Hoel, Alf Hakon, 'Marine Biodiversity and Institutional Interplay' (2003) 30 *Coastal Management* 25

Houghton, Katherine, 'Identifying New Pathways for Ocean Governance: The Role of Legal Principles in Areas Beyond National Jurisdiction' (2014) 49 *Marine Policy* 118

Jacquet, Jennifer, John Hocesvar, Sherman Lai, Patricia Majluf, Nathan Pelletier, Tony Pitcher, Enric Sala, Rashid Sumaila and Daniel Pauly, 'Conserving Wild Fish in a Sea of Market-Based Efforts' (2009) 44(1) *Oryx* 45

Jóhannsdóttir, Aðalheiður, Ian Cresswell and Peter Bridgewater, 'The Current Framework for International Governance of Biodiversity: Is It Doing More Harm Than Good?' (2010) 19(2) *Reciel* 139

Johnson, David E, Carole Martinez, Ole Vestergaard, Dominique Duval-Diop, Marie Romani, Martha C McConnell, Craig Beatty, Ronny Jumeau and Kate Brown, 'Building the Regional Perspective: Platforms for Success' (2014) 24(Suppl. 2) *Aquatic Conservation: Marine and Freshwater Ecosystems* 75

Johnston, Douglas M and David L VanderZwaag, 'The Ocean and International Environmental Law: Swimming, Sinking, and Treading Water at the Millennium' (2000) 43 *Ocean and Coastal Management* 141

Kell, Laurence T, Paul De Bruyn, Iago Mosqueira and Arni Magnusson, 'An Evaluation of the Performance of the Kobe Strategy Matrix: An Example based upon a Biomass Dynamic Assessment Model' (2012) 68(3) *Collective Volume of Scientific Papers ICCAT* 1018

Koeller, P, L Savard, D G Parsons and C Fu, 'A Precautionary Approach to Assessment and Management of Shrimp Stocks in the Northwest Atlantic' (2000) 27 *Journal of Northwest Atlantic Fishery Science* 235

Koremenos, Barbara, Charles Lipson and Duncan Snidal, 'The Rational Design of International Institutions' (2001) 55(4) *International Organization* 761

Kvalvik, Ingrid, 'Managing Institutional Overlap in the Protection of Marine Ecosystems on the High Seas. The Case of the North East Atlantic' (2012) 56 *Ocean & Coastal Management* 35

Llanos Mansilla, Hugo, 'La Comisión Permanente del Pacífico Sur y su Respuesta a la Corte Internacional de Justicia' (2011) 2(1) *Revista de la Facultad de Derecho* 95

Longo, Stefano B and Rebecca Clausen, 'The Tragedy of the Commodity: The Overexploitation of the Mediterranean Bluefin Tuna Fishery' (2011) 24(3) *Organization and Environment* 312

Marr, Simon, 'The Southern Bluefin Tuna Cases: The Precautionary Approach and Conservation and Management of Fish Resources' (2000) 11(4) *European Journal of International Law* 815

Matz-Lück, Nele and Johannes Fuchs, 'The Impact of OSPAR on Protected Area Management Beyond National Jurisdiction: Effective Regional Cooperation or a Network of Paper Parks?' (2014) 49 *Marine Policy* 155

McDorman, Ted L, 'Implementing Existing Tools: Turning Words into Actions – Decision-Making Processes of Regional Fisheries Management Organisations (RFMOs)' (2005) 20(3) *The International Journal of Marine and Coastal Law* 423

McWhinnie, Stephanie F, 'The Tragedy of the Commons in International Fisheries: An Empirical Examination' (2009) 57 *Journal of Environmental Economics and Management* 321

Miloslavich, Patricia, Eduardo Klein, Juan M Díaz, Cristián E Hernández, Gregorio Bigatti, Lucia Campos, Felipe Artigas, Julio Castillo, Pablo E Penchaszadeh, Paula E Neill, Alvar Carranza, María V Retana, Juan M Díaz de Astarloa, Mirtha Lewis, Pablo Yorio, María L Piriz, Diego Rodríguez, Yocie Yoneshigue-Valentin, Luiz Gamboa and Alberto Martín, 'Marine Biodiversity in the Atlantic and Pacific Coasts of South America: Knowledge and Gaps' (2011) 6(1) *Plos One* 1

Molenaar, Erik Jaap, 'The Concept of "Real Interest" and Other Aspects of Co-operation through Regional Fisheries Management Mechanisms' (2000) 15 *International Journal of Marine and Coastal Law* 475

Molenaar, Erik Jaap, 'Participation, Allocation and Unregulated Fishing: The Practice of Regional Fisheries Management Organisations' (2003) 18(4) *The International Journal of Marine and Coastal Law* 457

Molenaar, Erik J, 'Managing Biodiversity in Areas Beyond National Jurisdiction' (2007) 22(1) *The International Journal of Marine and Coastal Law* 89

Molenaar, Erik Jaap, 'Port State Jurisdiction: Towards Comprehensive, Mandatory and Global Coverage' (2007) 38 *Ocean Development and International Law* 225

Molenaar, Erik J and Alex G Oude Elferink, 'Marine Protected Areas in Areas Beyond National Jurisdiction: The Pioneering Efforts under the OSPAR Convention' (2009) 5(1) *Utrecht Law Review* 5

Montecino, Vivian and Carina B Lange, 'The Humboldt Current System: Ecosystem Components and Processes, Fisheries, and Sediment Studies' (2009) 83 *Progress in Oceanography* 65

Mora, Camilo, Derek P Tittensor, Sina Adl, Alastair G B Simpson and Boris Worm, 'How Many Species are there on Earth and in the Ocean?' (2011) 9(8) *PLoS Biology* 1

Morales, Carmen E and Carina B Lange, 'Oceanographic Studies in the Humboldt Current System off Chile: An Introduction' (2004) 51 *Deep-Sea Research II* 2345

Morato, Telmo, Simon D Hoylea, Valerie Allaina and Simon J Nicola, 'Seamounts are Hotspots of Pelagic Biodiversity in the Open Ocean' (2010) 107(21) *PNAS* 9707

Mullon, Christian, Pierre Fréon and Philippe Cury, 'The Dynamics of Collapse in World Fisheries' (2005) 6 *Fish and Fisheries* 111

Murawski, Steven A, 'Rebuilding Depleted Fish Stocks: the Good, the Bad, and, mostly, the Ugly' (2010) 67 *ICES Journal of Marine Science* 1830

Neumayer, Eric, 'How Regime Theory and the Economic Theory of International Environmental Cooperation Can Learn From Each other' (2001) 1(1) *Global Environmental Politics* 122

O'Leary, Bethan C, James C R Smart, Fiona C Neale, Julie P Hawkins, Stephanie Newman, Amy C Milman and Callum M Roberts, 'Fisheries Mismanagement' (2011) 62(12) *Marine pollution bulletin* 2642

O'Leary, B C, R L Brown, D E Johnson, H von Nordheim, J Ardron, T Packeiser and C M Roberts, 'The First Network of Marine Protected Areas (MPAs) in the High Seas: The Process, the Challenges and Where Next' (2012) 36 *Marine Policy* 598

Oberthür, Sebastian, 'Interplay Management: Enhancing Environmental Policy Integration among International Institutions' (2009) 9 *International Environmental Agreements* 371

Orellana, Marcos, 'The EU and Chile Suspend the Swordfish Case Proceedings at the WTO and the International Tribunal of the Law of the Sea' (2001) 6(1) *American Society of International Law Insights*

Orellana, Marcos A, 'The Swordfish Dispute between the EU and Chile at the ITLOS and the WTO' (2002) 71 *Nordic Journal of International Law* 55

Orr, James C, Victoria J Fabry, Olivier Aumont, Laurent Bopp, Scott C Doney, Richard A Feely, Anand Gnanadesikan, Nicolas Gruber, Akio Ishida, Fortunat Joos, Robert M Key, Keith Lindsay, Ernst Maier-Reimer, Richard Matear, Patrick Monfray, Anne Mouchet, Raymond G Najjar, Gian-Kasper Plattner, Keith B Rodgers, Christopher L Sabine, Jorge L Sarmiento, Reiner Schlitzer, Richard D Slater, Ian J Totterdell, Marie-France Weirig,

Yasuhiro Yamanaka and Andrew Yool, 'Anthropogenic Ocean Acidification over the Twenty-First Century and its Impact on Calcifying Organisms' (2005) 437 *Nature* 681

Orrego Vicuña, Francisco, 'La Aplicación de la Convención de las Naciones Unidas Sobre el Derecho del Mar en el Derecho y la Práctica de América Latina' (1994) *Tecnos* 337

Orrego Vicuna, Francisco, 'Trends and Issues in the Law of the Sea as Applied in Latin America' (1995) 26(2) *Ocean Development and International Law* 93

Ostrom, Elinor, Joanna Burger, Christopher B Field, Richard B Norgaard and David Policansky, 'Revisiting the Commons: Local Lessons, Global Challenges' (1999) 284 *Science* 278

Oude Elferink, Alex G, 'Environmental Impact Assessment in Areas Beyond National Jurisdiction' (2012) 27 *The International Journal of Marine and Coastal Law* 449

Oude Elferink, Alex G, 'Governance Principles for Areas beyond National Jurisdiction' (2012) 27 *The International Journal of Marine and Coastal Law* 205

Pintassilgo, Pedro, Michael Finus, Marko Lindroos and Gordon Munro, 'Stability and Success of Regional Fisheries Management Organizations' (2010) 46 *Environmental and Resource Economics* 377

Ramirez-Llodra, Eva, Paul A Tyler, Maria C Baker, Odd Aksel Bergstad, Malcolm R Clark, Elva Escobar, Lisa A Levin, Lenaick Menot, Ashley A Rowden, Craig R Smith and Cindy L Van Dover, 'Man and the Last Great Wilderness: Human Impact on the Deep Sea' (2011) 6(7) *Plos One* 1

Ramos Ferretti, Eduardo, 'El Régimen Jurídico Internacional de la Pesca en Alta Mar y la OROP del Pacífico Sur' (2013) 31 *Agenda Internacional* 71

Rayfuse, Rosemary, 'To Our Children's Children's Children: From Promoting to Achieving Compliance in High Seas Fisheries' (2005) 20(3) *The International Journal of Marine and Coastal Law* 509

Rayfuse, Rosemary and Robin Warner, 'Securing a Sustainable Future for the Oceans Beyond National Jurisdiction: The Legal Basis for an Integrated Cross-Sectoral Regime for High Seas Governance for the 21st Century' (2008) 23(3) *The International Journal of Marine and Coastal Law* 399

Rayfuse, Rosemary, 'Precaution and the Protection of Marine Biodiversity in Areas Beyond National Jurisdiction' (2012) 27 *The International Journal of Marine and Coastal Law* 773

Rice, Jake, Erlend Moksness, Colin Attwood, Stephen K Brownd, Geir Dahle, Kristina M Gjerde, Ellen Sofie Grefsrud, Richard Kenchington, Alf Ring Kleiven, Patrick McConney, Magnus A K Ngoile, Tor F Næsje, Erik Olsen, Esben Moland Olsen, Jessica Sanders, Chandrika Sharma, Ole Vestergaard and Lena Westlund, 'The Role of MPAs in Reconciling Fisheries Management with Conservation of Biological Diversity' (2012) 69 *Ocean and Coastal Management* 217

Rochette, Julien and Raphaël Billé, 'Governance of Marine Biodiversity Beyond National Jurisdictions: Issues and Perspectives. Report of the International Seminar "Towards a New Governance of High Seas Biodiversity" (Principality of Monaco, March 20-21, 2008)' (2008) 51(12) *Ocean and Coastal Management* 779

Rochette, Julien and Raphaël Billé, 'ICZM Protocols to Regional Seas Conventions: What? Why? How?' (2012) 36 *Marine Policy* 977

Rochette, Julien and Raphaël Billé, 'Bridging the Gap between Legal and Institutional Developments within Regional Seas Frameworks' (2013) 28 *The International Journal of Marine and Coastal Law* 433

Rochette, Julien, Sebastian Unger, Dorothée Herr, David Johnson, Takehiro Nakamura, Tim Packeiser, Alexander Proelss, Martin Visbeck, Andrew Wright and Daniel Cebrian, 'The Regional Approach to the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction' (2014) 49 *Marine Policy* 109

Rosendal, G Kristin, 'Impacts of Overlapping International Regimes: The Case of Biodiversity' (2001) 7 *Global Governance* 95

Rudd, Murray A, 'Scientists' Opinions on the Global Status and Management of Biological Diversity' (2011) 25(6) *Conservation Biology* 1165

Sala, Enric and Nancy Knowlton, 'Global Marine Biodiversity Trends' (2006) 31 *Annual Review of Environment and Resources* 93

Schiffman, Howard S, 'The Evolution of Fisheries Conservation and Management: A Look at the New South Pacific Regional Fisheries Management Organization in Law and Policy' (2010) 28(2) *Thomas M. Cooley Law Review* 182

Schiffman, Howard S, 'The South Pacific Regional Fisheries Management Organization (SPRFMO): An Improved Model of Decision-Making for Fisheries Conservation?' (2013) 3 *Journal of Environmental Studies and Science* 209

Scott, Karen N, 'International Environmental Governance: Managing Fragmentation Through Institutional Connection' (2011) 12 *Melbourne Journal of International Law* 177

Shamsey, John, 'ITLOS vs. Goliath: The International Tribunal for the Law of the Sea Stands Tall with the Appellate Body in the Chilean-EU Swordfish Dispute' (2002) 12 *Transnational Law and Contemporary Problems* 513

Skjaerseth, Jon Birger, 'Protecting the North-East Atlantic: Enhancing Synergies by Institutional Interplay' (2006) 30 *Marine Policy* 157

Stokke, Olav Schram, 'Managing Straddling Stocks: The Interplay of Global and Regional Regimes' (2000) 43 *Ocean and Coastal Management* 205

Stoll, Peter-Tobias and Silja Vöneky, 'The *Swordfish* Case: Law of the Sea v. Trade' (2002) 62 *Max-Planck-Institut für Ausländisches Öffentliches Recht und Völkerrecht* 21

Swan, Judith, 'Port State Measures to Combat IUU Fishing: International and Regional Developments' (2006) 1(7) *Sustainable Development Law and Policy* 38

Sydnese, Are K, 'Regional Fishery Organizations: How and Why Organizational Diversity Matters' (2001) 32(4) *Ocean Development and International Law* 349

Thorpe, Andy and Elizabeth Bennett, 'Globalisation and the Sustainability of World Fisheries: A View from Latin America' (2001) 16 *Marine Resource Economics* 143

Tsamenyi, Martin, 'The Legal Substance and Status of Fishing Entities in International Law' (2006) 37(2) *Ocean Development and International Law* 123

Vallega, Adalberto, 'Ocean Governance in Post-Modern Society – a Geographical Perspective' (2001) 25(6) *Marine Policy* 399

Van Dover, C L, J Aronson, L Pendleton, S Smith, S Arnaud-Haond, D Moreno-Mateos, E Barbier, D Billett, K Bowers, R Danovaro, A Edwards, S Kellert, T Moratom, E Pollard, A Rogers and R Warner, 'Ecological Restoration in the Deep Sea: Desiderata' (2014) 44 *Marine Policy* 98

Warner, Robin, 'Oceans Beyond Boundaries: Environmental Assessment Frameworks' (2012) 27 *The International Journal of Marine and Coastal Law* 481

Warner, Robin, 'Tools to Conserve Ocean Biodiversity: Developing the Legal Framework for Environmental Impact Assessment in Marine Areas Beyond National Jurisdiction' (2012) 26 *Ocean Yearbook* 317

Wessel, Paul, David T Sandwell and Seung-Sep Kim, 'The Global Seamount Census' (2010) 23(1) *Oceanography* 24

Worm, Boris, Heike K Lotze and Ransom A Myers, 'Predator Diversity Hotspots in the Blue Ocean' (2003) 100(17) *PNAS* 9884

Worm, Boris, Edward B Barbier, Nicola Beaumont, J Emmett Duffy, Carl Folke, Benjamin S Halpern, Jeremy B C Jackson, Heike K Lotze, Fiorenza Micheli, Stephen R Palumbi, Enric Sala, Kimberley A Selkoe, John J Stachowicz and Reg Watson, 'Impacts of Biodiversity Loss on Ocean Ecosystem Services' (2006) 314 *Science* 787

Worm, Boris, Ray Hilborn, Julia K Baum, Trevor A Branch, Jeremy S Collie, Christopher Costello, Michael J Fogarty, Elizabeth A Fulton, Jeffrey A Hutchings, Simon Jennings, Olaf P Jensen, Heike K Lotze, Pamela M Mace, Tim R McClanahan, C  il  n Minto, Stephen R Palumbi, Ana M Parma, Daniel Ricard, Andrew A Rosenberg, Reg Watson and Dirk Zeller, 'Rebuilding Global Fisheries' (2009) 325 *Science* 578

Yesson, Chris, Malcolm R Clark, Michelle L Taylor and Alex D Rogers, 'The Global Distribution of Seamounts Based on 30 Arc Seconds Bathymetry Data' (2011) 58 *Deep-Sea Research I* 442

Young, Oran R, 'Environmental Governance: The Role of Institutions in Causing and Confronting Environmental Problems' (2003) 3 *International Environmental Agreements: Politics, Law and Economics* 377

Young, Oran R, 'Institutional Linkages in International Society: Polar Perspectives' (2006) 2(1) *Global Governance* 1

D. REPORTS

Alder, Jackie, Gail Lugten, Robert Kay and Bridget Ferriss, 'Compliance with international fisheries instruments: Fisheries impacts on North Atlantic ecosystems: evaluations and policy exploration' (Fisheries Centre Research Reports 9.5, UBC, 2001)

Allain, Valérie, Julie-Anne Kerandel and Malcolm Clark, 'Potential Seamount Location in the South Pacific RFMO Area: Prerequisite for Fisheries Management and Conservation in the High Seas' (Report No SPRFMO-V-SWG-05, Secretariat of the Pacific Community, 2005)

Arico, Salvatore and Charlotte Salpin, 'Bioprospecting of Genetic Resources in the Deep Seabed: Scientific, Legal and Policy Aspects' (Report, UNU-IAS, 2005)

Balgos, Miriam C, Caitlin Snyder, Biliانا Cicin-Sain, David Freestone and Chris Tompkins, 'Executive Summary on the Workshop on Governance of Marine Areas beyond National Jurisdiction: Management Issues and Policy Options' (Workshop Report, Global Forum on Oceans, Coasts, and Islands, 3-5 November 2008)

Bayliff, William H, 'Organization, Functions, and Achievements of the Inter-American Tropical Tuna Commission' (Special Report 13, IATTC, 2001)

Bernstein, Lenny, Peter Bosch, Osvaldo Canziani, Zhenlin Chen, Renate Christ, Ogunlade Davidson, William Hare, Saleemul Huq, David Karoly, Vladimir Kattsov, Zbigniew Kundzewicz, Jian Liu, Ulrike Lohmann, Martin Manning, Taroh Matsuno, Bettina Menne, Bert Metz, Monirul Mirza, Neville Nicholls, Leonard Nurse, Rajendra Pachauri, Jean Palutikof, Martin Parry, Dahe Qin, Nijavalli Ravindranath, Andy Reisinger, Jiawen Ren, Keywan Riahi, Cynthia Rosenzweig, Matilde Rusticucci, Stephen Schneider, Youba Sokona, Susan Solomon, Peter Stott, Ronald Stouffer, Taishi Sugiyama, Rob Swart, Dennis Tirpak, Coleen Vogel and Gary Yohe, 'Climate Change 2007: Synthesis Report' (Report, Intergovernmental Panel on Climate Change, 2007)

Census of Marine Life International Secretariat, 'First Census of Marine Life 2010: Highlights of a Decade of Discovery' (Report, Census of Marine Life, 2010)

Ceo, Marika, Sarah Fagnani, Judith Swan, Kumiko Tamada, and Hiromoto Watanabe, 'Performance Reviews by Regional Fishery Bodies: Introduction, Summaries, Synthesis and Best Practices. Volume I: CCAMLR, CCSBT, ICCAT, IOTC, NAFO, NASCO, NEAFC' (FAO Fisheries and Aquaculture Circular No 1072, FAO, 2012)

Chatwin, Anthony, 'Priorities for Coastal and Marine Conservation in South America' (Report, The Nature Conservancy, 2007)

Cheung, William, Jackie Alder, Vasiliki Karpouzi, Reg Watson, Vicky Lam, Catriona Day, Kristin Kaschner and Daniel Pauly, 'Patterns of Species Richness in the High Seas' (Technical Series no. 20, Secretariat of the Convention on Biological Diversity, 2005)

Cicin-Sain, Biliana and David Freestone, 'Moving Toward Ecosystem-Based Management and Integrated Coastal and Ocean Management in Marine Areas Beyond National Jurisdiction' (Report from the Strategic Planning Workshop on Global Ocean Issues in Marine Areas beyond National Jurisdiction in the Context of Climate Change, Global Forum on Oceans, Coasts, and Islands, 23-25 January 2008)

Common Oceans, 'Report of the Inception Workshop: Sustainable Management of Tuna Fisheries' (Workshop Report, FAO, 2014)

Couture, Estelle and Rick Rideout, 'Standardizing the Traffic Light Approach for Reporting on Convention Objectives' (NAFO Report SCR Doc. 14/045 Serial No N6342, NAFO Scientific Council Meeting, June 2014)

Druel, Elisabeth, Pascale Ricard, Julien Rochette and Carole Martinez, 'Governance of Marine Biodiversity in Areas Beyond National Jurisdiction at the Regional Level: Filling the Gaps and Strengthening the Framework for Action. Case Studies from the North-East

Atlantic, Southern Ocean, Western Indian Ocean, South West Pacific and the Sargasso Sea’ (IDDRI Study No 04/12, IDDRI, 2012)

Dudley, Nigel, ‘Guidelines for applying protected area management categories’ (Report, IUCN, 2008)

European Union, ‘Official Journal of the European Union’ (L 155/10, EU, 22 June 2010)
FAO Fisheries and Aquaculture Department, ‘The State of the World Fisheries and Aquaculture 2014’ (Report, FAO, 2014)

Garcia, S M, A Zerbi, C Aliaume, T Do Chi and G Lasserre, ‘The ecosystem approach to fisheries: Issues, terminology, principles, institutional foundations, implementation and outlook’ (FAO Fisheries Technical Paper No 443, FAO, 2003)

Gilman, Eric, Kelvin Passfield and Katrina Nakamura, ‘Performance Assessment of Bycatch and Discards Governance by Regional Fisheries Management Organizations’ (Report, IUCN, 2012)

Gjerde, Kristina M, Harm Dotinga, Sharelle Hart, Erik Jaap Molenaar, Rosemary Rayfuse and Robin Warner, ‘Regulatory and Governance Gaps in the International Regime for the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction (IUCN Environmental Policy and Law Papers Online Marine Series No 1, IUCN, 2008)

Gjerde, Kristina M, Harm Dotinga, Sharelle Hart, Erik Jaap Molenaar, Rosemary Rayfuse and Robin Warner, ‘Options for Addressing Regulatory and Governance Gaps in the International Regime for the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction’ (IUCN Environmental Policy and Law Papers Online Marine Series No 2, IUCN, 2008)

Global Ocean Commission, 'From Decline to Recovery: A Rescue Package for the Global Ocean' (Report, Global Ocean Commission, 2014)

Glowka, Lyle, Françoise Burhenne-Guilmin, Hugh Synge, Jeffrey A McNeely and Lothar Gündling, 'A Guide to the Convention on Biological Diversity' (Report, IUCN, 1994)

Halliday, R G, L P Fanning and R K Mohn, 'Use of the Traffic Light Method in Fishery Management Planning' (Research Document 2001/108, Canadian Science Advisory Secretariat, 2001)

High Seas Task Force, 'Closing the Net: Stopping Illegal Fishing on the High Seas' (Report, Governments of Australia, Canada, Chile, Namibia, New Zealand and the United Kingdom, WWF, IUCN and the Earth Institute at Columbia University, 2006)

IISD Reporting Services, 'Summary of the Eighth Meeting of the Working Group on Marine Biodiversity Beyond Areas of National Jurisdiction: 16-19 June 2014' (Report, International Institute for Sustainable Development, 2014)

ISSF, 'ISSF Tuna Stock Status Update, 2014: Status of the World Fisheries for Tuna' (ISSF Technical Report 2014-09, International Seafood Sustainability Foundation, 2014)

IUCN, 'World Conservation Strategy' (Report, IUCN, 1980)

IUCN, 'Co-Chair's Report of Workshop on High Seas Governance for the 21st Century' (Workshop Report, IUCN, 17-19 October 2007)

Laffoley, Dan, Alan T White, Stacey Kilarski, Mary Gleason, Scott Smith, Ghislaine Llewellyn, Jon Day, Annie Hillary, Victoria Wedell and Daphine Pee, 'Establishing Resilient Marine Protected Area Networks: Making It Happen' (Report, IUCN, 2008)

Laffoley, D, H S J Roe, M V Angel, J Ardron, N R Bates, I L Boyd, S Brooke, K N Buck, C A Carlson, B Causey, M H Conte, S Christiansen, J Cleary, J Donnelly, S A Earle, R Edwards, K M Gjerd, S J Giovannoni, S Gulick, M Gollock, J Hallett, P Halpin, R Hanel, A Hemphill, R J Johnson, A H Knap, M W Lomas, S A McKenna, M J Miller, P I Miller, F W Ming, R Moffitt, N B Nelson, L Parson, A J Peters, J Pitt, P Rouja, J Roberts, J Roberts, D A Seigel, A N S Siuda, D K Steinberg, A Stevenson, V R Sumaila, W Swartz, S Thorrold, T M Trott and V Vats, 'The protection and management of the Sargasso Sea: The golden floating rainforest of the Atlantic Ocean' (Summary Science and Supporting Evidence Case Report, Sargasso Sea Alliance, 2011)

Lodge, Michael W, David Anderson, Terje Løbach, Gordon Munro, Keith Sainsbury and Anna Willock, 'Recommended Best Practices for Regional Fisheries Organizations: Report of an independent panel to develop a model for improved governance by Regional Fisheries Management Organizations' (Report, Chatham House, 2007)

Maunder, Mark N and Alexandre Aires-da-Silva, 'Evaluation of the Kobe Plot and Strategy Matrix and their Application to Tuna in the EPO' (IATTC Scientific Advisory Committee 2nd meeting Document SAC-02-11, 9-12 May 2011)

Millennium Ecosystem Assessment, 'Ecosystems and Human Well-being: Biodiversity Synthesis' (Report, World Resources Institute, 2005)

Mooney-Seus, Marjorie L and Andrew A Rosenberg, 'Regional Fisheries Management Organizations: Progress in Adopting the Precautionary Approach and Ecosystem-Based Management' (Recommended Best Practices for Regional Fisheries Management Organizations: Technical Study No 1, Chatham House, 2007)

NEAFC Performance Review Panel, 'Report of the North East Atlantic Fisheries Commission, NEAFC' (Report, NEAFC, 2006)

OECD, 'Strengthening Regional Fisheries Management Organisations' (Report, OECD, 2009)

Owen, Daniel, 'Practice of RFMOs Regarding Non-Members' (Recommended Best Practices for Regional Fisheries Management Organizations: Technical Study No 2, Chatham House, 2007)

Peterson, Clifford L and William H Bayliff, 'Organization, Functions, and Achievements of the Inter-American Tropical Tuna Commission' (Special Report 5, IATTC, 1985)

Rogers, A D, U R Sumaila, S S Hussain and C Baulcomb, 'The High Seas and Us: Understanding the Value of High Seas Ecosystems' (Report, Global Ocean Commission, 2014)

Schubert, Renate, Hans Joachim Schellnhuber, Nina Buchmann, Astrid Epiney, Rainer Griebhammer, Margareta E Kulessa, Dirk Messner, Stefan Rahmstorf and Jürgen Schmid, 'The Future Oceans: Warming Up, Rising High, Turning Sour' (Special Report, German Advisory Council on Global Change, 2006)

Stocker, T F, D Qin, G-K Plattner, M Tignor, S K Allen, J Boschung, A Nauels, Y Xia, V Bex and P M Midgley, 'Summary for Policymakers. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change' (Report, IPCC, 2013)

Stokke, Olav Schram, 'The Interplay of International Regimes: Putting Effectiveness Theory to Work' (FNI Report 14/2001, The Fridtjof Nansen Institute, 2001)

Swan, Judith, 'Regional Fishery Bodies and Governance: Issues, Actions and Future Directions' (FAO Fisheries Circular No 959, FAO, 2000)

Swan, Judith, ‘Decision-Making in Regional Fishery Bodies or Arrangements: The Evolving Role of RFBS and International Agreement on Decision-Making Processes’ (FAO Fisheries Circular No 995, FAO, 2004)

Tarasofsky, Richard, ‘Enhancing the Effectiveness of Regional Fisheries Management Organizations through Trade and Market Measures’ (Briefing Paper, Chatham House EEDP BP 07/04, May 2007)

Unger, Sebastian and Julien Rochette, ‘Governance of Areas Beyond National Jurisdiction – Developing and Strengthening Regional Approaches’ (UNEP(DEPI)/RS.15/WP.6.RS, UNEP, 2013)

Wright, Glen, Julien Rochette, Sebastian Unger, Kristina Gjerde and Jeff Ardron, ‘The Scores at Half Time: An Update on the International Discussions on the Governance of Marine Biodiversity in Areas Beyond National Jurisdiction’ (IDDRI Issue Brief No 02/14, IDDRI, 2014)

E. CASES

Case concerning Land Reclamation by Singapore in and around the Straits of Johor (Malaysia v Singapore) (Provisional Measures) [2003] ITLOS No 12

Fisheries Jurisdiction Case (United Kingdom of Great Britain and Northern Ireland v Iceland) (Merits, Judgment) [1974] ICJ Rep 3

Gabčíkovo-Nagymaros Dam Case (Hungary v Slovakia) [1997] ICJ Rep 7

Maritime Dispute (Peru v Chile) (Judgment) [2014] ICJ Rep 137

MOX Plant Case (Ireland v United Kingdom) (Provisional Measures) [2001] ITLOS No 10

North Sea Continental Shelf (Federal Republic of Germany v Denmark; Federal Republic of Germany v Netherlands) (Judgment) [1969] ICJ Rep 47

Pulp Mills on the River Uruguay (Argentina v Uruguay) (Provisional Measures) [2006] ICJ Rep 135

Railway Traffic between Lithuania and Poland (Railway Sector Landwarów-Kaisiadorys) (Lithuania v Poland) (Advisory Opinion) [1931] PCIJ ser A/B No 42

Request for an Examination of the Situation in Accordance with Paragraph 63 of the Court's Judgment of 20 December 1974 in the Nuclear Tests (New Zealand v France) Case [1995] ICJ Rep 288

Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area (Request for Advisory Opinion submitted to the Seabed Disputes Chamber) [2011] ITLOS No 17

Southern Bluefin Tuna Cases (New Zealand v Japan; Australia v Japan) (Provisional Measures) [1999] ITLOS No 3-4

Trail Smelter Case (United States v Canada) [1941] 3 UN Rep International Arbitral Awards 1905

F. LEGISLATION

Chilean National Fishery Law Consolidated by Supreme Decree 430 of 1991 and Extended by Decree 598 of 1999

Presidential Declaration Concerning Continental Shelf of 23 June 1947, El Mercurio (Santiago de Chile, 29 June 1947)

Presidential Decree No 781 of 1 August 1947, El Peruano (Diario Oficial Vol 107 No 1983, 11 August 1947)

US National Environmental Policy Act of 1969, Pub L No 91-190

G. DECLARATIONS

Addis Ababa Declaration, 12 ILM 1200 (1973)

Declaración Conjunta de los Países Miembros de la CPPS, OLDEPESCA y OSPESCA para la Reanudación de la Conferencia de Revisión del Acuerdo de Naciones Unidas Sobre las Poblaciones de Peces Transzonales y las Poblaciones de Peces Altamente Migratorios (Acuerdo de Nueva York) (5 May 2010)

Declaration of Panama (1995)

< https://www.iattc.org/PDFFiles2/Declaration_of_Panama.pdf >

Declaration of Santo Domingo, 11 ILM 892 (1972)

Declaration of the United Nations Conference on the Human Environment (1972)

<<http://www.unep.org/Documents.Multilingual/Default.asp?documentid=97&articleid=1503>>

Declaration of Yaoundé, 12 ILM 210 (1972)

FAO, 'Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem' (Report of the Reykjavik Conference on Responsible Fisheries in the Marine Ecosystem FAO Fisheries Report No 658 Appendix I, FAO, 1-4 October 2001)

Hamilton Declaration on Collaboration for the Conservation of the Sargasso Sea (2014)
<http://www.sargassoalliance.org/storage/documents/Hamilton_Declaration_on_Collaboration_for_the_Conservation_of_the_Sargasso_Sea.with_signatures.pdf>

Joint Four-Nation Declaration (1943)

<<http://news.google.com/newspapers?nid=1499&dat=19431101&id=wKkWAAAAIBAJ&sjid=BiMEAAAAIBAJ&pg=5322,9916>>

Lima Declaration, 10 ILM 207 (1970)

Montevideo Declaration on the Law of the Sea, 9 ILM 1081 (1970)

Truman Proclamation ('Policy of the United States with Respect to Coastal Fisheries in Certain Areas of the High Seas') (Proclamation No 2668, 28 September 1945)

United Nations General Assembly, *Declaration on Principles of International Law Concerning Friendly Relations and Cooperation Among States in Accordance with the Charter of the United Nations*, GA Res 25/2625, 25th sess, Agenda Item 85, A/RES/25/2625 (24 October 1970)

United Nations General Assembly, *Report of the United Nations Conference on Environment and Development*, A/CONF.151/26 (Vol. I) (12 August 1992) annex I ('*Rio Declaration on Environment and Development*')

H. IATTC DOCUMENTS

IATTC, '21st IATTC Annual Meeting' (March 1969)

IATTC, '37th IATTC Meeting' (October 1979)

IATTC, '51st IATTC Meeting' (June 1993)

IATTC, ‘73rd IATTC Meeting’ (June 2005)

IATTC, ‘74th IATTC Meeting’ (June 2006)

IATTC, ‘75th IATTC meeting’ (June 2007)

IATTC, ‘81st IATTC Meeting’ (October 2010)

IATTC, ‘82nd IATTC Meeting’ (July 2011)

IATTC, ‘83rd IATTC Meeting’ (June 2012)

IATTC, ‘85th IATTC Meeting’ (June 2013)

IATTC, ‘Resolution Regarding the Agreement on the International Dolphin Conservation Program’ (C-98-01, 1998)

IATTC, ‘Resolution on Yellowfin Tuna’ (C-98-04, 1998)

IATTC, ‘Resolution on Bigeye Tuna’ (C-98-05, 1998)

IATTC, ‘Resolution on the Establishment of a Working Group on Fleet Capacity in the Eastern Pacific Ocean’ (C-98-06, 1998)

IATTC, ‘Resolution on Yellowfin Tuna’ (C-98-07, 1998)

IATTC, ‘Resolution on Fish-Aggregating Devices’ (C-98-10, 1998)

IATTC, ‘Resolution on Fleet Capacity’ (C-98-11, 1998)

IATTC, 'Resolution on the Establishment of a Permanent Working Group on Compliance' (C-99-01, 1999)

IATTC, 'Resolution on Yellowfin Tuna' (C-99-03, 1999)

IATTC, 'Resolution on the Management of Fishing Capacity of Large-Scale Tuna Longline Fishery' (C-99-04, 1999)

IATTC, 'Resolution on the Conservation and Management of Bigeye Tuna in the Eastern Pacific Ocean' (C-99-06, 1999)

IATTC, 'Resolution on Fish-Aggregating Devices' (C-99-07, 1999)

IATTC, 'Resolution for Implementing the Catch Limit for Yellowfin Tuna in 1999' (C-99-08, 1999)

IATTC, 'Resolution on Bigeye Tuna' (C-99-09, 1999)

IATTC, 'Resolution on Bycatch' (C-99-11, 1999)

IATTC, 'Resolution on Fleet Capacity' (C-00-01, 2000)

IATTC, 'Resolution on Bigeye Tuna' (C-00-02, 2000)

IATTC, 'Resolution on Yellowfin Tuna' (C-00-03, 2000)

IATTC, 'Resolution on Compliance' (C-00-05, 2000)

IATTC, 'Resolution on a Regional Vessel Register' (C-00-06, 2000)

IATTC, 'Resolution on Fishing by Vessels of Non-Parties' (C-00-07, 2000)

IATTC, 'Resolution on Bycatch' (C-00-08, 2000)

IATTC, 'Resolution on the Capacity of the Tuna Fleet Operating in the Eastern Pacific Ocean' (C-00-10, 2000)

IATTC, 'Resolution on Fishing by Vessels of Non-Parties' (C-01-02, 2001)

IATTC, 'Resolution on At-Sea Reporting' (C-01-03, 2001)

IATTC, 'Resolution on Bycatch' (C-01-04, 2001)

IATTC, 'Resolution on the Conservation of Bigeye Tuna in the Eastern Pacific Ocean' (C-01-06, 2001)

IATTC, 'Resolution on Yellowfin Tuna' (C-01-07, 2001)

IATTC, 'Resolution on Compliance' (C-02-01, 2002)

IATTC, 'Resolution on the Capacity of the Tuna Fleet Operating in the Eastern Pacific Ocean' (C-02-03, Revised, 2002)

IATTC, 'Resolution on the Conservation of Yellowfin and Bigeye Tuna in the Eastern Pacific Ocean' (C-02-04, 2002)

IATTC, 'Resolution on Bycatch' (C-02-05, 2002)

IATTC, 'Resolution on IATTC Bigeye Tuna Statistical Document Program' (C-03-01, 2003)

IATTC, 'Resolution on the Adoption of the Convention for the Strengthening of the Inter-American Tropical Tuna Commission Established by the 1949 Convention between the

United States of America and the Republic of Costa Rica – Antigua Convention’ (C-03-02, 2003)

IATTC, ‘Resolution on At-Sea Reporting’ (C-03-04, 2003)

IATTC, ‘Resolution on Data Provision’ (C-03-05, 2003)

IATTC, ‘Resolution on the Establishment of a List of Longline Fishing Vessels Over 24 Meters (LSTLFVs) Authorized to Operate in the Eastern Pacific Ocean’ (C-03-07, 2003)

IATTC, ‘Consolidated Resolution on Bycatch’ (C-03-08, 2003)

IATTC, ‘Recommendation on Sea Turtles’ (C-03-10, 2003)

IATTC, ‘Resolution on Criteria for Attaining the Status of Cooperating Non-Party or Cooperating Fishing Entity to AIDCP and IATTC’ (C-03-11, 2003)

IATTC, ‘Resolution on the Conservation of Tuna in the Eastern Pacific Ocean’ (C-03-12, 2003)

IATTC, ‘Resolution on Criteria for Attaining the Status of Cooperating Non-Party or Fishing Entity in IATTC’ (C-04-02, 2004)

IATTC, ‘Resolution to Establish a List of Vessels Presumed to Have Carried Out Illegal, Unreported and Unregulated Fishing Activities in the Eastern Pacific Ocean’ (C-04-04, 2004)

IATTC, ‘Consolidated Resolution on Bycatch’ (C-04-05, 2004)

IATTC, ‘Consolidated Resolution on Bycatch’ (C-04-05 Rev 2, Revised, 2004)

IATTC, 'Resolution on the Establishment of a Vessel Monitoring System (VMS)' (C-04-06, 2004)

IATTC, 'Resolution on a Three-Year Program to Mitigate the Impact on Tuna Fishing on Sea Turtles' (C-04-07, 2004)

IATTC, 'Resolution for a Multi-Annual Program on the Conservation of Tuna in the Eastern Pacific Ocean for 2004, 2005 and 2006' (C-04-09, 2004)

IATTC, 'Resolution on Catch Reporting' (C-04-10, 2004)

IATTC, 'Resolution on Incidental Mortality of Seabirds' (C-05-01, 2005)

IATTC, 'Resolution on Northern Albacore Tuna' (C-05-02, 2005)

IATTC, 'Resolution on the Conservatoin of Sharks Caught in Association with Fisheries in the Eastern Pacific Ocean' (C-05-03, 2005)

IATTC, 'Resolution to Establish a List of Vessels Presumed to Have Carried Out Illegal, Unreported and Unregulated Fishing Activities in the Eastern Pacific Ocean' (C-05-07, 2005)

IATTC, 'Resolution for a Program on the Conservation of Tuna in the Eastern Pacific Ocean for 2007' (C-06-02, 2006)

IATTC, 'Resolution on Establishing a Program for Transhipments by Large-Scale Fishing Vessels' (C-06-04, 2006)

IATTC, 'Adoption of Trade Measures to Promote Compliance' (C-06-05, 2006)

IATTC, 'Resolution to Mitigate the Impact of Tuna Fishing Vessels on Sea Turtles' (C-07-03, 2007)

IATTC, 'Resolution on Establishing a Program for Transhipments by Large-Scale Fishing Vessels' (C-08-02, 2008)

IATTC, 'Implementation Procedures for the Observer Program for At-Sea Transhipments by Large-Scale Tuna Longline' (C-08-03, 2008)

IATTC, 'Resolution on a Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean in 2009-2011' (C-09-01, 2009)

IATTC, 'On a Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean in 2009-2011' (C-09-02, 2009)

IATTC, 'Resolution on the International Dolphin Conservation Program' (C-09-04, 2009)

IATTC, 'Recommendation on a Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean in 2011-2013' (C-10-01, 2010)

IATTC, 'Recommendation to Mitigate the Impact on Seabirds of Fishing for Species Covered by the IATTC' (C-10-02, 2010)

IATTC, 'Recommendation Prohibiting Fishing on Data Buoys' (C-10-03, 2010)

IATTC, 'Resolution on a Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean in 2011-2013' (C-11-01, 2011)

IATTC, 'Resolution to Mitigate the Impact on Seabirds of Fishing for Species Covered by the IATTC' (C-11-02, 2011)

IATTC, ‘Resolution Prohibiting Fishing on Data Buoys’ (C-11-03, 2011)

IATTC, ‘Resolution (Amended) on the Establishment of a List of Longline Fishing Vessels over 24 Meters (LSTLFVs) Authorized to Operate in the Eastern Pacific Ocean’ (C-11-05, 2011)

IATTC, ‘Resolution (Amended) on a Regional Vessel Register’ (C-11-06, 2011)

IATTC, ‘Resolution on the Process for Improved Compliance of Resolutions Adopted by the Commission’ (C-11-07, 2011)

IATTC, ‘Resolution on Scientific Observers for Longline Vessels’ (C-11-08, 2011)

IATTC, ‘Resolution (Amended) on Establishing a Program for Transshipments by Large-Scale Fishing Vessels’ (C-11-09, 2011)

IATTC, ‘Resolution on the Conservation of Oceanic Whitetip Sharks Caught in Association with Fisheries in the Antigua Convention Area’ (C-11-10, 2011)

IATTC, ‘Amendment to Resolution C-11-01 on Tuna Conservation’ (C-12-01, 2012)

IATTC, ‘Rules of Procedure Regarding Capacity Loans or Concessions and Chartering of Vessels with Temporary Transfers of Capacity’ (C-12-06, 2012)

IATTC, ‘Amendment to Resolution C-11-09 on Establishing a Program for Transshipments by Large-Scale Fishing Vessels’ (C-12-07, 2012)

IATTC, ‘Conservation and Management Measures for Bluefin Tuna in the Eastern Pacific’ (C-12-09, 2012)

IATTC, ‘Best Available Science’ (C-12-10, 2012)

IATTC, ‘Multiannual Program for the Conservation of Tuna in the Eastern Pacific Ocean during 2014-2016’ (C-13-01, 2013)

IATTC, ‘Measures for the Conservation and Management of Bluefin Tuna in the Eastern Pacific Ocean (C-13-02, 2013)

IATTC, ‘Supplemental Resolution on North Pacific Albacore’ (C-13-03, 2013)

IATTC, ‘Collection and Analyses of Data on Fish-Aggregating Devices’ (C-13-04, 2013)

IATTC, ‘Resolution (Amended) on a Regional Vessel Register’ (C-14-01, 2014)

IATTC, ‘Resolution (Amended) on the Establishment of a Vessel Monitoring System (VMS)’ (C-14-02, 2014)

I. CPPS DOCUMENTS

CPPS, ‘Asamblea Extraordinaria’ (February 2012)

CPPS, ‘Atlas Sobre Distribución, Rutas Migratorias, Hábitats Críticos y Amenazas para Grandes Cetáceos en el Pacífico Oriental’ (Report, CPPS, 2012)

CPPS, ‘Declaración Conjunta relativa a los Problemas de la Pesquería en el Pacífico Sur’ (Santiago de Chile, 18 de agosto de 1952) in CPPS, *Textos Básicos* (CPPS Secretaría General, 4th ed, 2013) 7

CPPS, ‘Declaración de Santiago (‘Declaración sobre Zona Marítima’)’ (Santiago de Chile, 18 de agosto de 1952) in CPPS, *Textos Básicos* (CPPS Secretaría General, 4th ed, 2013) 5

CPPS, ‘Plan de Acción Estratégico 2011-2014’ (Anexo 2 de la Resolución 1/2010, 2010)

CPPS, ‘Plan de Acción Estratégico para la CPPS del Siglo XXI: 2013 – 2023’ in CPPS Secretaría General, *Textos Básicos* (CPPS, 4th edition, 2013) 285

CPPS, *Textos Básicos* (CPPS Secretaría General, 4th ed, 2013)

Estatuto sobre Competencias y Estructura de la Comisión Permanente del Pacífico Sur [Statute on Competency and Structure of the Permanent Commission for the South Pacific] (2013)

Plan de Acción para la Conservación de los Mamíferos Marinos del Pacífico Sudeste [Plan of Action for the Conservation of Marine Mammals in the Southeast Pacific] (1991)

Plan de Acción para la Protección del Medio Marino y Áreas Costeras del Pacífico Sudeste [Plan of Action for the Protection of the Marine Environment and Coastal Areas of the Southeast Pacific] (2013)

Reglamento de la Comisión Permanente del Pacífico Sur Personal Internacional de la CPPS [Rules of the Permanent Commission for the South Pacific CPPS] (2013)

Reglamento de Permisos para la Explotación de las Riquezas del Pacífico Sur [Permit Regulation for Resource Exploitation of the South Pacific] (1955)

J. SPRFMO DOCUMENTS

SPRFMO, ‘First International Meeting on the Establishment of the South Pacific Regional Fisheries Management Organisation’ (Paper No SP/01/Inf4 rev2, SPRFMO, 14-17 February 2006)

SPRFMO, ‘Report of the Third International Meeting on the Establishment of the Proposed South Pacific Regional Fisheries Management Organisation’ (30 April-4 May 2007)

SPRFMO, *Final Act of the International Consultations on the Establishment of the Proposed South Pacific Regional Fisheries Management Organisation* (2009)

SPRFMO, 'Conservation and Management Measure for *Trachurus murphyi*' (CMM 1.01, 2013)

SPRFMO, 'Conservation and Management Measure for Gillnets in the SPRFMO Convention Area' (CMM 1.02, 2013)

SPRFMO, 'Standards for the Collection, Reporting, Verification and Exchange of Data' (CMM 1.03, 2013)

SPRFMO, 'Conservation and Management Measure for *Trachurus murphyi*' (CMM 2.01, 2014)

SPRFMO, 'Conservation and Management Measure on Standards for the Collection, Reporting, Verification and Exchange of Data' (CMM 2.02, 2014)

SPRFMO, 'Conservation and Management Measure for the Management of Bottom Fishing in the SPRFMO Convention Area' (CMM 2.03, 2014)

SPRFMO, 'Conservation and Management Measure for Minimising Bycatch of Seabirds in the SPRFMO Convention Area' (CMM 2.04, 2014)

SPRFMO, 'Conservation and Management Measure for the Establishment of the Commission Record of Vessels Authorised to Fish in the Convention Area' (CMM 2.05, 2014)

SPRFMO, 'Conservation and Management Measure for the Establishment of the Vessel Monitoring System in the SPRFMO Convention Area' (CMM 2.06, 2014)

SPRFMO, ‘Conservation and Management Measure on Minimum Standards of Inspection in Port’ (CMM 2.07, 2014)

SPRFMO, ‘Assessment of Compliance of Members and CNCPs’ (CTC-01-02, 2014)

SPRFMO, ‘Draft IUU List’ (CTC-01-09, 2014)

SPRFMO, ‘Proposed CMM for Boarding and Inspection Procedures in the SPRFMO Convention Area’ (CTC-01-13, 2014)

SPRFMO, ‘Proposed Conservation and Management Measure for the Regulation of Transhipments in the SPRFMO Convention Area’ (CTC-01-14, 2014)

SPRFMO, ‘Proposal for a SPRFMO Jack Mackerel Rebuilding Plan’ (Paper No ESRC-01-02, SPRFMO, 27 - 31 January 2014)

SPRFMO, ‘Report of the Second Meeting of the Commission of the South Pacific Regional Fisheries Management Organisation’ (Report, SPRFMO, 27-31 January 2014)

K. UNITED NATIONS DOCUMENTS

Convention on Biological Diversity, *Decision Adopted by the Second Meeting of the Conference of the Parties*, UNEP/CBD/COP/2/19 Decision II/10, Conference of the Parties to the Convention on Biological Diversity, 2nd meeting (30 November 1995)

Convention on Biological Diversity, *Progress Report on the Implementation of the Programmes of Work on the Biological Diversity of Inland Water Ecosystems, Marine and Coastal Biological Diversity, and Forest Biological Diversity (Decisions IV/4, IV/5, IV/7)*, UNEP/CBD/COP/5/INF/7, Conference of the Parties to the Convention on Biological Diversity, 5th meeting, Item 16.1 of the Provisional Agenda (20 April 2000)

Convention on Biological Diversity, *Decisions Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Fifth Meeting*, UNEP/CBD/COP/5/23 Decision V/6, Conference of the Parties to the Convention on Biological Diversity, 5th meeting (22 June 2000)

Convention on Biological Diversity, *Strategic Plan for the Convention on Biological Diversity*, UNEP/CBD/COP/6/VI/26, Conference of the Parties to the Convention on Biological Diversity, 6th meeting (27 May 2002)

Convention on Biological Diversity, *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Seventh Meeting*, UNEP/CBD/COP/DEC/VII/5, Conference of the Parties to the Convention on Biological Diversity, 7th meeting, Agenda Item 18.2 (13 April 2004)

Convention on Biological Diversity, *Decisions Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Seventh Meeting*, UNEP/CBD/COP/DEC/VII/12, Conference of the Parties to the Convention on Biological Diversity, 7th meeting, Agenda Item 19.5 (13 April 2004)

Convention on Biological Diversity, *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Seventh Meeting*, UNEP/CBD/COP/DEC/VII/28, Conference of the Parties to the Convention on Biological Diversity, 7th meeting, Agenda Item 24 (13 April 2004)

Convention on Biological Diversity, *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Seventh Meeting*, UNEP/CBD/COP/DEC/VII/30, Conference of the Parties to the Convention on Biological Diversity, 7th meeting, Agenda Item 26 (13 April 2004)

Convention on Biological Diversity, *Decisions Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Eighth Meeting*,

UNEP/CBD/COP/DEC/VIII/28, Conference of the Parties to the Convention on Biological Diversity, 8th meeting, Agenda Item 27.4 (15 June 2006)

Convention on Biological Diversity, *Decisions Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Ninth Meeting*, UNEP/CBD/COP/DEC/IX/16, Conference of the Parties to the Convention on Biological Diversity, 9th meeting, (9 October 2008)

Convention on Biological Diversity, *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Ninth Meeting*, UNEP/CBD/COP/DEC/IX/20, Conference of the Parties to the Convention on Biological Diversity, 9th meeting, Agenda Item 4.9 (9 October 2008)

Convention on Biological Diversity, 'Azores Scientific Criteria and Guidance for Identifying Ecologically or Biologically Significant Marine Areas and Designing Representative Networks of Marine Protected Areas in Open Ocean Waters and Deep Sea Habitats' (Report, CBD, 2009)

Convention on Biological Diversity, *Report of the Expert Workshop on Scientific and Technical Aspects relevant to Environmental Impact Assessment in Marine Areas Beyond National Jurisdiction*, UNEP/CBD/EW-EIAMA/2, Expert Workshop on Scientific and Technical Aspects relevant to Environmental Impact Assessment in Marine Areas Beyond National Jurisdiction (20 November 2009)

Convention on Biological Diversity, *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Tenth Meeting: X/2. The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets*, UNEP/CBD/COP/DEC/X/2, Conference of the Parties to the Convention on Biological Diversity, 10th meeting, Agenda Item 4.4 (29 October 2010)

Convention on Biological Diversity, *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Tenth Meeting*, UNEP/CBD/COP/DEC/X/29, Conference of the Parties to the Convention on Biological Diversity, 10th meeting, Agenda Item 5.2 (29 October 2010)

Convention on Biological Diversity, *Background Study to Review the Extent to which Biodiversity Concerns are Addressed in Existing Assessments*, UNEP/CBD/JEM.BC-SF/1/2, Joint Expert Meeting on Addressing Biodiversity Concerns in Sustainable Fisheries, Bergen, Norway, 7-9 December 2011 (1 December 2011)

Convention on Biological Diversity, *Report of Joint Expert Meeting on Addressing Biodiversity Concerns in Sustainable Fisheries*, UNEP/CBD/SBSTTA/16/INF/13, Subsidiary Body on Scientific Technical and Technological Advice, 16th meeting, Item 6.2 of the Provisional Agenda (5 March 2012)

Convention on Biological Diversity, *Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Eleventh Meeting*, UNEP/CBD/COP/DEC/XI/18, Conference of the Parties to the Convention on Biological Diversity, 11th meeting, Agenda Item 10.2 (5 December 2012)

Convention on Biological Diversity, *Decisions Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Eleventh Meeting*, UNEP/CBD/COP/11/35, Conference of the Parties to the Convention on Biological Diversity, 11th meeting, (5 December 2012)

FAO Fisheries Department. 'The Ecosystem Approach to Fisheries' (FAO Technical Guidelines for Responsible Fisheries No 4 Suppl 2, FAO, 2003)

FAO, 'Model Scheme on Port State Measures to Combat Illegal, Unreported and Unregulated fishing' (Report, FAO, 2007)

FAO, 'Report and Documentation of the Expert Consultation on Deep-Sea Fisheries in the High Seas 2006' (Report no 829, FAO, 2007)

FAO, 'International Guidelines for the Management of Deep-Sea Fisheries in the High Seas' (Guidelines, FAO, 2009)

FAO, 'Review of the State of World Marine Fishery Resources' (Fisheries and Aquaculture Technical Paper no 569, FAO, 2011)

FAO Fisheries and Aquaculture Department, 'The State of World Fisheries and Aquaculture 2012' (Report, FAO, 2012)

FAO Fisheries and Aquaculture Department, *What are Regional Fisheries Bodies (RFBs)?* (27 March 2012) United Nations Food and Agriculture Organization <<http://www.fao.org/fishery/topic/16800/en>>

FAO, 'Common Oceans: Global Sustainable Fisheries Management and Biodiversity Conservation in Areas Beyond National Jurisdiction' (Report, FAO, 2014)

FAO, *Highlight: The State of World Fisheries and Aquaculture 2014* (2014) United Nations Food and Agriculture Organization <www.fao.org/3/a-i3807e.pdf>

International Maritime Organization, *Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas*, Res A.982(24), 24th sess, Agenda Item 11, A/24/Res.982 (6 February 2006)

International Maritime Organization, *Strategic Plan for the Organization (for the Six-Year Period 2014 to 2019)*, Resolution A. 1060(28), 29th sess, Agenda Item 8, A 28/Res. 1060 (27 January 2014)

International Seabed Authority, 'Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area' (2000)

Juan Manuel Gómez-Robledo and Philip D. Burgess, *Report of the Ad Hoc Open-ended Informal Working Group to Study Issues Relating to the Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction*, A/61/65, United Nations General Assembly, 61st sess, Item 69(a) of the preliminary list (20 March 2006)

Juan Manuel Gómez-Robledo and Robert Hill, *Letter dated 15 May 2008 from the Co-Chairpersons of the Ad Hoc Open-ended Informal Working Group to Study Issues Relating to the Conservation and Sustainable Use of Marine Biological Diversity Beyond Areas of National Jurisdiction Addressed to the President of the General Assembly*, A/63/79, United Nations General Assembly, 63rd sess, Item 73 of the preliminary list (16 May 2008)

Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 16 March 2010 from the Co-Chairpersons of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/65/68, United Nations General Assembly, 65th sess, Item 75(a) of the preliminary list (17 March 2010)

Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 30 June 2011 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/66/119, United Nations General Assembly, 66th sess, Item 77(a) of the preliminary list (30 June 2011)

Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 8 June 2012 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/67/95, United Nations General Assembly, 67th sess, Item 76(a) of the preliminary list (13 June 2012)

Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 23 September 2013 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General*

Assembly, A/68/399, United Nations General Assembly, 68th sess, Item 76(a) of the preliminary list (23 September 2013)

Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 5 May 2014 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/69/82, United Nations General Assembly, 69th sess, Item 75(a) of the preliminary list (5 May 2014)

Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 25 July 2014 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/69/177, United Nations General Assembly, 69th sess, Item 75(a) of the preliminary list (23 July 2014)

Palitha T B Kohona and Liesbeth Lijnzaad, *Letter dated 13 February 2015 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly*, A/69/780, United Nations General Assembly, 69th sess, Item 74(a) of the preliminary list (13 February 2015)

Secretariat of the Convention on Biological Diversity, 'Global Biodiversity Outlook 4' (Report, CBD, 2014)

Secretariat of the Convention on Biological Diversity, *The Ecosystem Approach (2004)*
Convention on Biological Diversity <www.cbd.int/doc/publications/ea-text-en.pdf>

United Nations, *Millennium Development Goal 7: Ensure Environmental Sustainability*
United Nations <<http://www.un.org/millenniumgoals/enviro.html>>

UNEP Regional Seas Programme, *South-East Pacific Regional Profile*
<www.unep.org/regionalseas/programmes/nonunep/seacific/instruments/r_profile_sep.pdf>

UNEP, 'Ecosystems and Biodiversity in Deep Waters and High Seas' (UNEP Regional Seas Reports and Studies No 178, UNEP/IUCN, 2006)

UNEP, 'Global Environment Outlook (GEO-5): Environment for the Future We Want' (Report, UNEP, 2012)

UNEP, *16th Global Meeting of the Regional Seas Conventions and Action Plans* (2014) UNEP(DEPI)/RS.16/WP.7.RS
<www.unep.org/ecosystemmanagement/water/regionalseas40/Portals/50221/16%20RSCAPs%20meetingreport.pdf>

United Nations Conference on Environment and Development, 'Agenda 21, Chapter 15' (1992)

United Nations Conference on Environment and Development, 'Agenda 21, Chapter 17' (1992)

United Nations Development Programme, *Governance for Sustainable Human Development: A UNDP Policy Document* (1997) UNDP
<<http://www.pogar.org/publications/other/undp/governance/undppolicydoc97-e.pdf>>

United Nations Environment Programme, *About UNEP* (27 March 2012) United Nations Environment Programme
<<http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=43&ArticleID=3301&l=en>>

United Nations Environment Programme, *Resolution 14/25 on Environmental Impact Assessment*, UNEP Governing Council, 14th mtg (17 June 1987)

United Nations Food and Agriculture Organization, 'International Plan of Action for the Management of Fishing Capacity' (1999)

United Nations Food and Agriculture Organization, ‘International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries’ (1999)

United Nations Food and Agriculture Organization, ‘International Plan of Action for the Conservation and Management of Sharks’ (1999)

United Nations Food and Agriculture Organization, ‘International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing’ (2001)

United Nations Food and Agriculture Organization, *Code of Conduct for Responsible Fisheries* (1995)

United Nations Framework Convention on Climate Change, *The Secretariat* (2012) United Nations Framework Convention on Climate Change, <http://unfccc.int/secretariat/history_of_the_secretariat/items/1218.php>

United Nations General Assembly, *Cooperation between States in the Field of the Environment*, GA Res 2995/XXVII, 27th sess. (15 December 1972)

United Nations General Assembly, *Charter of Economic Rights and Duties of States*, GA Res 29/3281, 29th sess, Agenda Item 48, A/RES/29/3281 (12 December 1974)

United Nations General Assembly, *World Charter for Nature*, GA Res 37/7, 48th sess, A/RES/37/7 (28 October 1982)

United Nations, *Report of the World Commission on Environment and Development*, Resolution A/42/427, 42nd sess, A/42/427 (4 August 1987) annex (‘Report of the World Commission on Environment and Development “Our Common Future”’)

United Nations General Assembly, *Resolution Adopted by the General Assembly*, GA Res 46/215, 79th sess, A/Res/46/215 (20 December 1991)

United Nations General Assembly, *Report of the United Nations Conference on Environment and Development*, Conference on Environment and Development, A/CONF.151/26 (Vol. II) (13 August 1992) chapter 17 ('*Protection of the Oceans, All Kinds of Seas, Including Enclosed and Semi-Enclosed Seas, and Coastal Areas and the Protection, Rational Use and Development of their Living Resources*')

United Nations General Assembly, *The Precautionary Approach to Fisheries with Reference to Straddling Fish Stocks and Highly Migratory Fish Stocks*, United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks, A/CONF.164/INF/8 (26 January 1994)

United Nations General Assembly, *Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982*, GA Res 48/263, 48th sess, Agenda Item 36, A/RES/48/263 (17 August 1994)

United Nations General Assembly, *Commentaries to Draft Articles of Transboundary Harm from Hazardous Activities, in Report of the International Law Commission*, UN GAOR, 53rd sess, Supp No 10, UN Doc A/56/10 (23 April-1 June and 2 July-10 August 2001)

United Nations General Assembly, *Resolution Adopted by the General Assembly*, GA Res 59/24, 59th sess, Agenda Item 49 (a), A/Res/59/24 (4 February 2005)

United Nations General Assembly, *Resolution Adopted by the General Assembly*, GA Res 60/1, 60th sess, Agenda Item 46 and 120, A/Res/60/1 (24 October 2005)

United Nations General Assembly, *Report of the Review Conference on the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, A/CONF.210/2006/15, Review Conference on the Agreement for the Implementation of the Provisions of the United Nations Convention

on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (5 July 2006)

United Nations General Assembly, 'Resolution adopted by the General Assembly on 8 December 2006', A/RES/61/105, 61st sess, Item 71 (b) (6 March 2007)

United Nations General Assembly, *Resolution Adopted by the General Assembly on 4 December 2009*, GA Res 64/72, 64th sess, Agenda Item 76 (b), A/Res/64/72 (19 March 2010)

United Nations General Assembly, *Report of the Resumed Review Conference on the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, A/CONF.210/2010/7, Review Conference on the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (27 July 2010)

United Nations General Assembly, *Resolution Adopted by the General Assembly on 6 December 2011*, GA Res 66/68, 66th sess, Agenda Item 76 (b), A/Res/66/68 (28 March 2012)

United Nations General Assembly, *Resolution Adopted by the General Assembly*, GA Res 66/231, 66th sess, Agenda Item 76(a), A/Res/66/231 (5 April 2012)

United Nations General Assembly, *The Future We Want*, GA Res 66/288, 66th sess, Agenda Item 19, A/RES/66/288 (11 September 2012)

United Nations General Assembly, *Oceans and the Law of the Sea: Report of the Secretary-General*, GA Res 67/78, 67th sess, Agenda Item 75 (a), A/67/78 (18 April 2013)

United Nations General Assembly, *Oceans and the Law of the Sea: Report of the Secretary-General*, GA Res 68/70, 68th sess, Agenda Item 76 (a), A/68/70 (27 February 2014)

World Trade Organization, ‘Arrangement between the European Communities and Chile’ (WT/DS193/3, WTO, 6 April 2001)

L. OTHER DOCUMENTS

‘Attachment on RFMO Performance Review’ (Report of the Joint Meeting of Tuna RFMOs Appendix 14 TunaRFMOs2007/16, 22-26 January 2007)

‘Compatibilidad del “Acuerdo de Galápagos” con el “Acuerdo de Nueva York”, a la Luz de “Convención de Naciones Unidas sobre Derecho del Mar” (CONVEMAR)’ (Report)

1946 International Convention for the Regulation of Whaling, *Notification of Amendments to the Schedule, as Amended by the Commission at the 64th Annual Meeting, Panama City, Panama, July 2012*

Acuerdo de Cooperación entre la Comisión Oceanográfica Intergubernamental (UNESCO/COI) y la Comisión Permanente del Pacífico Sur (CPPS) (2008)

Acuerdo de Cooperación entre la Comisión Permanente del Pacífico Sur y la Organización de las Naciones Unidas para la Agricultura y la Alimentación (1985)

Agreement Cooperation with IMO (OSPAR, 1999)

Agreement in the Form of an Exchange of Letters between the European Union and the Republic of Chile on the Provisional Application of the Understanding concerning the Conservation of Swordfish Stocks in the South-Eastern Pacific Ocean (June 2010)

Ascencio, Alfonso and Michael Bliss, 'Conserving the Biodiversity of the High Seas and Deep Oceans: Institutional Gaps in the International System' (Paper presented at the Workshop on the Governance of High Seas Biodiversity Conservation, Cairns, 16-19 June 2003)

Christophe Lefebvre, *Protection et Préservation du Milieu Marin: Les Apports des Conventions Régionales sur les Mers aux Dispositions de la Convention des Nations Unies sur le Droit de la Mer* (2010) Hors-série 8 Vertigo – La Revue Électronique en Sciences de l'Environnement <<http://vertigo.revues.org/10288>>

Clark, Nichola, *An Analysis of the Transparency of Marine Governance Organizations* (Master Thesis, Duke University, 2014)

Conference on the Governance of High Seas Fisheries and the United Nations Fish Agreement, *Ministerial Meeting* (1-5 May 2005) <http://www.dfo-mpo.gc.ca/fgc-cgp/conf_report_e.htm#a>

Convenio Marco de Cooperación entre la Comisión Permanente del Pacífico Sur (CPPS) y Conservation International Foundation Ecuador (CI) (2011)

Convention on the Conservation of Migratory Species of Wild Animals, *Resolution 7.2: Impact Assessment and Migratory Species*, Proceedings of the Seventh Meeting of the Conference of the Parties, Conference of the Parties to the Convention on the Conservation of Migratory Species of Wild Animals, 7th meeting, (18 to 24 September 2002)

Cooperation Agreement between the Intergovernmental Oceanographic Commission (IOC) and the Permanent Commission for the South Pacific (CPPS) (2003)

Cullis-Suzuki, Sarika and Daniel Pauly, 'Evaluating Global Regional Fisheries Management Organizations: Methodology and Scoring' (Working Paper No 2009-12, UBC Fisheries Centre, 2009)

EC-Chile Provisional Arrangement concerning the Conservation and Sustainable Exploitation of Swordfish Stocks in the South-Eastern Pacific Ocean, signed on 25 January 2001

Engler, M Cecilia, *Establishment and Implementation of a Conservation and Management Regime for High Seas Fisheries, with Focus on the Southeast Pacific and Chile: From Global Developments to Regional Challenges* (UN-Nippon Foundation Fellowship, 2007)

Gillinson, Sarah, 'Why Cooperate? A Multi-Disciplinary Study of Collective Action' (Working Paper 234, Overseas Development Institute, 2004)

Infrastructure Australia, *2013 State of Play Report: Australia's Key Economic Infrastructure Sectors* (December 2013) Australian Government Infrastructure Australia <www.infrastructureaustralia.gov.au/state-of-play/files/2013_State_of_Play_Report_on_Australias_Key_Economic_Infrastructure_Sectors_FINAL.pdf>

International Law Commission, 'Draft Articles on Prevention of Transboundary Harm from Hazardous Activities with Commentaries' (2001) Vol II Part 2 *Yearbook of the International Law Commission*.

IUCN, *10 Principles of High Seas Governance* (2008) IUCN <http://cmsdata.iucn.org/downloads/10_principles_for_high_seas_governance___final.pdf>

Lodge, Michael, 'Managing International Fisheries: Improving Fisheries Governance by Strengthening Regional Fisheries Management Organizations' (Briefing Paper No EEDP BP 07/01, Chatham House Energy, Environment and Development Programme, May 2007)

McLennan, Bruce, 'The History of Oceans Governance' (Monograph Series No 9, Australian Defence College, 2006)

Memorando de Entendimiento entre la Comisión Permanente del Pacífico Sur y la Organización Marítima Internacional (OMI) e intercambio de Notas para extensión de ME (2009)

Memorando de Entendimiento y Cooperación entre la Comisión Permanente del Pacífico Sur y la Organización del Sector Pesquero y Acuícola del Istmo Centroamericano (2014)

Memorandum de Cooperación entre la Secretaría del Convenio de Basilea sobre el Control de los Movimientos Transfronterizos de Desechos Peligrosos y su Eliminación y la Secretaría General de la Comisión Permanente del Pacífico Sur (2002)

Memorandum de Cooperación entre la Secretaría del Convenio sobre la Diversidad Biológica y la Secretaría de la Comisión Permanente del Pacífico Sur (1998)

Memorandum of Cooperation (MOC) on the Cross-Endorsement of WCPFC and IATTC Approved Observers when Observing on the High Seas of the Convention Areas of both Organizations (2009)

Memorandum of Cooperation between The Secretariat of the South Pacific Regional Environment Programme and The Secretariat of the Permanent Commission for the South Pacific SPREP/PROE-CPPS (2001)

Memorandum of Cooperation on the Exchange and Release of Data between the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean and the Inter-American Tropical Tuna Commission (2009)

Memorandum of Understanding between the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean and the Inter-American Tropical Tuna Commission (June 2006)

Memorandum of Understanding between the North East Atlantic Fisheries Commission (NEAFC) and the OSPAR Commission (2008)

Memorandum of Understanding between the Permanent Commission for South Pacific (CPPS) and the United Nations Environment Programme (UNEP) (2000)

Memorandum of Understanding between The Permanent Commission for the South Pacific, The United Nations Environment Programme UNEP/Regional Seas (2005)

Memorandum of Understanding on the Conservation of Migratory Sharks (2010)

Memorandum of Understanding with the International Seabed Authority (the Authority) (2010)

Morgera, Elisa and Elsa Tsioumani, ‘Yesterday, Today, and Tomorrow: Looking Afresh at the Convention on Biological Diversity’ (Working Paper Series No 2011/21, University of Edinburgh School of Law, 2011)

NEAFC, *Report of the Performance Review Panel of the North East Atlantic Fisheries Commission*, NEAFC (2014) NEAFC
<www.neafc.org/system/files/Final_Report_2014_NEAFC_Review.pdf>

OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic, ‘Sintra Statement’ (Ministerial Meeting of the OSPAR Commission, Sintra, Portugal, 22-23 July 1998, Annex 45, Ref. §B-10.2)

OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic, ‘Annex V on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area’ (1998)

OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic, 'Bergen Declaration' (Fifth International Conference on the Protection of the North Sea, Bergen, Norway, 20-21 March 2002)

OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic, 'OSPAR's Regulatory Regime for Establishing Marine Protected Areas (MPAs) in Areas Beyond National Jurisdiction (ABNJ) of the OSPAR Maritime Area' (Meeting of the OSPAR Commission, Brussels, Belgium, 22-26 June 2009, Annex 6, Ref. §6.13c)

OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic, 'Bergen Statement' (Meeting of the OSPAR Commission, Bergen, Norway, 20-24 September 2010, Annex 49, Ref. M6.2)

OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic, 'OSPAR Decision 2012/1 on the Establishment of the Charlie-Gibbs North High Seas Marine Protected Area' (Meeting of the OSPAR Commission, Bonn, Germany, 25-29 June 2012, Annex 6, Ref. §5.19a)

Rayfuse, Rosemary, 'Regional Allocation Issues or Zen and the Art of Pie Cutting' (Paper prepared for the Sharing the Fish Conference 06: Allocation Issues in Fisheries Management, Perth, 26 February – 2 March 2006)

Rosemary Rayfuse, *Regional Allocation Issues or Zen and the Art of Pie Cutting* (2007)
UNSW Legal Research Series 10
<<http://www.austlii.edu.au/au/journals/UNSWLRS/2007/10.html>>

S N Nandan, *The Exclusive Economic Zone: A Historical Perspective* (1987) Food and
Agriculture Organization of the United Nations
<<http://www.fao.org/docrep/s5280t/s5280t0p.htm>>

Serge M Garcia and Holly R Koehler, *Performance of the CCSBT 2009-2013: Independent Review* by Serge M Garcia and Holly R Koehler (2013)
<http://www.ccsbt.org/userfiles/file/docs_english/operational_resolutions/2014_Independent_Performance_Review.pdf>

Stanislas de Finance, *A 'Traffic-Light Approach' to the Implementation of the 2011 and 2012 Country Specific Recommendations (CSRs)* (2012) European Parliament Directorate-General for Internal Policies, Economic Governance Support Unit (EGOV)
<[http://www.europarl.europa.eu/RegData/etudes/etudes/join/2014/497735/IPOL-ECON_ET\(2014\)497735_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/etudes/join/2014/497735/IPOL-ECON_ET(2014)497735_EN.pdf)>

The University of Western Australia, *UWA Safety Compliance Monitoring Traffic Light System* (June 2014) University Safety Committee
<www.safety.uwa.edu.au/management/monitoring/?a=1952106>

Tullio Treves, *1958 Geneva Conventions on the Law of the Sea, Geneva, 29 April 1958* (2008) Audiovisual Library of International Law <<http://legal.un.org/avl/ha/gclos/gclos.html>>

World Ocean Review, *The Future of Fish – The Fisheries of the Future* (2013) Maribus
<<http://worldoceanreview.com/en/wor-2/>>

World Summit on Sustainable Development, *Johannesburg Plan of Implementation* (2002)
World Trade Organization, 'Arrangement between the European Communities and Chile', WT/DS193/3, 6 April 2001

M. SELECTED WEBSITES

BBNJ Working Group:

<http://www.un.org/depts/los/biodiversityworkinggroup/biodiversityworkinggroup.htm>

Comisión Permanente del Pacífico Sur: www.cpps-int.org/

Convention on Biological Diversity: www.cbd.int/

Division for Ocean Affairs and the Law of the Sea: www.un.org/depts/los/

FAO Regional Fisheries Organisations: www.fao.org/fishery/rfb/search/en

Food and Agriculture Organization: www.fao.org/

Global Environment Facility: www.thegef.org/

Inter-American Tropical Tuna Commission: www.iattc.org/

International Maritime Organization: www.imo.org/

International Seabed Authority: www.isa.org.jm/

International Whaling Commission: <https://iwc.int/home>

North East Atlantic Fisheries Commission: www.neafc.org/

Commission for the Protection of the Marine Environment of the North-East Atlantic:
www.ospar.org/

South Pacific Regional Fisheries Management Organisation: www.southpacificrfmo.org/







Tuna Regional Fisheries Management Organisations: www.tuna-org.org/

UNEP Regional Seas Programme: www.unep.org/regionalseas/about/default.asp

United Nations Environment Programme: www.unep.org/

United Nations General Assembly: www.un.org/en/ga/

APPENDIX A: LIST OF STATES THAT ARE FISHING IN THE SOUTHEAST PACIFIC WITH THEIR CATCH DATA AND RFMO MEMBERSHIP¹

















State	Main Species Caught in 2012	IATTC Membership	SPRFMO Membership
Chile	Anchoveta (30%); Araucanian herring (28%); Chilean kelp (9%); Chilean jack mackerel (8%); Jumbo flying squid (5%). <i>Yellowfin tuna <1%.</i>		
China	Jumbo flying squid (95%); Chilean jack mackerel (5%). <i>Bigeye, Yellowfin and Albacore tuna <1%.</i>		
Colombia	Yellowfin tuna (34%); Skipjack tuna (34%); Pacific anchoveta (16%). <i>Bigeye tuna make up 3% of the catch. Non-highly migratory fish species (including, crustaceans and molluscs) make up the rest of the catch.</i>		Cooperating non-member
Ecuador	Skipjack tuna (31%); Frigate and bullet tunas (13%); Chub mackerel (12%); Longnose anchovy (12%); Pacific thread herring (7%); Bigeye tuna (7%); Yellowfin tuna (6%). <i>Very diverse catch composed of both tuna-like species and non-migratory species.</i>		Cooperative non-member

Note: The catch data is for FAO Major Fishing Area 87 (Southeast Pacific) and includes both catches within and beyond national jurisdiction. CPPS is not represented as its membership is limited to coastal States of the Southeast Pacific.







Legend: *: Through European Union

¹ Data obtained from FAO Fisheries and Aquaculture Department, Statistics and Information Service FishStatJ: Universal software for fishery statistical time series. Copyright 2011. FishstatJ Version 2.1.1 was used to analyse the data. This version includes the FAO Capture Production data 1950-2012 released in March 2014. The database was accessed on 8 May 2014. <http://www.fao.org/fishery/statistics/software/fishstatj/en>. State memberships for IATTC and SPRFMO were obtained from their websites (<http://www.iattc.org/HomeENG.htm>; <http://www.southpacificrfmo.org/status-of-the-convention/>; status as of December and May 2014, respectively).









Appendix A (continued)

State	Main Species Caught in 2012	IATTC Membership	SPRFMO Membership
Guatemala	Skipjack tuna (42%); Bigeye tuna (34%); Yellowfin tuna (24%).		
Japan	Bigeye tuna (38%); Swordfish (15%); Yellowfin tuna (11%); Jumbo flying squid (10%); Albacore (10%). <i>Very diverse catch.</i>		
Korea, Republic of	Jumbo flying squid (60%); Chilean jack mackerel (40%). <i>Bigeye, yellowfin and albacore tuna make only a very small percentage of the catch in past years.</i>		
Mexico	Yellowfin tuna (50%); Skipjack tuna (48%); Bigeye tuna (1%); Eastern Pacific bonito (1%). <i>Exclusively tuna catches.</i>		
Nicaragua	Skipjack tuna (48%); Yellowfin tuna (32%); Bigeye tuna (21%). <i>Exclusively tuna-like species.</i>		
Panama	Skipjack tuna (56%); Yellowfin tuna (33%); Bigeye tuna (11%). <i>Exclusively tuna catches.</i>		Cooperating non-member
Peru	Anchoveta (78%); Jumbo flying squid (10%); Chilean jack mackerel (4%). <i>Tuna-like species make up a very small percentage of the catch.</i>		Cooperative non-member
Portugal	Swordfish (60%); Blue shark (26%). <i>Tuna-like species make up a very small percentage of the catch.</i>	 *	 *
Spain	Swordfish (44%); Blue shark (42%). <i>Very small percentage of rays, shortfin mako, marlins, sailfishes, and skipjack tuna.</i>	 *	 *

Appendix A (continued)

State	Main Species Caught in 2012	IATTC Membership	SPRFMO Membership
Taiwan Province of China	Jumbo flying squid (92%); Albacore (4%). <i>Tuna-like species make up a small percentage of the catch.</i>		
Vanuatu	Chilean jack mackerel (98%); Chub mackerel (1%). <i>Tuna-like species make up a small percentage of the catch.</i>		
Venezuela	Skipjack tuna (67%); Yellowfin tuna (32%); Bigeye tuna (2%). <i>Tuna-like species make up the largest percentage of the catch. A small percentage of Eastern Pacific bonito was also caught.</i>		

APPENDIX B: LIST OF STATES THAT HAVE FISHED IN THE SOUTHEAST PACIFIC WITH THEIR CATCH DATA AND RFMO MEMBERSHIP¹

State	Last Fishing Year	Main Species Caught During the Last Year of Catch	IATTC Membership	SPRFMO Membership
Germany	2011	Chilean jack mackerel (98%); <i>Chub mackerel</i> (<1%). <i>Exclusively mackerels in recent years.</i>	 *	 *
Netherlands	2011	Chilean jack mackerel (99%); Southern rays breem (1%). <i>Exclusively mackerels and Southern rays breems.</i>	 *	 *
Poland	2011	Chilean jack mackerel (98%); Southern rays breem (1%). <i>Exclusively mackerels and Southern rays breems.</i>	 *	 *
Belize	2010 ²	Chilean jack mackerel (99%); <i>Chub mackerel</i> (1%). <i>Data on bigeye, yellowfin and skipjack tuna is unavailable but these species were fished between 1993 and 2001</i>		













Note: The catch data is for FAO Major Fishing Area 87 (Southeast Pacific) and includes both catches within and beyond national jurisdiction. CPPS is not represented as its membership is limited to coastal States of the Southeast Pacific.

Legend: *: Through European Union; ^: Through Kingdom of Denmark

¹ Data obtained from FAO Fisheries and Aquaculture Department, Statistics and Information Service FishStatJ: Universal software for fishery statistical time series. Copyright 2011. FishstatJ Version 2.1.1 was used to analyse the data. This version includes the FAO Capture Production data 1950-2012 released in March 2014. The database was accessed on 8 May 2014. <http://www.fao.org/fishery/statistics/software/fishstatj/en>. State memberships for IATTC and SPRFMO were obtained from their websites (<http://www.iattc.org/HomeENG.htm>; <http://www.southpacificrfmo.org/status-of-the-convention/>; status as of December and May 2014, respectively).

² FAO data on bigeye, yellowfin and skipjack tuna is unavailable or unobtainable for Belize in 2012 and previous years. It is therefore not possible to know if this State is still fishing for these species in the Southeast Pacific. Belize hasn't fished for Chilean jack mackerel and chub mackerel in the Southeast Pacific since 2010, as confirmed by SPRFMO data.

Appendix B (continued)













State	Last Fishing Year	Main Species Caught During the Last Year of Catch	IATTC Membership	SPRFMO Membership
Honduras	2010 ³	Skipjack tuna (71%); Yellowfin tuna (21%); Bigeye tuna (7%). <i>Exclusively tuna-like species.</i>	Cooperative non-member	
Faroe Islands	2010	Chilean jack mackerel (99%); Chub mackerel (1%). <i>Exclusively mackerels.</i>		 ^
Lithuania	2010	Chilean jack mackerel (98%); Chub mackerel (1%). <i>Almost exclusively non-tuna-like species.</i>	 *	 *
USA	2009 ⁴	Skipjack tuna (68%); Yellowfin tuna (27%); Bigeye tuna (5%). <i>Exclusively tuna and tuna-like fish catches.</i>		Cooperating non-member
Russian Federation	2009	Chilean jack mackerel (95%); Chub mackerel (5%). <i>Exclusively mackerel catches. Catches in the early 90s included a very small percentage of tuna-like fish species, as well as South Pacific hake, South American pilchard, rubyfishes and squids.</i>		
Cook Islands	2007 ⁵	Albacore (100%). <i>Exclusively albacore catches.</i>		
Uruguay	2005	Swordfish (71%); Blue shark (12%); Tuna-like fishes (11%). <i>Large percentage of highly migratory fish species.</i>		

³ FAO data is unavailable or unobtainable for Honduras in 2011 and 2012. It is therefore not possible to know if this State is still fishing for these species in the Southeast Pacific.

⁴ FAO data is unavailable or unobtainable for the USA in 2011 and 2012. It is therefore not possible to know if this State is still fishing for these species in the Southeast Pacific.















⁵ FAO data on albacore tuna is unavailable or unobtainable for Cook Islands in 2011 and 2012. It is therefore not possible to know if this State is still fishing for these species in the Southeast Pacific. Cook Islands have only reported to fish in the Southeast Pacific once, in 2007, for albacore tuna.

Appendix B (continued)



State	Last Fishing Year	Main Species Caught During the Last Year of Catch	IATTC Membership	SPRFMO Membership
Ghana	2001	Clupeoids (68%); Chilean jack mackerel (18%); Chub mackerel (14%). <i>Exclusively mackerels and clupeoids.</i>		
Estonia	1999	Patagonian blennie (100%). <i>Other years' catches included Chilean jack mackerel, chub mackerel, South American pilchard and squids.</i>	 *	 *
Cyprus	1998	Skipjack tuna (70%); Yellowfin tuna (23%); Bigeye tuna (7%). <i>Exclusively tuna catches.</i>	 *	 *
Costa Rica	1996 ⁶	Bigeye tuna (57%); Skipjack tuna (43%). <i>Exclusively tuna catches. Possibly some yellowfin tuna catches as well.</i>		
Liberia	1996	Skipjack tuna (46%); Bigeye tuna (34%); Yellowfin tuna (20%). <i>Exclusively tuna catches.</i>	Cooperating non-member	Cooperating non-member
Saint Vincent and the Grenadines	1994	Skipjack tuna (44%); Yellowfin tuna (35%); Bigeye tuna (22%). <i>Exclusively tuna catches.</i>		
Cuba	1992	Chilean jack mackerel (100%). <i>Skipjack tuna also makes a very small proportion of the catch.</i>		

⁶ FAO data on yellowfin tuna is unavailable or unobtainable for Costa Rica in 2012 and previous years. It is therefore not possible to know if this State is still fishing for these species in the Southeast Pacific. The last reported catch for Costa Rica was in 1996 for skipjack and bigeye tuna.

Appendix B (continued)









































State	Last Fishing Year	Main Species Caught During the Last Year of Catch	IATTC Membership	SPRFMO Membership
Latvia	1992	Chilean jack mackerel (76%); Undefined marine fishes (24%). <i>Other years' catches included a very small percentage of tuna-like fish species.</i>	 *	 *
Ukraine	1992	Chilean jack mackerel (98%); Chub mackerel (1%). <i>Exclusively mackerel catches. Small percentage of jumbo flying squid and South American pilchard catches in previous years.</i>		
Georgia	1991	Chilean jack mackerel (100%). <i>Other years' catches included chub mackerel, South American pilchard and rubyfishes.</i>		
Bulgaria	1990	Chilean jack mackerel (>99%); Chub mackerel (<1%). <i>Other years' catches included other non-highly migratory fish species as well as a very small percentage of tuna-like species.</i>	 *	 *
USSR	1987	Chilean Jack Mackerel (97%); South American pilchard (2%). <i>Other years' catches included a very small percentage of alfonsoinos, clupeoids, squids, Eastern Pacific bonitos and tuna-like fish species.</i>		
Canada	1984	Skipjack tuna (57%); Yellowfin tuna (43%). <i>Exclusively tuna and tuna-like catches.</i>		
Bermuda	1982	Skipjack tuna (75%); Yellowfin tuna (18%); Black skipjack (7%). <i>Exclusively tuna and tuna-like catches.</i>		

Appendix B (continued)

State	Last Fishing Year	Main Species Caught During the Last Year of Catch	IATTC Membership	SPRFMO Membership
France	1974	Skipjack tuna (59%); Yellowfin tuna (39%); Bigeye tuna (2%). <i>Exclusively tuna catches.</i>	 * ⁷	 *

⁷ France is a member of IATTC both as a member of the European Union and as itself.

APPENDIX C: LIST OF STATES THAT ARE FISHING IN THE SOUTHEAST PACIFIC WITH THEIR MAIN TREATY MEMBERSHIP

State	LOSC ¹	UNFSA ²	CBD ³	CMS ⁴	CMS Sharks MoU ⁵	ACAP ⁶	CITES ⁷	FAO Compliance Agreement ⁸
Chile	 1997		 1994	 1983	 2011	 2005	 1975	 2004
China ⁹	 1996		 1993				 1981	
Colombia			 1994		 2013		 1981	
Ecuador	 2012		 1993	 2004		 2003	 1975	
Guatemala	 1997		 1995				 1979	

Legend: Green dot: ratification; yellow dot: signed but not ratified; red dot: not signed or ratified.

¹ *United Nations Law of the Sea Convention* (Status as of 10 October 2014): www.un.org/depts/los/reference_files/status2010.pdf (accessed: 27 December 2014).

² *United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks* (Status as of 10 October 2014) www.un.org/depts/los/reference_files/status2010.pdf (accessed: 27 December 2014).

³ *Convention on Biological Diversity*: <http://www.cbd.int/information/parties.shtml> (accessed: 27 December 2014).

⁴ *Convention on the Conservation of Migratory Species of Wild Animals* (Status as of 1 May 2014): <http://www.cms.int/en/parties-range-states> (accessed: 27 December 2014).

⁵ *CMS Memorandum of Understanding on Sharks*: <http://www.cms.int/en/legalinstrument/sharks> (accessed: 27 December 2014).

















































































⁶ *Agreement on the Conservation of Albatrosses and Petrels*: <http://www.acap.aq/en/resources/parties-to-acap> (accessed: 27 December 2014).

⁷ *Convention on International Trade in Endangered Species of Wild Fauna and Flora*: <http://www.cites.org/eng/disc/parties/chronolo.php> (accessed: 27 December 2014).









































⁸ *Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas*: http://www.fao.org/fileadmin/user_upload/legal/docs/1_012s-e.pdf (accessed: 8 January 2014).

⁹ Also applies to Taiwan Province of China.

Appendix C (continued)

State	LOSC	UNFSA	CBD	CMS	CMS Sharks MoU	ACAP	CITES	FAO Compliance Agreement
Japan	 1996	 2006	 1993				 1980	 2000
Korea, Republic of	 1996	 2008	 1994				 1993	 2003
Mexico	 1983		 1993				 1991	 1999
Nicaragua	 2000		 1995				 1977	
Panama	 1996	 2008	 1995	 1989			 1978	
Peru			 1993	 1997		 2005	 1975	 2001
Portugal	 1997	 2003	 1993	 1997			 1980	 EU: 1996
Spain	 1997	 2003	 1993	 1985		 2003	 1986	 EU: 1996
Vanuatu	 1999		 1993		 2013		 1989	
Venezuela			 1994				 1977	

APPENDIX D: LIST OF STATES THAT HAVE FISHED IN THE SOUTHEAST PACIFIC WITH THEIR MAIN TREATY MEMBERSHIP

State	LOSC ¹	UNFSA ²	CBD ³	CMS ⁴	CMS Sharks MoU ⁵	ACAP ⁶	CITES ⁷	FAO Compliance Agreement ⁸
Belize	 1983	 2005	 1993				 1986	 2005
Bermuda	 UK: 1997	 UK: 2001	 UK: 1994	 UK: 1985	 UK: 2012	 UK: 2004	 UK: 1976	 EU: 1996
Bulgaria	 1996	 2006	 1996	 1999			 1991	 EU: 1996
Canada	 2003	 1999	 1992				 1975	 1994
Cook Islands	 1995	 1999	 1993	 2006				 2006

Legend: Green dot: ratification; yellow dot: signed but not ratified; red dot: not signed or ratified.

¹ *United Nations Law of the Sea Convention* (Status as of 10 October 2014): www.un.org/depts/los/reference_files/status2010.pdf (accessed: 27 December 2014).

² *United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks* (Status as of 10 October 2014) www.un.org/depts/los/reference_files/status2010.pdf (accessed: 27 December 2014).

³ *Convention on Biological Diversity*: <http://www.cbd.int/information/parties.shtml> (accessed: 27 December 2014).

⁴ *Convention on the Conservation of Migratory Species of Wild Animals* (Status as of 1 May 2014): <http://www.cms.int/en/parties-range-states> (accessed: 27 December 2014).

































































⁵ *CMS Memorandum of Understanding on Sharks*: <http://www.cms.int/en/legalinstrument/sharks> (accessed: 27 December 2014).

⁶ *Agreement on the Conservation of Albatrosses and Petrels*: <http://www.acap.aq/en/resources/parties-to-acap> (accessed: 27 December 2014).

⁷ *Convention on International Trade in Endangered Species of Wild Fauna and Flora*: <http://www.cites.org/eng/disc/parties/chronolo.php> (accessed: 27 December 2014).

















































































⁸ *Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas*: http://www.fao.org/fileadmin/user_upload/legal/docs/1_012s-e.pdf (accessed: 8 January 2014).

Appendix D (continued)

State	LOSC	UNFSA	CBD	CMS	CMS Sharks MoU	ACAP	CITES	FAO Compliance Agreement
Costa Rica	 1992	 2001	 1994	 2007	 2010		 1975	
Cuba	 1984		 1994	 2008			 1990	
Cyprus	 1988	 2002	 1996	 2001			 1974	 2000
Estonia	 2005	 2006	 1994	 2008			 1992	 EU: 1996
Faroe Islands	 Denmark: 2004	 Denmark: 2003	 Denmark: 1993	 ⁹ Denmark: 1983	 Denmark: 2011		 Denmark: 1977	 EU: 1996
France	 1996	 2003	 1994	 1990		 2005	 1978	 EU: 1996
Georgia	 1996		 1994	 2000			 1996	 1994
Germany	 1994	 2003	 1993	 1984	 2011		 1976	 EU: 1996

⁹ The non-application of the CMS to the Faroe Islands was revoked by Denmark. Source: Note verbale of 31 May 1989.

Appendix D (continued)

State	LOSC	UNFSA	CBD	CMS	CMS Sharks MoU	ACAP	CITES	FAO Compliance Agreement
Ghana	 1983		 1994	 1988	 2010		 1975	 2003
Honduras	 1993		 1995	 2007			 1985	
Latvia	 2004	 2007	 1995	 1999			 1997	 EU: 1996
Liberia	 2008	 2005	 2000	 2004	 2010		 1981	
Lithuania	 2003	 2007	 1996	 2002			 2001	 EU: 1996
Netherlands	 1996	 2003	 1994	 1983	 2011		 1984	 EU: 1996
Poland	 1998	 2006	 1996	 1997			 1989	 EU: 1996
Russian Federation	 1997	 1997	 1995				 1992	
Saint Vincent and the Grenadines	 1993	 2010	 1996				 1988	
Ukraine	 1999	 2003	 1995	 1999			 1999	

Appendix D (continued)

State	LOSC	UNFSA	CBD	CMS	CMS Sharks MoU	ACAP	CITES	FAO Compliance Agreement
Uruguay	<div><div></div></div> 1992	<div><div></div></div> 1999	<div><div></div></div> 1993	<div><div></div></div> 1990	<div><div></div></div>	<div><div></div></div> 2008	<div><div></div></div> 1975	<div><div></div></div> 1999
USA	<div><div></div></div>	<div><div></div></div> 1996	<div><div></div></div>	<div><div></div></div>	<div><div></div></div> 2010	<div><div></div></div>	<div><div></div></div> 1974	<div><div></div></div> 1995

**APPENDIX E: SUMMARY TABLE OF IDENTIFIED OPPORTUNITIES AND CHALLENGES IN COLLABORATION FOR
INTER-INSTITUTIONAL COOPERATION**

	Opportunities	Challenges
Geographical Scope	<ul style="list-style-type: none"> ✓ Extensive geographical coverage of the Southeast Pacific; ✓ Both marine areas within and beyond national jurisdiction are covered by the regional institutions. 	<ul style="list-style-type: none"> ✗ Less extensive management coverage in the most northern and southern parts of the Southeast Pacific; ✗ Unclear geographical scope for CPPS.
Mandate	<ul style="list-style-type: none"> ✓ SPRFMO and IATTC are RFMOs and hence have a management mandate; ✓ Mandate complementarity between IATTC (management of highly migratory species) and SPRFMO (management of non-highly migratory species); ✓ CPPS is a regional fisheries organisation and the executive Secretariat for the Southeast Pacific regional seas programme. 	<ul style="list-style-type: none"> ✗ CPPS has an advisory mandate.
Collaboration	<ul style="list-style-type: none"> ✓ IATTC and SPRFMO have provisions in their conventions on cooperation with other institutions; ✓ SPRFMO's cooperation provision include fishery organisations as well as UN specialised agencies and any other organisations whose work is of relevance to SPRFMO; 	<ul style="list-style-type: none"> ✗ IATTC's cooperation provision only include cooperation with other regional and global fishery organisations; ✗ CPPS does not have any cooperation provision in its convention;

Appendix E (continued)

	Opportunities	Challenges
Collaboration (continued)	<ul style="list-style-type: none"> ✓ CPPS has signed 32 MoUs with other universities, international organisations and programmes, and financial and scientific institutions, notably with FAO, CBD, UNEP, SPREP, IMO, IOC, OSPESCA, CI and the Secretariat of the Basel Convention; ✓ IATTC has signed three MoUs, with WCPFC, IAC and ACAP; ✓ IATTC and CPPS have said to informally cooperate. 	<ul style="list-style-type: none"> ✗ Limited participation of IATTC, CPPS and SPRFMO at each other's meetings; ✗ No MoUs have been signed to date between the three institutions; ✗ SPRFMO has not yet signed any MoUs; ✗ Limited interaction and collaboration between the three institutions.
Scientific Data Collection and Exchange	<ul style="list-style-type: none"> ✓ All three institutions use their own scientific information as their knowledge base; ✓ All three institutions have legal provisions requiring Contracting Parties to collect data and undertake scientific research on fishery resources and to contribute them to the Commission, both requirements have been implemented by IATTC and SPRFMO; ✓ CPPS and SPRFMO have a provision on the exchange of fisheries data between Contracting Parties and, for non-confidential data, with other relevant organisations and States; 	<ul style="list-style-type: none"> ✗ No indication of collaboration in information and data exchanges between the three institutions; ✗ IATTC does not have a legal provision on the exchange of fisheries data with other relevant organisations and States; ✗ SPRFMO and IATTC do not have legal provisions on broader scientific research on biodiversity; ✗ CPPS does not have a legal provision on the adoption of data standards;

Appendix E (continued)

	Opportunities	Challenges
Scientific Data Collection and Exchange (continued)	<ul style="list-style-type: none"> ✓ IATTC extends its data collection duty to non-target species; SPRFMO to marine ecosystems; and CPPS to marine resources; ✓ IATTC member States collect data on targeted stocks, bycatch species, such as seabirds, sharks and sea turtles, and vessels; ✓ SPRFMO has measures on the collection of data on bycatch and non-target species; ✓ SPRFMO has a requirement to collect annual catch data, data to assess the impacts of fishing on non-target and associated or dependent species, and data on landings and transshipment; ✓ CPPS has a legal provision on undertaking climatic and socio-economic studies; ✓ IATTC and SPRFMO have legal provisions on the adoption of data standards and have implemented this provision by adopting templates; ✓ SPRFMO member States are to establish observer programmes to collect relevant data. 	<ul style="list-style-type: none"> ✗ IATTC does not necessarily monitor non-target species and there is few data collection and research programmes on non-target species and marine environmental protection; ✗ SPRFMO only undertakes stock assessments on Chilean jack mackerel and targeted deep-sea species; ✗ SPRFMO has no research programme on non-target species or habitats of special concern.

Appendix E (continued)

	Opportunities	Challenges
Capacity Building	<p>✓ IATTC has a legal provision on training for developing countries Parties to its convention;</p> <p>✓ IATTC has implemented a training requirement for scientists as well as a requirement to educate fishermen with regards to sea turtle bycatch.</p>	<p>✗ SPRFMO and CPPS do not have legal provisions on education and training, and SPRFMO has not established such measures.</p>

**APPENDIX F: SUMMARY TABLE OF IDENTIFIED OPPORTUNITIES AND CHALLENGES IN CONSERVATION FOR
INTER-INSTITUTIONAL COOPERATION**

	Opportunities	Challenges
Species Coverage	<ul style="list-style-type: none"> ✓ IATTC manages tunas and tuna-like species as well as other bycatch species; ✓ SPRFMO manages all fish, mollusc and crustacean species and other non-highly migratory high seas living resources; ✓ CPPS has the mandate to promote the conservation of all marine living resources within its Convention Area. 	<ul style="list-style-type: none"> ✗ Anadromous and catadromous species are not managed by either IATTC or SPRFMO.
Objectives	<ul style="list-style-type: none"> ✓ Overarching objective of long-term conservation and sustainable use of fisheries resources for IATTC and SPRFMO; ✓ CPPS coordinates its member States' marine policies, facilitates scientific studies to promote the conservation and sustainable use of marine resources and works towards marine environmental protection, with particular regard to marine pollution. 	
Conservation Principles	<ul style="list-style-type: none"> ✓ All three institutions' mandates incorporate the precautionary principle and they have a legal provision on the use of caution when information is uncertain, unreliable or inadequate; 	<ul style="list-style-type: none"> ✗ IATTC has no legal provision on the application of the ecosystem approach.

Appendix F (continued)

	Opportunities	Challenges
Conservation Principles (continued)	✓ SPRFMO and CPPS have legal provisions on the application of the ecosystem approach.	
Conservation and Management Measures	<ul style="list-style-type: none"> ✓ All three institutions have a legal provision on the establishment of an allowable catch and fishing effort; ✓ SPRFMO has effort and catch management in place; ✓ All three institutions have legal provisions on conservation measures for target stocks; ✓ IATTC has implemented conservation measures for targeted fish stocks, including especially time and spatial closures and catch and effort limitations; ✓ SPRFMO has implemented conservation measures for Chilean jack mackerel; ✓ IATTC and SPRFMO have legal provisions on conservation measures for associated, dependent and same ecosystem species; ✓ Some IATTC conservation measures are in place for seabirds, sharks and sea turtles; 	<ul style="list-style-type: none"> ✗ IATTC has not established a management plan for targeted fish stocks; ✗ SPRFMO has not implemented conservation measures for targeted fish stocks other than Chilean jack mackerel; ✗ No legal provisions on the adoption of plans of action for the conservation of <i>Chondrichthyes</i> and seabirds and their bycatch reduction; ✗ SPRFMO does not have an explicit legal provision on the minimisation of bycatch; ✗ IATTC and SPRFMO have not implemented a regional plan for the conservation of <i>Chondrichthyes</i>;

Appendix F (continued)

	Opportunities	Challenges
<p>Conservation and Management Measures (continued)</p>	<ul style="list-style-type: none"> ✓ IATTC has conservation measures in place for the regulation of longline fisheries with regards to seabirds; ✓ IATTC encourages its States to establish and implement a national plan of action for the conservation of sharks. It also has measures in place for the release and avoidance of sharks and rays; ✓ IATTC has established a Bycatch Working Group; ✓ SPRFMO has measures in place for the conservation of seabirds, particularly the reduction of seabird bycatch in its longline fisheries; ✓ CPPS has legal provisions on the establishment of marine protected areas and fisheries closure areas; ✓ CPPS has legal provisions on the protection of endangered and threatened species of fauna and flora within national jurisdiction. 	<ul style="list-style-type: none"> ✗ None of the three institutions have legal provisions relating to the conservation of albatrosses and petrels; ✗ IATTC and SPRFMO have no legal provisions on the protection of endangered or threatened species and IATTC has not implemented any; ✗ SPRFMO has no measures on the protection of migratory species along their migratory routes; ✗ IATTC and CPPS do not have provisions on the development of management plans or regional assessments for improved management of fishing capacity; ✗ IATTC does not have a legal provision on the marking of vessels and gear; ✗ SPRFMO has no measures on fish and mesh size limits, closure areas, the amount of discard and types of fishing gear allowed;

Appendix F (continued)

	Opportunities	Challenges
Conservation and Management Measures (continued)		✘ IATTC and SPRFMO have no legal provisions on area-based management or the establishment of protected areas and time and area closures, and both have not implemented measures for area-based management.
Environmental Protection Measures	<ul style="list-style-type: none"> ✓ SPRFMO and CPPS have legal provisions on the protection of the marine environment, VMEs and habitats; ✓ SPRFMO has implemented bottom fishing closures for the protection of VMEs and has a prohibition in place to undertake bottom fishing in its Convention Area; ✓ SPRFMO and CPPS have legal provisions on the prevention and reduction of marine pollution; ✓ CPPS has a legal provision on the use of environmental assessments prior to the conduction of activities; ✓ SPRFMO requires its member States to undertake environmental assessments for bottom fishing. 	<ul style="list-style-type: none"> ✘ IATTC has no legal provision on the protection of the marine environment, VMEs and habitats; ✘ Outside of some conservation measures for seabirds, sharks and sea turtles, IATTC has not implemented conservation measures for other species or ecosystems, including VMEs; ✘ IATTC and SPRFMO do not have legal provisions on the use of environmental impact assessments and IATTC has not implemented measures to this effect;

Appendix F (continued)

	Opportunities	Challenges
Environmental Protection Measures (continued)		<ul style="list-style-type: none"> ✖ IATTC has no measures on the protection of rare or fragile ecosystems, depleted, threatened or endangered species' habitats and other forms of marine life; ✖ Outside of bottom fishing prohibition at VMEs, there are no other SPRFMO measures in place to protect critical fisheries habitats or for marine environmental protection; ✖ IATTC has no legal provision on the prevention and reduction of marine pollution and has implemented no measures to this effect; ✖ SPRFMO has not implemented any measure for the minimisation of pollution, waste or discards; ✖ None of the three institutions have legal provisions on the prevention of alien species introduction and IATTC and SPRFMO have not implemented any measures to this effect;

Appendix F (continued)

	Opportunities	Challenges
Environmental Protection Measures (continued)		<ul style="list-style-type: none"> ✖ None of the three institutions have explicit legal provisions on the non-use of driftnets in their Conventions; ✖ None of the three institutions have legal provisions on the use of biological resources to avoid or minimise adverse impacts on biodiversity.
Monitoring	<ul style="list-style-type: none"> ✓ CPPS has a legal provision on the monitoring of marine pollution; ✓ IATTC has a requirement to monitor the catch of specific species, particularly targeted stocks and catch or fisheries interactions with some bycatch species such as seabirds, sea turtles and sharks; ✓ IATTC is monitoring the effects of FADs on fish stocks and bycatch; ✓ SPRFMO undertakes stock assessments for bottom fishing and to assess the impacts of fishing gears on VMEs. 	<ul style="list-style-type: none"> ✖ None of the three institutions have legal provisions for the identification and monitoring of processes and categories of activities which are likely to have significant adverse impacts on biodiversity; ✖ None of the three institutions have legal provisions on the identification and monitoring of biodiversity; ✖ IATTC stock assessments are to be undertaken for targeted fish species only;

Appendix F (continued)

	Opportunities	Challenges
Monitoring (continued)		<ul style="list-style-type: none"> ✖ IATTC and SPRFMO do not have legal provisions on the monitoring of marine pollution; ✖ IATTC has no measures on marine pollution monitoring.

**APPENDIX G: SUMMARY TABLE OF IDENTIFIED OPPORTUNITIES AND CHALLENGES IN COMPLIANCE FOR INTER-
INSTITUTIONAL COOPERATION**

	Opportunities	Challenges
Decision-making Process	<ul style="list-style-type: none"> ✓ SPRFMO and IATTC have the mandate to impose legally binding conservation and management measures and regulating measures and sanctions upon their member States; ✓ All the non-disputed resolutions adopted by CPPS are legally binding on its member States; ✓ When consensus cannot be reached, SPRFMO allows for questions of procedure to be taken by a majority of votes and questions of substance by a three-fourths majority; ✓ SPRFMO has an objection procedure that follows a very strict review protocol, whereby only discriminatory or inconsistent decisions can be objected to and equivalent alternative measures must be adopted by the objecting State(s). 	<ul style="list-style-type: none"> ✗ All IATTC, SPRFMO and CPPS decisions are to be taken by consensus; ✗ IATTC does not have an objection procedure in place: If one State opposes the decision, it cannot be passed; ✗ CPPS does have an objection procedure but it only allows its member States to object to a recommendation and hence not be bound by it.
Convention Update	<ul style="list-style-type: none"> ✓ IATTC's 1949 convention was updated in 2003 by the <i>IATTC Antigua Convention</i>; 	

Appendix G (continued)

	Opportunities	Challenges
Convention Update (continued)	<ul style="list-style-type: none"> ✓ CPPS' rules and statute were updated in 2013; ✓ SPRFMO is a newly established RFMO; its convention dates from 2009, corrected in April 2010. 	
Performance Reviews	<ul style="list-style-type: none"> ✓ IATTC has a legal provision on the obligation of Commission members to strengthen IATTC; ✓ IATTC has been discussing a possible performance review of the Commission since June 2007. 	<ul style="list-style-type: none"> ✗ None of the three institutions has to date undertaken a performance review.
RFMO and Treaty Membership	<ul style="list-style-type: none"> ✓ All but two States currently fishing in the Southeast Pacific have an adequate membership given the composition of their current catches. 	<ul style="list-style-type: none"> ✗ Both Chile and Japan have an incomplete RFMO membership according to the composition of their current catches; ✗ There are only six common member States between IATTC and SPRFMO; ✗ 58% of IATTC member and cooperative non-member States and 42% of SPRFMO member States are non-parties to the LOSC and/or UNFSA; ✗ In both IATTC and SPRFMO, most of the States currently fishing in the Southeast Pacific are either non-parties to the UNFSA or non-parties to both the LOSC and the UNFSA.

Appendix G (continued)

	Opportunities	Challenges
Compliance and Enforcement	<ul style="list-style-type: none"> ✓ IATTC member States have to report IUU activities to the Commission; ✓ IATTC member States have to prohibit the landing, transshipment, etc. of IUU vessels in their ports; ✓ All three institutions have legal provisions on the implementation of and compliance with their conventions and adopted measures, including through the investigation of infractions and the application of sanctions; ✓ CPPS imposes sanctions upon its member States' nationals and foreign vessels for infringing its resolutions; ✓ An IATTC regional observer programme for transshipment is in place; ✓ SPRFMO has a legal provision on the establishment of an observer programme; 	<ul style="list-style-type: none"> ✗ IATTC does not have a legal provision the regulation of transshipments; ✗ IATTC does not have a legal provision on the adoption of an observer programme or boarding and inspection procedures; ✗ IATTC and SPRFMO have not implemented boarding and inspection measures; ✗ IATTC and SPRFMO have not implemented a regional observer programme; ✗ IATTC has not implemented port State measures; ✗ IATTC does not have explicit legal provisions on the prevention, deterrence and elimination of IUU fishing but the duty of States not to undermine its measures, including by carrying out investigations, applying sanctions and taking actions to deter vessels from undertaking undermining activities;

Appendix G (continued)

	Opportunities	Challenges
Compliance and Enforcement (continued)	<ul style="list-style-type: none"> ✓ IATTC has requirements for five per cent observer coverage on longline vessels and observers on board each purse-seine vessels above 363 metric tons; ✓ SPRFMO has port State measures to control foreign vessels in terms of their landings and transshipments; ✓ All three institutions have legal provisions on the maintenance of a registry of fishing vessels entitled to fish in their Convention Areas; ✓ SPRFMO and CPPS have legal provisions on the prevention and elimination of IUU fishing through the adoption of sanctions and penalties and measures to monitor transshipment. SPRFMO also includes trade-related and market related measures, including catch documentation schemes and the establishment of an IUU vessel list while CPPS includes port States measures; 	<ul style="list-style-type: none"> ✗ IATTC has no measures in place for catch verification, sanctions, and investigations in case of IUU fishing; ✗ SPRFMO does not have an IUU vessel list in place; ✗ SPRFMO has no sanctions in place for IUU fishing; ✗ Catch quotas and other conservation and management measures established by IATTC are not always fully complied with, the yearly catch quota being often overstepped; ✗ Most SPRFMO States did not comply fully with the data reporting requirements, which included late and/or incomplete report submissions and no data submissions, particularly in the case of data on fishing activities and the impacts on non-target species, vessel data and landing and transshipment data.

Appendix G (continued)

	Opportunities	Challenges
Compliance and Enforcement (continued)	<ul style="list-style-type: none"> ✓ IATTC has implemented an IUU vessel list and prohibitions to let IUU vessels tranship or land their catch; ✓ SPRFMO and CPPS have legal provisions on the development of monitoring and surveillance measures and IATTC on the establishment of a comprehensive monitoring programme; ✓ SPRFMO and CPPS have legal provisions on the adoption of boarding and inspection procedures; ✓ CPPS has a legal provision on the establishment of a vessel monitoring system; ✓ SPRFMO established a vessel monitoring system; ✓ SPRFMO established a Compliance and Technical Committee; ✓ All SPRFMO States have so far fully complied with the requirements of the conservation and management measures on Chilean jack mackerel with regards to catch and effort management. 	

Appendix G (continued)































	Opportunities	Challenges
Dispute Settlement Procedures	✓ Both IATTC and SPRFMO have dispute settlement procedures, which, when disputes cannot be resolved by the relevant Parties, are dealt with an ad hoc expert panel.	✗ CPPS has no dispute settlement procedure in place.

**APPENDIX H: COMPARATIVE TABLE SUMMARISING THE INTEGRATION OF GLOBAL LEGAL MEASURES AIMED AT
STATES INTO IATTC, CPPS AND SPRFMO'S CONVENTIONS¹**











































<i>Legal Requirement</i>	<i>IATTC</i>	<i>CPPS</i>	<i>SPRFMO</i>
1. Contribute and exchange scientific data	●	●	●
2. Determine allowable catch	●	●	●
3. Take non-discriminatory conservation measures	●	●	●
4. Conservation measures for target stocks	●	●	●
5. Conservation measures for associated, dependent and same ecosystem species	●	●	●
6. Compatibility of measures	●	●	●
7. Protect critical fisheries habitats and vulnerable marine ecosystems	●	●	●
8. Pollution, waste, discards and bycatch minimisation	●	●	●
9. Prevention and elimination of overfishing and excess fishing capacity	●	●	●
10. Application of the precautionary approach	●	●	●
11. Promotion of the effectiveness of regional and global conservation and management measures	●	●	●
12. Effective monitoring, control and surveillance	●	●	●
13. Enforcement of regional conservation and management measures	●	●	●
14. Area-based management	●	●	●
15. Protection of endangered and threatened species	●	●	●
16. Adoption of measures relating to the use of biological resources to avoid or minimise adverse impacts on biodiversity	●	●	●

¹ This is a summary table from the analyses performed in Chapters 5 and 6. All references are to be found in these two chapters.

Appendix H (continued)
































<i>Legal Requirement</i>	<i>IATTC</i>	<i>CPPS</i>	<i>SPRFMO</i>
17. Significant adverse impacts prevention			
18. Prevention of alien species introduction			
19. Identification and monitoring			
20. Data collection			
21. Data sharing			
22. Education and training			
23. Scientific criteria			
24. Protection of the marine environment			
25. Marine pollution prevention			
26. Monitoring			

**APPENDIX I: COMPARATIVE TABLE SUMMARISING THE INTEGRATION OF GLOBAL LEGAL MEASURES AIMED AT
INSTITUTIONS INTO IATTC, CPPS AND SPRFMO'S CONVENTIONS¹**

<i>Legal Requirement</i>	<i>IATTC</i>	<i>CPPS</i>	<i>SPRFMO</i>
A) Take non-discriminatory conservation measures for high seas living resources			
B) Collect complete and accurate fisheries data, including for stock assessments as well as for the impacts that fishing has on non-target species			
C) Contribute and exchange fisheries data			
D) Promote and conduct scientific research on straddling and migratory fish stocks			
E) Develop appropriate technologies for research on straddling and migratory fish stocks			
F) Agree on standards for collection, reporting, verification and exchange of data			
G) Adopt conservation measures for target fish stocks, taking into account associated species			
H) Allocation of an allowable catch and fishing effort			
I) Development of effective monitoring and surveillance measures			
J) Establishment of boarding and inspection procedures			
K) Measures to reduce the number of seabirds caught as bycatch in the longline fisheries (soft law provision)			
L) Adoption of a regional plan for the conservation of <i>Chondrichthyes</i> (soft law provision)			
M) Adoption of measures to combat IUU fishing, including the development of unified port State measures (soft law provision)			
N) Strengthening of regional fisheries organisations for improved management of fishing capacity (soft law provision)			





















¹ This is a summary table from the analyses performed in Chapters 5 and 6. All references are to be found in these two chapters.

APPENDIX J: COMPARATIVE TABLE SUMMARISING THE INTEGRATION OF GLOBAL LEGAL MEASURES AIMED AT STATES INTO IATTC'S CONVENTION AND THEIR IMPLEMENTATION BY IATTC¹






























<i>Legal Requirement</i>	<i>IATTC Convention</i>	<i>IATTC Implementation</i>
1. Contribute and exchange scientific data		
2. Determine allowable catch		
3. Take non-discriminatory conservation measures		
4. Conservation measures for target stocks		
5. Conservation measures for associated, dependent and same ecosystem species		
6. Compatibility of measures		N/A
7. Protect critical fisheries habitats and vulnerable marine ecosystems		
8. Pollution, waste, discards and bycatch minimisation		
9. Prevention and elimination of overfishing and excess fishing capacity		
10. Application of the precautionary approach		
11. Promotion of the effectiveness of regional and global conservation and management measures		
12. Effective monitoring, control and surveillance		
13. Enforcement of regional conservation and management measures		
14. Area-based management		
15. Protection of endangered and threatened species		
16. Adoption of measures relating to the use of biological resources to avoid or minimise adverse impacts on biodiversity		

¹ This is a summary table from the analyses performed in Chapters 5 and 6. All references are to be found in these two chapters.

Appendix J (continued)






























<i>Legal Requirement</i>	<i>IATTC Convention</i>	<i>IATTC Implementation</i>
17. Significant adverse impacts prevention		
18. Prevention of alien species introduction		
19. Identification and monitoring		
20. Data collection		
21. Data sharing		
22. Education training		
23. Scientific criteria		
24. Protection of the marine environment		
25. Marine pollution prevention		
26. Monitoring		

APPENDIX K: COMPARATIVE TABLE SUMMARISING THE INTEGRATION OF GLOBAL LEGAL MEASURES AIMED AT INSTITUTIONS INTO IATTC'S CONVENTION AND THEIR IMPLEMENTATION BY IATTC¹

	<i>Legal Requirement</i>	<i>IATTC Convention</i>	<i>IATTC Implementation</i>
	A) Take non-discriminatory conservation measures for high seas living resources		
	B) Collect complete and accurate fisheries data, including for stock assessments as well as for the impacts that fishing has on non-target species		
	C) Contribute and exchange fisheries data		
	D) Promote and conduct scientific research on straddling and migratory fish stocks		
	E) Develop appropriate technologies for research on straddling and migratory fish stocks		
43	F) Agree on standards for collection, reporting, verification and exchange of data		
	G) Adopt conservation measures for target fish stocks, taking into account associated species		 / 
	H) Allocation of an allowable catch and fishing effort		
	I) Development of effective monitoring and surveillance measures		
	J) Establishment of boarding and inspection procedures		
	K) Measures to reduce the number of seabirds caught as bycatch in the longline fisheries (<i>soft law provision</i>)		
	L) Adoption of a regional plan for the conservation of <i>Chondrichthyes</i> (<i>soft law provision</i>)		
	M) Adoption of measures to combat IUU fishing, including the development of unified port State measures (<i>soft law provision</i>)		
	N) Strengthening of regional fisheries organisations for improved management of fishing capacity (<i>soft law provision</i>)		























¹ This is a summary table from the analyses performed in Chapters 5 and 6. All references are to be found in these two chapters.

**APPENDIX L: COMPARATIVE TABLE SUMMARISING THE INTEGRATION OF GLOBAL LEGAL MEASURES AIMED AT
STATES INTO SPRFMO'S CONVENTION AND THEIR IMPLEMENTATION BY SPRFMO¹**






























<i>Legal Requirement</i>	<i>SPRFMO Convention</i>	<i>SPRFMO Implementation</i>
1. Contribute and exchange scientific data		
2. Determine allowable catch		
3. Take non-discriminatory conservation measures		
4. Conservation measures for target stocks		
5. Conservation measures for associated, dependent and same ecosystem species		
6. Compatibility of measures		N/A
7. Protect critical fisheries habitats and vulnerable marine ecosystems		
8. Pollution, waste, discards and bycatch minimisation		
9. Prevention and elimination of overfishing and excess fishing capacity		
10. Application of the precautionary approach		
11. Promotion of the effectiveness of regional and global conservation and management measures		
12. Effective monitoring, control and surveillance		
13. Enforcement of regional conservation and management measures		
14. Area-based management		
15. Protection of endangered and threatened species		

¹ This is a summary table from the analyses performed in Chapters 5 and 6. All references are to be found in these two chapters.

Appendix L (continued)

<i>Legal Requirement</i>	<i>SPRFMO Convention</i>	<i>SPRFMO Implementation</i>
16. Adoption of measures relating to the use of biological resources to avoid or minimise adverse impacts on biodiversity		
17. Significant adverse impacts prevention		
18. Prevention of alien species introduction		
19. Identification and monitoring		
20. Data collection		
21. Data sharing		
22. Education and training		
23. Scientific criteria		
24. Protection of the marine environment		
25. Marine pollution prevention		
26. Monitoring		

**APPENDIX M: COMPARATIVE TABLE SUMMARISING THE INTEGRATION OF GLOBAL LEGAL MEASURES AIMED AT
INSTITUTIONS INTO SPRFMO'S CONVENTION AND THEIR IMPLEMENTATION BY SPRFMO¹**

<i>Legal Requirement</i>	<i>SPRFMO Convention</i>	<i>SPRFMO Implementation</i>
A) Take non-discriminatory conservation measures for high seas living resources		
B) Collect complete and accurate fisheries data, including for stock assessments as well as for the impacts that fishing has on non-target species		
C) Contribute and exchange fisheries data		
D) Promote and conduct scientific research on straddling and migratory fish stocks		
E) Develop appropriate technologies for research on straddling and migratory fish stocks		
F) Agree on standards for collection, reporting, verification and exchange of data		
G) Adopt conservation measures for target fish stocks, taking into account associated species		 / 
H) Allocation of an allowable catch and fishing effort		
I) Development of effective monitoring and surveillance measures		
J) Establishment of boarding and inspection procedures		
K) Measures to reduce the number of seabirds caught as bycatch in the longline fisheries (<i>soft law provision</i>)		
L) Adoption of a regional plan for the conservation of <i>Chondrichthyes</i> (<i>soft law provision</i>)		
M) Adoption of measures to combat IUU fishing, including the development of unified port State measures (<i>soft law provision</i>)		
N) Strengthening of regional fisheries organisations for improved management of fishing capacity (<i>soft law provision</i>)		

¹ This is a summary table from the analyses performed in Chapters 5 and 6. All references are to be found in these two chapters.