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Regional Fisheries Management in Ocean Areas Surrounding Pacific Islands States

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Abstract

The Pacific islands region has developed a number of cooperative instruments to enable and support the conservation and management of tuna stocks as they migrate through the ocean areas surrounding the Pacific island States. These instruments have set global precedents and have significantly boosted the capacity of the region to manage and sustainably develop its tuna fisheries.

The success of this cooperation is vitally important in the Pacific islands region due to the highly migratory nature of the region's tuna fisheries and the region's high dependence upon these fisheries. It is crucial that the fisheries are managed effectively throughout their range, both within and between national exclusive economic zones, and on the high seas. Unrestrained exploitation in a particular exclusive economic zone or on the high seas has the potential to significantly impact on catches elsewhere with potentially devastating consequences for small island States that have few alternate resources.

In this light, the Pacific island States led the negotiation of a regional fisheries management organisation that would ensure the long term conservation and sustainable use of the tuna fisheries throughout their range in the Western and Central Pacific Ocean. The Western and Central Pacific Fisheries Commission was established in 2004 and has since developed a number of conservation measures to support the conservation and management of the region's tuna fisheries.

This paper reviews the performance of the Commission and its conservation measures, and discusses the key challenges to the management of these fisheries as they migrate through the ocean areas surrounding Pacific island States.

Keywords

Pacific island fisheries, governance, regional cooperation

Introduction

In January 2009, the author presented a paper to the International Symposium on Islands and Oceans hosted by the Ocean Policy Research Foundation in Tokyo.¹ The paper focused on national challenges to the management of the Pacific island tuna fisheries, and noted that

¹ Hanich, Q. (2009) Implementing Oceans Governance in the Pacific Islands Region: Regional Solutions to National Challenges. In Proceedings of International Symposium of Islands and Oceans; Terashima, H. Eds.; Ocean Policy Research Foundation: Tokyo, 2009; pp 116-126.

implementation of conservation and management measures requires effective national institutions and governance, and a political will to implement often contentious and difficult conservation measures. The paper suggested further sub-regional cooperation and capacity building to support national implementation.

Following on from that paper, the author briefly explores the regional conservation and management framework for the Pacific island tuna fisheries, focusing on the Western and Central Pacific Fisheries Commission (WCPFC). Regional co-operation is critically important in the Pacific islands region due to the migratory nature of the region's tuna fisheries and the limited capacity of most Pacific island States. In response, the region has cooperated to establish global precedents in fisheries management and has significantly boosted their capacity to manage regional tuna fisheries and conserve the critical tuna stocks.

In recent years, the problems of overfishing and overcapacity (i.e too many fishing boats) have increased and now threaten the long term sustainability of some of the region's key fish stocks. The WCPFC Scientific Committee has repeatedly expressed concerns regarding fishing levels since its inaugural meeting in 2005 and each year recommends increasingly tougher reductions in fishing mortality.² Furthermore, economic studies have shown that fishing effort is significantly above optimal levels, thereby reducing the profitability of the fishery and undermining opportunities for Pacific island States to develop fishing and related industries.

Resolving these management challenges is the key oceans governance challenge for the Pacific islands region. The Western and Central Pacific Ocean (WCPO) tuna fisheries are the only significant resource for many Pacific island States and have long been viewed as the primary development opportunity for many of the region's developing island states. This paper briefly backgrounds the Pacific islands region and its tuna fisheries, briefly introduces the key regional fisheries instruments, and then focuses discussion on the development and operation of the WCPFC.

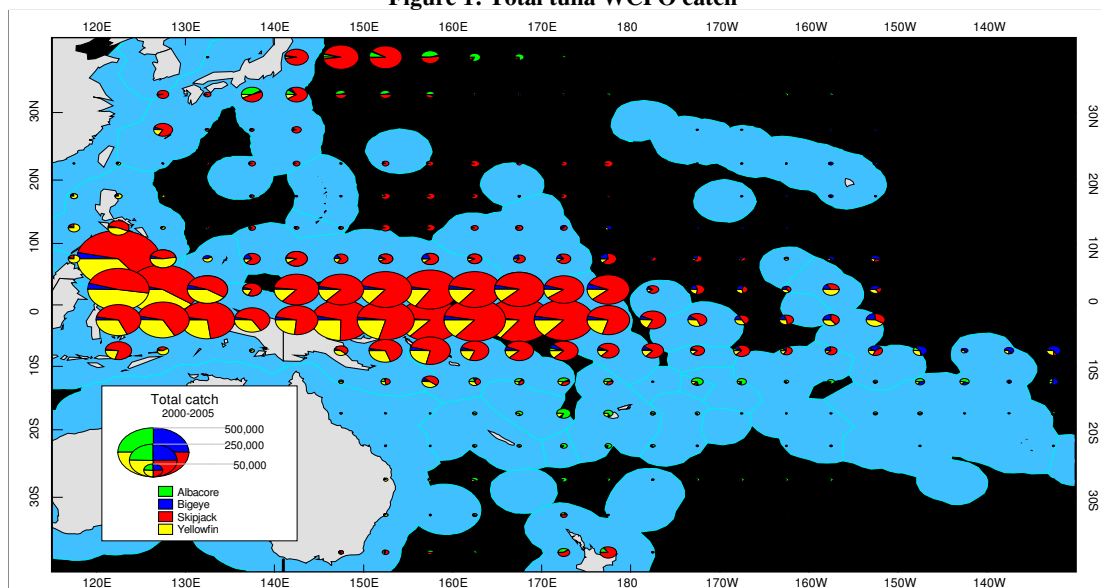
Pacific Islands Tuna Fisheries

The four key tuna species of interest (albacore, skipjack, yellowfin and bigeye) migrate across the EEZs and high seas pockets of the WCPO. Unlike Atlantic, Indian and Eastern Pacific tuna fisheries, the majority of fishing effort in the WCPO occurs within the EEZs of the Pacific island States, Indonesia and the Philippines. Approximately 57% of all WCPO catches for the four key tuna species are taken from the Pacific island EEZs,³ and an additional 15-25% from the Indonesian and Philippines EEZs.

² WCPFC Scientific Committee (2005). The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. Scientific Committee. Fourth Regular Session, 8-19 August 2008, Noumea, New Caledonia.: WCPFC Scientific Committee (2006). The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. Scientific Committee. Fourth Regular Session, 7-18 August 2008, Manila, Philippines: WCPFC Scientific Committee (2007). The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. Scientific Committee. Fourth Regular Session, 13-24 August 2008, Honolulu, United States of America: WCPFC Scientific Committee (2008). The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. Scientific Committee. Fourth Regular Session, 11-22 August 2008, Port Moresby, Papua New Guinea. WCPFC Scientific Committee (2009). The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. Scientific Committee. Fifth Regular Session, 10-21 August 2009, Port Vila, Vanuatu.

³ For the purposes of this estimate, this includes the EEZs of: (FFA members) Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu (and non-FFA members) American Samoa, French Polynesia, New Caledonia, Pitcairn Island, and the French territory of Wallis and Futuna.

Figure 1: Total tuna WCPO catch



Source: Oceanic Fisheries Programme, Secretariat to the Pacific Community, Noumea. 2009.

The value of the WCPO tuna fisheries⁴ have increased 60% since 2005 – from approximately 271.5 billion yen in 2005 to approximately 435 billion yen in 2008. WCPO tuna catches only increased by 13% over this period, largely due to reported rises in catches from Indonesia, Philippines and Papua New Guinea.

The key drivers behind the dramatic increase in value were the significant increases in the composite prices for skipjack (86% increase), yellowfin (28% increase) and bigeye (27% increase) over the period 2007-2008. This resulted in the landed value of WCPO skipjack increasing by 54% in 2007 and another 24% in 2008.

The total tuna catch for 2008 was estimated to be approximately 2,426,195 mt, a new record highest annual catch (but only by 0.25%). This catch was approximately 81% of the total Pacific ocean catch (estimated to be approximately 3,009,477 mt) and 56% of the global tuna catch (estimated to be approximately 4.3 million mt). The following two tables describe the catch by species and catch by fleet.

Table 1: Catch by species

Species	Catch in mt	Percentage of catch	Value in JPY (to nearest billion)
Skipjack	1,634,617	67%	246 billion
Yellowfin	539,481	22%	100 billion
Bigeye	157,054	6%	64 billion
Albacore	95,043	4%	24 billion

⁴ All values converted from US\$ and AU\$ to JPY on 1 March 2010 at 89JPY to US\$1 and 80JPY to 1AU\$. All subsequent data on catch and value data sourced from the following papers: WCPFC Scientific Committee (2005): WCPFC Scientific Committee (2006): WCPFC Scientific Committee (2007): WCPFC Scientific Committee (2008): WCPFC Scientific Committee (2009): Gillett, R. 2009. The Contribution of Fisheries to the Economies of Pacific Island Countries and Territories. Asian Development Bank, AusAID, World Bank, SPC and FFA.

Table 2: Catch by fleet

Fleet	Catch in mt	Percentage of WCPO catch	Species composition	Value in JPY (to nearest billion)
Purse seine	1,783,669	74%	Skipjack = 70 to 85% Yellowfin = 15 to 30% Bigeye = small amounts	278 billion
Longline	231,003	10%	Skipjack = 2% Yellowfin = 30% Bigeye = 38% Albacore = 30%	103 billion
Pole and line	170,805	7%	Skipjack = 70 to 85% Yellowfin = 5 to 10% Bigeye = 1 to 6% Albacore = 8 to 20%	32 billion
Other (troll & artisanal gears mostly in Indo/Phil)	n/a	10%	n/a	n/a

These highly valuable fisheries represent the primary economic opportunity for many Pacific island States. Pacific island states depend upon these stocks: as a traditional and important source of food; as a critical form of revenue (approximately 7 billion yen in access fees⁵); income (expenditure by locally based vessels is estimated to be approximately 11.5 billion yen);⁶ and employment (estimated at approximately 12,286 for employment on tuna vessels and in onshore tuna facilities).⁷

Access fees to Pacific island States from foreign fishing vessels deliver much-needed financial contributions to governments. In 2007, the total of access fees paid to all Pacific island States was estimated to be 7 billion yen. For comparison purposes, it is interesting to note that access fee revenue to Pacific island States only increased by approximately 25% from 1999 to 2007, despite a 55% increase in the value of the WCPO tuna fisheries during that time, from approximately 223 billion yen in 1999 to 347 billion in 2007.

Overfishing

Unfortunately, WCPO tuna fisheries are increasingly under pressure to reduce overfishing in key fisheries. Furthermore, economists have suggested that fishing capacity in some WCPO tuna fisheries is significantly above optimal levels, thereby reducing the profitability of these fisheries.⁸ The key concerns relate to the impacts of various fleets on bigeye and yellowfin.

In 2009, the WCPFC Scientific Committee reported that overfishing of bigeye and possibly yellowfin was occurring and recommended a 34% to 50% reduction in fishing mortality for bigeye, and no increase in fishing mortality for yellowfin. Key threats to bigeye include high catches of bigeye by longline fleets, high mortality of juvenile bigeye by purse seine fleets using fish aggregating devices, and high mortality of juvenile by various gears in Indonesia and Philippines.⁹

⁵ Gillett, R. (2009)

⁶ Gillett, Robert, McCoy, Mike, Rodwell, Len and Tamate, Josie (2001). *Tuna. A Key Economic Resource in the Pacific Island Countries*. A Report Prepared for the Asian Development Bank and the Forum Fisheries Agency.

⁷ Gillett, R. (2009)

⁸ Bertignac, M., Campbell, H., Hampton, J. and Hand, A. (2001). 'Maximising Resource Rent from the Western and Central Pacific Tuna Fisheries' in *Marine Resource Economics*, Vol. 15, 2001, pp. 151-

⁹ WCPFC Scientific Committee (2009).

Regional Cooperation

It is critically important that the region's institutions are able to address overfishing challenges and effectively manage the region's tuna fisheries given the high dependence by Pacific island States upon fisheries resources. Any serious threat to the sustainability of the tuna resource can be viewed as a threat to the region's economic viability and food security.

The Pacific islands States depend upon regional cooperation and the effective operation of regional institutions and a number of key arrangements to enable and support effective fisheries management and development. Agencies such as the Pacific Islands Forum Fisheries Agency (FFA) and the Secretariat of the Pacific Community (SPC) provide high quality technical advice and support while the Harmonised Minimum Terms and Conditions of Access for Foreign Fishing Vessels (HMTCs), the Vessel Day Scheme (VDS) and the Niue Treaty enable collective management, enforcement and exploitation of the Pacific island region's tuna fisheries. Across, and beyond the Pacific islands region, the WCPFC is responsible for conserving and managing tuna fisheries throughout the WCPO and includes all relevant coastal States and distant water fishing nations (DWFN) within its membership.

The following sections describe the various developments in regional cooperation, from the formation of SPC through to the decisions of the WCPFC.

Secretariat of the Pacific Community – Oceanic Fisheries Programme (1947)

The Secretariat of the Pacific Community (SPC), formerly the South Pacific Community, was the first of the regional fora to be established and was founded in 1947 by the colonial powers of the time: Australia, New Zealand, Netherlands, France, United Kingdom (UK) and the United States of America (USA). The membership evolved through the period of de-colonisation and now includes the independent Pacific island States,¹⁰ the Pacific island territories¹¹ and Australia, New Zealand, France and the USA. The organisation is headquartered in Noumea, with regional offices throughout the Pacific islands region.

The Oceanic Fisheries Programme (OFP) is one of a number of SPC programmes that aim to build capacity within the Pacific islands region and support members with technical assistance. The OFP provides fisheries science services to its members (primarily relating to tuna) and is also a contracted science provider for the WCPFC Scientific Committee.

Pacific Islands Forum Fisheries Agency (1979)

The Pacific Islands Forum Fisheries Agency (FFA) has played a central role in fostering regional cooperation amongst its membership in their management and development of the region's tuna fisheries.

The FFA was founded in 1979 by the independent Pacific island States, Australia and New Zealand and sits within the Pacific Islands Forum umbrella. In 1979, the independent members of the Pacific Islands Forum (then named the South Pacific Forum) foresaw the challenges involved in managing and developing their newly proclaimed EEZs and recognised that individually they did not have the capacity to adequately respond to these challenges. With remarkable vision they combined their resources and established the FFA to promote intra-regional cooperation and harmonisation of fisheries management policies. The mission of the FFA is to support and enable Pacific island States to achieve sustainable fisheries and maximise their social and economic benefits in harmony with the broader

¹⁰ Cook Islands, Federated States of Micronesia (FSM), Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea (PNG), Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu.

¹¹ American Samoa, French Polynesia, Guam, New Caledonia, Northern Mariana Islands, Pitcairn Islands, Tokelau, Wallis and Futuna.

environment. The FFA itself does not manage the tuna fisheries and has no such mandate, nor any authority to enforce decisions of its governing council.

The FFA supports the interests of the Pacific island States through facilitating regional cooperation in their favour and providing technical and policy advice. Australia, New Zealand, Japan and the European Community (EC) all contribute significant funds to FFA programs.

FFA works closely with the SPC's OFP to facilitate regional cooperation and support management and development of the region's tuna fisheries, at national, sub-regional and regional levels. FFA has been most successful in its work to support sub-regional and regional cooperation relating to access by foreign fishing fleets into EEZs. In this area, the FFA has facilitated the development of a number of key regional arrangements. The most significant of these include the following.

Nauru Agreement (1982)

The key framework for subsequent successes in Pacific island fisheries cooperation was established in 1982 by a sub-set of the FFA membership who have since become the driving force within the FFA, and consequently have benefited most from regional cooperation. The 1982 Nauru Agreement Concerning Cooperation in the Management of Fisheries of Common Interest (Nauru Agreement)¹² was negotiated by the equatorial Pacific island States whose waters include the most significant fisheries.¹³

The Parties to the Nauru Agreement (PNA) recognised that they were in a weak position when negotiating access arrangements individually with DWFNs, particularly when DWFNs played each State against each other in negotiations over access fees and conditions.¹⁴ In response, the PNA negotiated the Nauru Agreement in order to coordinate and harmonise their fisheries management and access conditions, thereby placing themselves in a stronger strategic position when negotiating with DWFNs. The Nauru Agreement promoted the following objectives:

- coordinate and harmonise management of common fish stocks between PNA, without derogating any of their sovereign rights (Article 1);
- priority consideration for licensing PNA vessels over foreign vessels (Article 2a);
- establish minimum terms and conditions for foreign vessel access (Article 2b);
- cooperate and coordinate fisheries monitoring, control and surveillance (Articles 6 and 7).

The Nauru Agreement became the cornerstone for regional cooperation and enabled subsequent cooperative agreements to develop increasingly harmonised approaches to common fisheries that would extend beyond the limited membership of the PNA. Throughout 1982 and 1983, work began on negotiating the first of three implementing arrangements that would operationalise the treaty's objectives.

¹² Nauru Agreement. (1982). Full title: The 1982 Nauru Agreement Concerning Cooperation in the Management of Fisheries of Common Interest. Accessed online 10 March 2009 at <http://www.ffa.int/node/93#attachments>

¹³ Papua New Guinea, Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Palau, Solomon Islands were all original signatories. Tuvalu subsequently became a party in 1991.

¹⁴ Lodge, M. (2002). Minimum Terms and Conditions of Access: responsible Fisheries Management Measures in the South Pacific Region. *Marine Policy*. July 1992. pp277-305.

First Implementing Arrangement to the Nauru Agreement (1983)

The First Implementing Arrangement to the Nauru Agreement¹⁵ was adopted in September 1983 and established agreed Harmonised Minimum Terms and Conditions for foreign fishing vessels (HMTCs). While these conditions were originally intended to only apply to PNA, the broader FFA endorsed a draft of the conditions during their negotiations and began a parallel initiative that quickly extended the application of the HMTCs to the entire FFA membership. The HMTCs harmonised licensing procedures and catch reporting and established a regional register of fishing vessels. Each Pacific island State is responsible for the implementation of these conditions at the national level.¹⁶

USA Multi-Lateral Treaty (1988)

In 1987, the FFA negotiated a multi-lateral fisheries treaty between its members and the USA that recognised coastal State rights over migratory fisheries and significantly increased benefits to Pacific islands States. The Treaty on Fisheries Between the Governments of Certain Pacific Island States and the Government of the United States of America (USMLT)¹⁷ commenced in 1988 and has since been renewed three times.

Wellington Convention (1989)

In 1989, various FFA members raised concerns regarding the environmental impacts of large-scale pelagic driftnet fishing on the high seas. In July 1989, the Pacific Islands Forum adopted the Tarawa Declaration and called on Japan and Taiwan to immediately abandon their driftnet operations in the South Pacific. This was quickly followed by the 1989 Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific (Wellington Convention).¹⁸ The Convention banned the use of driftnets in the South Pacific and paved the way for a global moratorium on driftnet fishing on the high seas. Following the Wellington Convention, the UNGA subsequently adopted a series of resolutions to address driftnet fishing, eventually calling on all members of the international community to implement a global moratorium on all large-scale pelagic driftnet fishing on the high seas of the world's oceans and seas by December 1992. These FFA led initiatives largely resolved the problems of driftnet fishing in the south and equatorial Pacific Ocean, although some vessels continue to engage in large-scale high seas driftnet fishing in the North Pacific Ocean.

Second Implementing Arrangement to the Nauru Agreement (1991)

In April 1990, the PNA developed a second implementing arrangement following a significant increase in the number of vessels fishing in PNA waters. The Second Implementing Arrangement to the Nauru Agreement¹⁹ came into affect in January 1991 and expanded the HMTCs to also incorporate observer requirements, prohibit transshipments at

¹⁵ IIA. (1983). Full title: An Arrangement Implementing the Nauru Agreement Setting Forth Minimum Terms and Conditions of Access to the Fisheries Zones of the Parties. Copy available in Appendix 2 of: Lodge. (1992). Minimum Terms and Conditions of Access: Responsible Fisheries Management Measures in the South Pacific Region. In Marine Policy. July 1992. pp 277-305.

¹⁶ Aqorau, Transform. (2002). Cooperative Management of Shared Fish Stocks in the South Pacific. Paper Presented at the Norway-FAO Expert Consultation on the Management of Shared Fish Stocks - Bergen, Norway, 7-10 October 2002

¹⁷ USMLT. (1988). Full title: Treaty on Fisheries Between the Governments of Certain Pacific Island States and the Government of the United States of America. Opened for signature April 2. 1987. Reprinted in 26. International Legal Materials. 1048. 1987.

¹⁸ 1989 Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific (Wellington Convention). Available at http://untreaty.un.org/English/UNEP/driftnets_english.pdf Accessed online 2 March 2010.

¹⁹ 2IA. (1991). Full title: A Second Arrangement Implementing the Nauru Agreement Setting Forth Additional Terms and Conditions of Access to the Fisheries Zones of the Parties. Copy available in Appendix 2 of: Lodge. (1992). Minimum Terms and Conditions of Access: Responsible Fisheries Management Measures in the South Pacific Region. In Marine Policy. July 1992. pp 277-305.

sea, expand monitoring and surveillance, and introduce an annual registration for the regional vessel register. Simultaneously with the PNA, the FFA endorsed the expanded HMTCs and agreed that the conditions should be implemented throughout all FFA member's EEZs.

Subsequently, the FFA expanded the HMTCs for all FFA members to also include a centralised satellite based vessel monitoring system (VMS) that is operated by the FFA secretariat and forwards vessel positions to national officers to monitor.

Niue Treaty (1993)

In May 1993, the Niue Treaty on Co-operation in Fisheries Surveillance and Law Enforcement in the South Pacific Region²⁰ (Niue Treaty) entered into force and provided a framework for FFA member States to cooperate in surveillance and enforcement and share surveillance assets. The treaty is essentially an umbrella arrangement that supports the development of subsidiary agreements to implement surveillance and enforcement cooperation at the bi-lateral or sub-regional level.

There are now four subsidiary agreements in effect,²¹ a further six awaiting government endorsement, and an increasing number of regular multi-lateral fisheries surveillance operations that include Niue Treaty members and non-members providing support (such as aerial surveillance).²² FFA members are now considering the development of a multilateral subsidiary agreement and invoking Article XII(5) of the Niue Treaty to enable US and France to participate.

The FSM arrangement (1995)

Throughout the 1980s and 1990s, Pacific island States increasingly aspired to replace DWFN fleets with locally based domestic fleets. In response to these aspirations, PNA members established the FSM Arrangement for Regional Fisheries Access²³ (FSM Arrangement) in 1995. The Arrangement further elaborated the Nauru Agreement's objectives of supporting local development and promoting PNA vessels over DWFN vessels. In this regard, the FSM Arrangement provided for lower cost licenses and access to the waters of all PNA States for domestic and locally based vessels that met specific criteria.

Palau Arrangement (1995) and Vessel Day Scheme (2007)

During the late 1980s and early 1990s, the PNA became increasingly concerned at the rapid expansion of the purse seine fishery and its potential impact on the long term sustainability of the WCPO tuna fisheries. In light of these concerns, PNA initiated discussions in 1990 to develop arrangements that might limit purse seine numbers within the PNA sub-region. During these discussions, PNA agreed to introduce interim limits on how many purse seine vessels they would license to fish in their collective EEZs while negotiating a more comprehensive arrangement to limit purse seine fishing across all PNA EEZs. In 1993, the PNA concluded negotiations and signed the legally binding Palau Arrangement for the Management of the Purse Seine Fishery in the Western and Central Pacific²⁴ (Palau Arrangement) which subsequently entered into force in 1995. Prior to the establishment of the

²⁰ Niue Treaty. (1993). The Niue Treaty on Co-operation in Fisheries Surveillance and Law Enforcement in the South Pacific Region. Reprinted in Commonwealth Law Bulletin. 702. 1993. 32. International Legal Materials.

²¹ Federated States of Micronesia, Palau and Marshall Islands: Australia and Papua New Guinea: Tonga and Tuvalu: Samoa and Cook Islands.

²² For example: Operations Bigeye and Island Chief in Micronesia: Operations Kurukuru and Tui Moana in Polynesia: and Operation Rai Balang between Palau and the Federated States of Micronesia.

²³ FSM Arrangement. (1995). FSM Arrangement for Regional Fisheries Access. Accessed online 11 March 2009. <http://www.ffa.int/node/30#attachments>

²⁴ Palau Arrangement. (1995). The Palau Arrangement for the Management of the Purse Seine Fishery in the Western and Central Pacific. Accessed online 10 March 2009 at <http://www.ffa.int/node/91#attachments>

WCPFC, the Palau Arrangement was the only mechanism available to control purse seine fishing effort in the WCPO.

The Palau Arrangement aims to protect tuna stocks from overfishing and improve the economic benefits to PNA from access fees and fisheries development. It primarily does this through limiting the licenses available to fish within the PNA EEZs (therefore limiting catches and hopefully increasing prices) and enabling further cooperation in management of the purse seine fisheries between PNA. Given its exclusive coastal State membership, the scope of the Arrangement was effectively limited to EEZs. However, significantly, the preamble to the arrangement did emphasise the special interest of coastal States in tuna in adjacent high seas areas.

Until 2007, the Palau Arrangement limited licenses through establishing a cap on purse seine vessels. However, while the vessel cap of 205 remained stable, the vessel cap became increasingly seen as a blunt and not particularly effective tool at promoting conservation and development interests. In response, the PNA reviewed the vessel cap and agreed to introduce a limit on the number of purse seine days. Vessel days could be sold in such a way as to maximise economic returns and would introduce greater fleet flexibility and better enable conservation outcomes.

In December 2007, the PNA commenced operation of the Vessel Day Scheme (VDS) which aims to constrain catches to sustainable levels and increase benefits from fishing activities through access fees paid by DWFNs. The VDS replaces the broad purse seine vessel number cap with a set number of days that can be fished in the combined EEZs of the PNA. Vessel days are then allocated to each PNA. A key objective of the VDS is to create competition between DWFN vessels to purchase fishing days at the maximum price. As the VDS has been introduced, allocations have been made for vessels that fish within the FSM Arrangement and the USMLT.

Western and Central Pacific Fisheries Commission (2004)

In 1994, the FFA hosted a multi-lateral high level conference of Pacific island States and DWFN on the future management and conservation of straddling and highly migratory fisheries within the WCPO. This meeting agreed on the need to co-operatively and sustainably manage WCPO tuna resources across their entire range.

This was followed by six further conferences until negotiations concluded in 2000 with the successful adoption of the Western and Central Pacific Fisheries Convention²⁵ (WCPF Convention, 2000) which subsequently entered into force in July 2004. The objective of the WCPF Convention, as described in Article 2, is to ensure the long term conservation and sustainable use of WCPO straddling and highly migratory fish stocks in accordance with the 1982 Convention (LOSC) and the Agreement (UNFSA). The Convention establishes the decision making Western and Central Pacific Fisheries Commission (WCPFC), which meets annually, and a secretariat which is headquartered in the Federated States of Micronesia.

The Pacific island States are a critical membership bloc of the WCPFC and were a key driver behind its development. Other WCPFC members include (amongst others) Indonesia, Philippines and the DWFNs: Japan, Korea, China, Taiwan, USA and the European Community. The WCPF Convention binds these members to implement its provisions and WCPFC conservation and management measures. Since its establishment in 2004, the WCPFC has agreed on a number of conservation measures that impose specific obligations on all members.

²⁵ WCPF Convention. (2000). Full title: is Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. Signed September 2000. Honolulu, USA. Entered into force, 2004. Accessed online 10 July 2006 at <http://www.wcpfc.int/>

The WCPFC closely follows the framework established by the United Nations Fish Stocks Agreement²⁶ and emphasises a precautionary and ecosystem based approach to fisheries management. The WCPF Convention applies to all waters of the WCPO, including both high seas and EEZs. However, the WCPF Convention clearly states in Article 4 that nothing in the Convention shall prejudice the rights, jurisdiction and duties of States under the LOSC and UNFSA, and that the WCPFC shall be interpreted and applied in the context of, and in a manner consistent with the LOSC and UNFSA. This is a critical point for Pacific island States given their heavy dependence upon the fishery and aspirations for development, and their sovereign rights over much of the fishery within their EEZs.

Article 7 further recognises the special needs of small island developing States and requires members of the Commission to give due consideration to the respective capacities of developing coastal States, in particular small island developing States, to apply WCPFC provisions within areas under national jurisdiction and their need for assistance as provided for in the Convention.

Since its establishment in 2004, the WCPFC has adopted a number of binding conservation and management measures. Members and co-operating non-members are obliged to implement these members in accordance with their commitments to the WCPFC. Some of the key issues addressed by conservation and management measures include:²⁷

- Record of fishing vessels and authorisation to fish. Only vessels on the WCPFC record that are authorised appropriately are allowed to fish in the WCPO tuna fisheries;
- Establishment of procedures, obligations and responsibilities for cooperating non-members who wish to participate in the WCPO tuna fisheries;
- Transshipment regulations prohibit transshipments by purse seine vessels and restrict all other at-sea transshipments to exceptional circumstances. In port transshipments must abide by detailed monitoring and reporting requirements;
- Prohibition on the use of large scale driftnets;
- Establishment of a Regional Observer Scheme. Fishing vessels must carry an observer from an accredited programme in accordance with the measure's requirements;
- Establishment of a satellite based centralised vessel monitoring system. All tuna fishing vessels must report to the WCPFC VMS when fishing for tuna on the high seas within the Convention area. ensure that all vessels registered to Kiribati and authorised to fish on the high seas are required to report to the WCPFC VMS in accordance with specific requirements;
- Establishment of a list of vessels presumed to have carried out illegal, unreported and unregulated (IUU) fishing activities in the WCPO. Provides for vessels to listed if found to be involved in IUU fishing. IUU listed vessels are prohibited from further fishing or any fishing related activity until the violation has been satisfactorily addressed;
- Establishment of procedures for boarding and inspections of fishing vessels on the high seas by foreign government patrol vessels;
- Conservation and management to mitigate the impact Seabird bycatch;
- Conservation and management to mitigate the impact of Sea Turtle bycatch;
- Conservation and management for Striped Marlin;
- Conservation and management for Swordfish;

²⁶ UNFSA. (1995). Full title is 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 Stocks and Highly Migratory Fish Stocks. Signed December 1995. New York, USA. Entered into force 2001. Accessed online April 2005 at http://www.un.org/Depts/los/convention_agreements/convention_overview_fish_stocks.htm

²⁷ All WCPFC Conservation and Management Measures can be downloaded from: www.wcpfc.int

- Conservation and management for Sharks;
- Conservation and management for Pacific Bluefin Tuna;
- Conservation and management for North Pacific Albacore;
- Conservation and management for South Pacific Albacore;
- Conservation and management for Bigeye and Yellowfin tuna.

The key conservation and management issue that is most seriously challenging the WCPFC is the high impact of overfishing on bigeye tuna stocks. The WCPFC has adopted three conservation and management measures (2005, 2006 and 2008) to halt overfishing, but each has failed to adequately reduce mortality of bigeye and limit fishing impacts to sustainable levels. The 2008 conservation and management measure (CMM 2008-01)²⁸ replaced the 2005 and 2006 measures and was intended to ensure, through compatible measures for the high seas and EEZs, that bigeye and yellowfin are maintained at levels capable of producing maximum sustainably yield (MSY). The measure described a packed of measures for high seas and EEZs that were intended to reduce mortality of bigeye by 30% from 2001-2004 average levels. The measure included the following provisions:

- Phased 30% reduction of longline bigeye catch of 2001-2004 levels by 1/1/2012;
- Limits on purse seine effort in EEZs and high seas to 2001-2004 levels;
- Closure of two high seas pockets;
- Annual 3 month prohibitions on purse seine sets on FADs;
- Encouragement for archipelagic States to ensure measure is not undermined through transfer of effort into archipelagic waters and territorial seas;
- Limits on other commercial fisheries catching bigeye to 2001-2004 levels.

However, in 2009 the SPC Oceanic Fisheries Programme (WCPFC science provider) presented two papers²⁹ to the WCPFC which found that the 2008 measure was highly unlikely to achieve its objective of a 30% reduction in bigeye fishing mortality or maintain bigeye stocks at levels capable of producing MSY over long term. This was due to the limited effectiveness of the FAD prohibition and the high seas pocket closure, increases in purse seine effort allowed under various exemptions (resulting in 30% increase over 2001-2004 levels), increases in purse seine catchability, and the lack of application to archipelagic waters.³⁰

SPC's Oceanic Fisheries Programme provided modelling results on the conservation actions required to meet the WCPFC MSY commitments for bigeye. In order to halt overfishing for bigeye and maintain the stock at levels capable of producing, the modelling suggested that the WCPFC would have to reduce the use of fish aggregating devices (FADs) by purse seiners by 80%, reduce longline catch of bigeye by 50% and reduce fishing effort for bigeye in Indonesia and the Philippines.³¹

In response, the 2009 meeting of the WCPFC discussed possible amendments to the measure to strengthen its effectiveness. Some delegations pushed for additional measures (i.e additional high seas closures), others pushed for weakening or postponing measures (i.e high seas closure) and various delegations pushed for replacement of some measures (i.e FAD closures) with other measures (i.e seasonal closures on all purse seine fishing). Ultimately, WCPFC 2009 was unable to reach any agreement and CMM2008-01 continued unamended.

²⁸ WCPFC CCM 2008-01 (2008). Conservation and Management Measure for Bigeye and Yellowfin Tuna in the Western and Central Pacific Ocean. Accessed online 4 April 2009 at www.wcpfc.int

²⁹ WCPFC 6-2009/IP17 (2009) Assessment of the Potential Implications of Application of CMM 2008-01 for Bigeye and Yellowfin Tuna. Paper prepared by SPC-OFP. WCPFC 6-2009/IP18 (2009) Further Consideration of CMM 2008-01 With Respect to Bigeye Tuna. Paper prepared by SPC-OFP.

³⁰ WCPFC Summary Report (2009).

³¹ OFP-SPC (2009). Powerpoint Presentation to WCPFC. CMM 2008-01 Evaluation.

Conclusion

The past 30 years has demonstrated a remarkable level of cooperation in the Pacific islands region that has substantially increased the capacity of the region to manage their fisheries and successfully negotiate with far more powerful DWFNs – most particularly the USA and Japan.

However, the capability and effectiveness of the FFA, PNA and the WCPFC will be heavily tested over the coming years as these bodies come under increasing pressure to significantly reduce catches and vessel numbers in response to over-fishing and over-capacity concerns.

In order to achieve conservation and development objectives, the region will need to significantly strengthen WCPFC conservation measures and develop strong monitoring, control and surveillance tools to ensure compliance. To achieve these goals, the WCPFC will have to develop creative strategies that recognise the sovereignty of coastal States over their archipelagic waters and allow for the negotiation of some form of compensatory arrangement that motivates these States to reduce fishing effort within their waters. Without such compensatory arrangement, it is hard to see why a coastal State would implement costly fisheries reductions on its own fisheries when it is under no specific legal obligation to do so. Particularly given that it will receive little or no benefit as most benefits will migrate out of their waters and into neighbouring EEZs and high seas.

Even if these issues were resolved and the WCPFC successfully came to consensus on a strong package of conservation measures, implementation is a critical challenge.

Pacific island States, Indonesia and the Philippines all suffer from significant institutional capacity limitation that undermine their ability to implement fisheries management within waters under their national jurisdiction. As discussed in the author's 2009 paper, a concerted capacity building strategy is required to support national implementation.³²

Furthermore, implementation by DWFN has also historically been weak and high levels of illegal, unreported and unregulated (IUU) fishing are continuing to present significant challenges. In the period 2000-2003, the catch taken by IUU fishers was estimated to be valued at between 63 billion and 139 billion yen from the WCPO tuna fisheries.³³

For Pacific island States, these problems are particularly challenging in regard to ensuring compliance by DWFN vessels with fisheries regulations and licensing conditions, especially in the vitally important area of monitoring and reporting. Unfortunately, the history of DWFN vessel compliance with reporting obligations has been poor with high levels of misreporting. In 2009, the FFA MCS Strategy study – 'Safeguarding the Stocks' noted that the majority of IUU fishing in the Pacific islands region was associated with licensed vessels and identified underreporting and misreporting of catch as a key compliance concern.³⁴ The study recommended that the improvement of catch monitoring was critical to the achievement of FFA regional fisheries goals.

Misreporting is a form of fraud where licensed vessels intentionally understate catches for financial gain (similar to tax evasion). In the short term, misreporting effectively steals benefits from Pacific island States and undermines their ability to assess the value and status

³² Hanich, Q. (2009).

³³ Agnew DJ, Pearce J, Pramod G, Peatman T, Watson R, et al. (2009) Estimating the Worldwide Extent of Illegal Fishing. PLoS ONE 4(2): e4570. doi:10.1371/journal.pone.0004570

³⁴ Soutar, D. Hanich, Q., Korsten, M., Jones, T., & McCaffrie, J. (2009) Safeguarding the Stocks: A report on analytical projects to support the development of a regional MCS strategy for Pacific oceanic fisheries; Pacific Islands Forum Fisheries Agency: Honiara, 2009.

of their fisheries. Even where fees are paid in lump sums per vessel, or per day, misreporting steadily erodes the perceived value of that vessel or day and undermines future negotiations over fee structures. In the medium to long term, misreporting undermines the quality of scientific advice and exacerbates the level of uncertainty that is inherent in fisheries management.

Given the high dependence of the region on fisheries resources for revenue and food security, it is vital that these regional collective institutions achieve their conservation, management and development goals and enable the Pacific island States to implement the institutional and governance programs necessary to conserve and develop the WCPO tuna fisheries.