Water law and the nature of customary water rights in Papua New Guinea

Lawrence Kuna Kalinoe
University of Wollongong


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Water Law And the Nature of Customary Water Rights in Papua New Guinea

LAWRENCE KUNA KALINOE

Faculty of Law
University of Wollongong
February 1998

A thesis submitted in fulfilment for the requirements of the degree of Doctor of Philosophy at the University of Wollongong.
Certification

I certify that the substance of this thesis has not been submitted for any degree and is not being submitted currently for any other degree.

I certify that any help received in preparing this thesis, and all sources used have been acknowledged.

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Lawrence Kuna Kalinoe
Abstract

Majority of the indigenous people in Papua New Guinea (about 87 per cent) live on their customary land by engaging in fishing, hunting, gathering and subsistence agriculture for their daily sustenance. Water is obtained directly from rivers, lakes, and other watercourses.

At present, Papua New Guinea is undergoing rapid economic growth in forestry, agroforestry, mining, and petroleum development activities. Most (if not all) of these natural resources development activities are conducted on customary land and in and around the environment in which the majority of the indigenous peoples live and on which they rely for their subsistence way of life. Many of these natural resource development projects have caused stress on the water resources: indeed in some instances, the projects have so impaired the quality of the water and water resources as to render such resources unsuitable for human consumption, and thereby adversely affecting the indigenous peoples’ subsistence way of life.

This has in turn prompted many indigenous peoples to aggressively assert their customary rights as customary right holders to the land and water resources. The now abandoned law suit by the customary water rights holders of the OK Tedi river discussed in Chapter 13 of this thesis stands as a pre-eminent example of this response.

The law in Papua New Guinea allows for the customs of the indigenous peoples of the country to be pleaded and applied as law. In keeping with this, statute law on water resources management does not extinguish customary water use rights but allows for co-existence with statute based water use rights. Whilst on the one hand statute based water use rights are elaborately specified, on the other hand, customary water rights are left unspecified and hence remain vague. The challenge therefore is to ascertain the nature of customary water rights. That challenge is the focus of this thesis.
To properly meet that challenge, it is imperative that we understand the customary regime by studying the customs, practices and perceptions of the owners of customary land adjacent to rivers, lakes and other watercourses about their rights over water and water resources (as holders of customary water rights).

This thesis attempts to do that by first exploring and presenting, by way of introduction in Part I, the general and basic water law principles pertinent to indigenous water use rights at common law and secondly in Part II, by scrutinising the statutory water law regime in Papua New Guinea to ascertain the possible impacts on the exercise of customary water rights. Thirdly and more importantly, Part III presents and discusses empirical field work data on the customs, practices and perceptions of customary water rights holders. Finally Part IV, attempts to ascertain the nature in law of customary water rights and the modes of establishing and enforcing customary water right at Papua New Guinea law.

In the final analysis, it is asserted in this thesis that customary water rights as they currently exist in Papua New Guinea are rights in the nature of property rights and therefore capable of enforcement by the holders of those rights in the event of breach. Customary water rights as they occur in Papua New Guinea are not mere water use rights but rather encompass and include not only the right to the take and use of water per se, but also the access rights to all of the other water resources, both living and non living which occur in the rivers, lakes and other watercourses which the indigenous people have rights over.
Acknowledgements

The gestation period for this work has been around three years. Over this period many people have offered their assistance, either in Australia or Papua New Guinea. Particularly in Papua New Guinea, so many people came forward and offered assistance that I am unable to recall all their names and record their specific assistance. To those people, I offer my sincere apologies and I hope that you will somehow, some day get to see your contribution.

First and foremost I record my indebtedness to those many people in Papua New Guinea; particularly in the Upper Sepik river area, Ramu river area, Bulolo river area, Lake Kutubu area, Lake Kopiago area, Vailala river area, Baimuru/Kikori, Fly river area and the Angabunga river/Aroa river/Vanapa river areas, where field work was conducted. These countless good people freely and willingly shared with me their time and knowledge some of whom will find their names in the discussions in Part III of this thesis. Particularly in the Upper Sepik river and Chambri Lakes leg of the field work, I make specific mention of Mr Remence Joseph who was my motorised canoe driver for the entire eight weeks period. In this same leg of the field work, I also acknowledge the assistance of my field assistants, Mr Noah Kalinoe and Mr Wasawul Yalamai who all endured with me the long “back-breaking” motorised canoe trips up and down the Upper Sepik. In the Ramu river leg of the field work I acknowledge the assistance of my field assistant and host, Mr Carlton Yuami and his brother, Dexter. For the field work in Valilala/Ihu, I mention the assistance of my field assistant Mr Daniel Kivoyia and host, Mr Saki Maeoka. For the fieldwork in Baimuru/Kikori, I record my sincere gratitude to my field assistant and host Mr Evui Po’o and his family.

For the field work in Lake Kutubu, Lake Kopiago, Lake Murray, and Middle and Lower Fly river areas, I employed field research assistants. They were all students at the
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Ms Jossie Moir-Bussy in Canberra and Mrs Lois Baduk of the Law Faculty, UPNG typed the thesis. Mrs Baduk however is responsible for the layout and the final outcome. To the both of them, I say “Thank you very much indeed.”

I also thank Mr Jack Rannells and wife Ms Eve Rannells for their respective assistance: Jack for proof reading and Eve for her continuous encouragement and support.

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Furthermore, I thank my supervisor Professor Martin Tsamenyi for first having faith in me; and then being very supportive by way of his counsel and the many words and gestures of encouragements. I further extent my gratitude to all the staff at the Faculty of Law, University of Wollongong for their hospitality which translated into an excellent study environment to work from. Maria Agnew deserves special mention in this regard.

I received financial assistance to conduct field work from Highlands Gold Ltd and the University Research and Publications Committee of the University of Papua New Guinea. To both of these institutions, I am very grateful. In fact without their assistance, I would not have been able to stage the field work.

Above all, I give thanks to the All Mighty God for all the providence, particularly His mercy, forgiveness and protection over my life and my households in all these years.

Lawrence Kuna Kalinoe
Wollongong, February 1998
### Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>Appeal Cases</td>
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<td>ACF</td>
<td>Australian Conservation Foundation</td>
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<td>AIDAB</td>
<td>Australian International Development Assistance Bureau</td>
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<td>All E.R.</td>
<td>All England Reports</td>
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<td>ANGAU</td>
<td>Australian New Guinea Administration Unit</td>
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<tr>
<td>BHP</td>
<td>Broken Hill Propriety Ltd</td>
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<tr>
<td>C.A.</td>
<td>Court of Appeal</td>
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<td>Ch. D</td>
<td>Chancery Division</td>
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<td>Ch.</td>
<td>Chapter</td>
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<td>Dominion Law Reports</td>
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<tr>
<td>DEC</td>
<td>Department of Environment and Conservation</td>
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<td>EPLJ</td>
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<tr>
<td>F.L.R.</td>
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<tr>
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<td>Food and Agriculture Organisation</td>
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<tr>
<td>H.L.</td>
<td>House of Lords</td>
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<tr>
<td>IASER</td>
<td>Institute of Applied Social and Economic Research</td>
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<td>KB</td>
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<tr>
<td>L.R.C. (Const)</td>
<td>Law Reports of the Commonwealth (Constitutional)</td>
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<td>L.T.</td>
<td>Law Times</td>
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<td>Melanesian Law Journal</td>
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<td>MIM</td>
<td>Mount Isa Mines</td>
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<tr>
<td>MMC</td>
<td>Metal Mining Corporation</td>
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<td>MRDC</td>
<td>Mineral Resources Development Company</td>
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<td>MULR</td>
<td>Melbourne University Law Review</td>
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<td>Nat Res J</td>
<td>Natural Resources Journal</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>NCD</td>
<td>National Capital District</td>
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<td>NGO</td>
<td>Non Government Organisation</td>
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<td>OTML</td>
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<td>Q.B.</td>
<td>Queens Bench</td>
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<td>South Pacific Regional Environmental Programme</td>
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<td>University of British Columbia Law Review</td>
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<td>University of Queensland Law Journal</td>
</tr>
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<td>USP</td>
<td>University of the South Pacific</td>
</tr>
<tr>
<td>VLR</td>
<td>Victorian Law Reports</td>
</tr>
<tr>
<td>W.S.</td>
<td>Writ of Summons</td>
</tr>
</tbody>
</table>
**List of Maps**

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Map 2:</td>
<td>Upper Sepik River and the Chambri Lakes.</td>
</tr>
<tr>
<td>Map 3:</td>
<td>The Ramu River, Madang Province.</td>
</tr>
<tr>
<td>Map 4:</td>
<td>Main Rivers in Kairuku Hiri, Central Province.</td>
</tr>
<tr>
<td>Map 5:</td>
<td>The Main Rivers in Gulf Province.</td>
</tr>
<tr>
<td>Map 6:</td>
<td>The Main Rivers in Western Province.</td>
</tr>
<tr>
<td>Map 7:</td>
<td>The Lakes of Southern Highlands Province.</td>
</tr>
</tbody>
</table>
Contents

Certification .......................................................................................................................... ii
Declaration Relating to Disposition of Thesis ................................................................. iii
Abstract ........................................................................................................................... iv
Acknowledgements .......................................................................................................... v
Acronyms ........................................................................................................................ viii
List of Maps ........................................................................................................................ x

PART 1  Introduction .......................................................................................................... 1

Chapter 1
Introduction ....................................................................................................................... 2
A. Scope and Purpose ......................................................................................................... 6
B. Methodology of Research ............................................................................................. 8

Chapter 2
Water Law .......................................................................................................................... 10
A. Content and Concept of Water Law .............................................................................. 11
B. Sources of Water Law .................................................................................................. 12
C. Customary Water Law ................................................................................................ 13
D. Water Rights ................................................................................................................ 15
E. Legal Classification of Water ......................................................................................... 16
   1. Surface Water ........................................................................................................... 16
   2. Water in Watercourse ............................................................................................... 17
   3. Underground Water ................................................................................................. 22

Chapter 3
Background To Understanding Customary Water Rights
Claims By Customary Landowners In Papua New Guinea ............................................. 24
A. Legal Pluralism ............................................................................................................. 26
B. The Status of Custom and Customary Law in Papua New Guinea ......................... 28
   1. Custom at Common Law ......................................................................................... 28
   2. Custom in Papua New Guinea ............................................................................... 30
   3. Customary Law in Papua New Guinea ................................................................. 31

xi
Chapter 8
Incidents Of The Practice Of Customary Water Rights In
The Upper Sepik River Area .................................................................167
A. Introduction .................................................................................167
B. Presentation of Data ......................................................................169
      (a) Land Use ...........................................................................170
      (b) River/Lake/Watercourse Use Rights ...........................................170
      (c) Resource Use.........................................................................174
      (d) Territorial Claims .................................................................175
      (e) Magico-Religious Considerations .............................................176
   2. Customary Water Rights Practices in the May River Villages .....................177
      (a) Land Use ...........................................................................177
      (b) River/Lake/Watercourse Use Rights ...........................................177
      (c) Resource Use.........................................................................178
      (d) Territorial Claims .................................................................179
      (e) Magico-Religious Considerations .............................................179
      (a) Land Use ...........................................................................180
      (b) River/Lake/Watercourse Use ....................................................180
      (c) Resource Use.........................................................................180
      (d) Territorial Claims .................................................................181
      (e) Magico-Religious Considerations .............................................181
      (a) Land Use ...........................................................................182
      (b) River/Lake/Watercourse Use ....................................................182
      (c) Resource Use.........................................................................182
      (d) Territorial Claims .................................................................183
      (e) Magico-Religious Considerations .............................................183
      (a) Land Use ...........................................................................183
      (b) River/Lake/Watercourse Use ....................................................184
      (c) Resource Use.........................................................................184
      (d) Territorial Claims .................................................................185
      (e) Magico-Religious Considerations .............................................185
      (a) Land Use ...........................................................................187
      (b) River/Lake/Watercourse Use ....................................................187
      (c) Resource Use.........................................................................188
      (d) Territorial Claims .................................................................188
      (e) Magico-Religious Considerations .............................................189
C. Summary and Conclusion ..................................................................190

Chapter 9
Incidents Of The Practice Of Customary Water Rights In
The Lower Ramu River Area ...............................................................194
A. Introduction .................................................................................194
B. Presentation of Data ......................................................................195
   1. Land Use ................................................................................195
   2. River/Lake/Watercourse Use .......................................................195
   3. Resource Use ...........................................................................197
Chapter 10
Incidents Of The Practice Of Customary Water Rights In
The Kairuku-Hiri ...................................................... 201
A. Introduction ...................................................... 201
B. Presentation of Data .............................................. 202
     (a) Land Use .................................................. 202
     (b) River/Lake/Watercourse Use ................................ 202
     (c) Resource Use ............................................. 204
     (d) Territorial Claims ......................................... 204
     (e) Magico-Religious Considerations ........................... 205
  2. Customary Water Rights Practices In and Around the Aroa River Area ............. 205
     (a) Land Use .................................................. 205
     (b) River/Lake/Watercourse Use ................................ 206
     (c) Resource Use ............................................. 207
     (d) Territorial Claims ......................................... 208
     (e) Magico-Religious Considerations ........................... 208
     (a) Land Use .................................................. 208
     (b) River/Lake/Watercourse Use ................................ 209
     (c) Resource Use ............................................. 209
     (d) Territorial Claims ......................................... 209
     (e) Magico-Religious Considerations ........................... 209
C. Summary and Conclusion ........................................ 209

Chapter 11
Incidents of the Practice of Customary Water Use Rights in
Selected Inland Water Areas of the Gulf Province .............................................. 211
A. Introduction ...................................................... 211
B. Presentation of Data .............................................. 212
     (a) Land Use .................................................. 213
     (b) River/Watercourse Use Rights ................................ 213
     (c) Resource Use ............................................. 216
     (d) Territorial Claims ......................................... 216
     (e) Magico Religious Considerations ........................... 216
  2. Customary Water Rights in the Pie, Ela, Poima and Purari River areas ......... 217
     (a) Land Use .................................................. 217
     (b) River/Lake/Watercourse Use Rights ................................ 217
     (c) Resource Use ............................................. 218
     (d) Territorial Claims ......................................... 219
     (e) Magico Religious Considerations ........................... 219
  3. Customary Water Rights in the Era River Area ............................................. 220
     (a) Land Use .................................................. 220
     (b) River/Lake/Watercourse Use Rights ................................ 220
     (c) Resource Use ............................................. 211
     (d) Territorial Claims ......................................... 211
Chapter 12
Incidents of the Practice of Customary Water Rights in Selected Inland Water Areas of Western Province

A. Introduction ............................................... 224

B. Presentation of Data ..................................... 225
      (a) Land Use .............................................. 225
      (b) River/Lake/Watercourse Use Rights .......................... 225
      (c) Resource Use ......................................... 225
      (d) Territorial Claims .................................... 225
         Magico Religious Considerations ................................. 226
   2. Customary Water Rights Practices in the Middle Fly/Lower Fly River Areas .............. 226
      (a) Land Use .............................................. 226
      (b) River/Lake/Watercourse Use Rights .......................... 226
      (c) Resource Use ......................................... 227
      (d) Territorial Claims .................................... 227
         Magico Religious Considerations ................................. 228
   3. Customary water Rights Practices in the Lake Murray Area ................................... 228
      (a) Land Use .............................................. 228
      (b) River/Lake/Watercourse Use Rights .......................... 228
      (c) Resource Use ......................................... 229
      (d) Territorial Claims .................................... 229
         Magico Religious Considerations ................................. 230

C. Summary and Conclusion ................................ 230

Chapter 13
Incidents of the Practice of Customary Water Rights in Lake Kutubu and Lake Kopiago, Southern Highlands Province ..................................................... 232

A. Introduction ............................................... 232

B. Presentation of Data ..................................... 233
      (a) Land Use .............................................. 233
      (b) River/Lake/Watercourse Use Rights .......................... 233
      (c) Resource Use ......................................... 234
      (d) Territorial Claims .................................... 235
         Magico Religious Considerations ................................. 235
   2. Customary Water Rights Practices In Lake Kopiago ................................... 235
      (a) Land Use .............................................. 235
      (b) River/Lake/Watercourse Use Rights .......................... 236
      (c) Resource Use ......................................... 236
      (d) Territorial Claims .................................... 236
         Magico Religious Considerations ................................. 236

C. Summary and Conclusion ................................ 237
PART I

Introduction

Introduction to Part I

The law in Papua New Guinea allows for the customs of the indigenous peoples of the country to be pleaded and applied as law. Accordingly, statute water law does not extinguish customary water use rights but allows for its co-existence with statute based water use rights – but without clearly demarcating the extent of one’s application from the other when they concurrently co-exists. Whilst on the one hand statute based water use rights are elaborately specified, on the other hand, customary water rights are unspecified and hence remain vague. The challenge therefore is to ascertain the nature of customary water rights. That challenge is the focus of this thesis.

Part I prepares us to meet that overall challenge by, inter alia, discussing the various water law concepts at common law and considering their relevance and applicability to the circumstances in Papua New Guinea.
Chapter 1

Introduction

For many indigenous inhabitants of Papua New Guinea, water is not only an important natural resource, with in-stream demands for domestic consumption, fishing and transportation. The sources of water, in particular, rivers, lakes and streams, in most, if not all, traditional societies have customary value and genealogical significance which the people relate to and identify with. It is by virtue of such revered relationships that the indigenous people claim "ownership" rights over such rivers, lakes and streams regardless of how proper and sustainable that may be in the terms of the introduced law.

At present, Papua New Guinea is experiencing rapid economic growth in forestry, agro-forestry and mining and petroleum development activities. The majority of these natural resource development activities are found in the rural, and often remote, areas on customary

1 The indigenous inhabitants of Papua New Guinea are Melanesians. Approximately 87 percent of the people live in their customary groups of clans, lineages or tribes in the rural areas and depend on subsistence agriculture and hunting, gathering and fishing for their livelihood. For a concise account, see Howlett D., A Geography of Papua and New Guinea, Nelson Ltd, Melbourne, (1967). For a recent account, see Rannells J., PNG: A Fact Book on Modern Papua New Guinea (2nd edn.), Oxford, Melbourne (1995).

2 Including ceremonial, healing, supernatural and religious values as a result of which such rivers, lakes and streams have been revered and conserved.

3 In some areas, people are named after rivers, lakes and streams.

4 In many South Pacific Island countries, the indigenous people have, in accordance with tradition and customary practices, claimed "ownership" over rivers, lakes, streams, waterholes, river beds, etc... see SPC/SPEC/ESCAP/UNEP, Customary Law Relating to Environment, Topic Review No. 21, SPREP (1985). See also White A., "Papua New Guinea: Customary Water Rights and Technology" in Larmour et.al. (eds.) Land, People and Government: Public Lands Policy in the South Pacific, USP, Suva (1981) at p.79. In relation to similar ownership claims to rivers, etc... by the Maori people (the tangata whenua) of New Zealand, see: The King v. Morison and Another [1950] NZLR 247; In re The Bed of the Wanganui River [1955] NZLR 419; In re The Bed of the Wanganui River [1962] NZLR 60 and Oliver W.H., Claims to the Waitangi Tribunal, Department of Justice (NZ), Wellington (1991) at pp.19-37. In Australia, since the High Court decision in Mabo v. Queensland (1992) 175 CLR 1 and the subsequent enactment of the Federal Native Titles Act 1993, several claims have been made by the Aborigines to the Native Titles Tribunal over rivers etc... A recent example of such claim is that of the Swan Valley Nyoongars Aborigines of Western Australia over the Swan and Canning Rivers: Gosden L., "Native Title Claim over Swan River", The West Australian, Perth, Friday 13 October 1995 at p.1.
land\(^5\) where indigenous people live by conducting fishing, hunting, gathering\(^6\) and subsistence agriculture for their daily sustenance. Some of these development activities have created water quality problems resulting from direct point source\(^7\) discharges and interim indirect discharges\(^8\) to rivers, lakes and streams. Hence, riparian customary landowners are disadvantaged and in some instances have turned hostile towards resource developers.\(^9\) In some instances, riparian customary landowners have made "hefty" compensation claims against resource developers despite the fact that some of these resource developers are operating within valid permit conditions authorised by the State and its instrumentalities. The following cases are cited examples:

1. The Ok Tedi Gold and Copper Mine

The Ok Tedi Mining Limited (OTML) operates the Ok Tedi Mine in the Western Province of Papua New Guinea. OTML is operated by BHP Limited (BHP). The ownership is currently being restructured to give BHP 52 percent, the PNG Government 30 percent and Metal Mining Corporation (MMC) 18 percent.\(^10\) The mine dumps about

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\(^6\) See Howlett supra n.1 at pp.6-22 and 74-77. In relation to the Aboriginal people of Australia, see Sweeney D., "Fishing, Hunting and Gathering Rights of Aboriginal Peoples in Australia" (1993) 16 (1) UNSW LJ 97.

\(^7\) "Point Source" discharges refers to clearly "identifiable discharge points from which pollutants enter natural water: most point sources are man made...": Williams D.A.R., *Environmental Law in New Zealand*, Butterworth, Wellington (1980) at p. 79.

\(^8\) These are largely non-point source discharges which occur through natural processes of erosion etc... see ibid. Generally, see also McGuen, *Protecting Water Quality*, GEM Inc., Wisconsin (1986) at pp. 35-37.


\(^10\) Clause 5 of the *OK Tedi Restated Eighth Supplement Agreement*, August 1995, as a schedule to the *Mining (Ok Tedi Restated Eighth Supplemented Agreement) Act 1995*. 

3
80,000 tonnes of tailings per day into the 1,000 kilometric OK Tedi-Fly River system.\(^1\) NGO groups such as the Australian Conservation Foundation\(^2\) (ACF) and the German-based Starnberg Institute\(^3\) have accused the mine for polluting the river system. Kyere and Castel of the Starnberg Institute claim:\(^4\)

"The known effects on the environment so far have been very profound. Not only is the water in the two rivers, the lagoons and the Fly River delta under strain, but the sedimentary deposits also impose a burden on the river regions. Copper in solutions and other heavy metals can make the water in both rivers toxic to fish and undrinkable for humans... According to the mine administration, fish stock in the upper reaches of the OK Tedi have already fallen by 50-80% after only a few years of operation."

Consequently, BHP, owner (52%) and operator of the mine, was sued on 5 May 1995 in the Victorian Supreme Court by some 7,500 villagers of the Miripiki clan, who are customary riparian landowners, claiming $2 billion compensation and $2 billion exemplary damages.\(^5\) The writ filed in the Victorian Supreme Court alleged that BHP Minerals Pty Ltd (a wholly-owned subsidiary of BHP) and OTML had "negligently and in breach of the duties of care" discharged poisonous materials into the OK Tedi-Fly River systems and had consequently destroyed the villagers' subsistence way of life. It also alleged that the PNG Government, a 30 percent shareholder in OTML, had "failed, neglected and refused" to enforce environmental agreements and covenants. Subsequently, on 6 September 1994, more than 1,000 new writs were filed in the National Court in Port Moresby against BHP and the PNG Government.\(^6\) In response, the Government introduced legislation to frustrate and outlaw the compensation proceedings, particularly in the Victorian Supreme Court.\(^7\) Consequently, an out-of-court settlement was reached on 11 June 1995 for a total of $550 million.\(^8\)

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\(^1\) PNG Post-Courier 9 September 1992 at p. 1. According to the findings of the Starnberg Institute, the mine dumps up to a total of 150,000 tonnes of tailings per day: see infra n.13.

\(^2\) Post-Courier supra n.11. Ibid.


\(^4\) Ibid p. at 33.


\(^6\) Ibid.


2. The Porgera Gold Mine

The Porgera Joint Venture (PJV) operates the mine in the Enga Province of PNG. The partners of the joint venture are MIM Holdings of Australia through Highlands Gold Ltd, CRA, Placer Pacific and the PNG Government, with equal interests at 25 percent per joint venture partner.19 The mine is operated by Placer Pacific.

An estimated 1,800 tonnes of tailings and waste rock is dumped into the Porgera-Lagaip-Strickland-Fly river system from the mine each day.20 An environmental officer with the Department of Enga (the province in which the mine is located) has raised concerns that the pollution level in the river system has increased recently to dangerous levels.21 Customary riparian landowners have instructed a law firm to file a law suit against the PJV alleging pollution and the loss of the people’s subsistence way of life.22

3. The Mali-Malilimi Timber Rights Purchase (TRP) Area

A Malaysian logging company, Stettin Bay Lumber Company, logs by clear felling the Mali-Malilimi TRP concession under a project lease that expires in the year 2009.23 Under the lease agreement, the company is required to observe buffer zones for rivers, streams or creeks, etc. so as not to interfere with their flow or to cause pollution. In recent times, the company is alleged to have failed in observing buffer zone structures, consequently causing severe soil erosion and water pollution in the Gavuru Creek system.24 And according to a spokesman of the riparian landowners, one John Tovili, logging has increased the sedimentation level of the creek to an extent that it is now “flowing with mud and debris,”25 making the water unsuitable for drinking. In Tovili’s words:26

“Villagers once jumped in the creek to swim or to look for fish, now they walk ankle-deep for several hundred metres away from the banks to its centre to wash and collect fresh water... fish and other marine [aquatic] life in the river is almost nil since the mud build-up because the company failed to adhere to

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19 In March 1993, the then Wingti Government demanded, and the other joint venture partners who then held 30 percent interest sold to it, 5 percent each of their shares. This brought the shareholdings to equal 25 percent each.

20 *The Times of Papua New Guinea* 27 April, 1995 at p. 5.

21 Ibid.

22 George Yapao lawyers were instructed to file the lawsuit: *Post Courier* 8 August 1995 and personal communications. The matter has now been adjourned *sine die* to allow for negotiation with the national government acting as the conciliator.


24 Ibid.

25 Ibid.

26 Ibid.
logging regulations on buffer strips - that is to cut down timber a hundred metres away from the bank. This was not done. The bulldozer took away every single timber along the banks and also graded the banks... [as a result] the water is fast flowing and full of mud, that's why we are having this problem.”

The riparian customary landowner villagers have, among other things, demanded that the Stettin Bay Lumber Co. pay: 27

- K900,000 (i.e. about $900,00) compensation for damage to the environment; and
- for a modern water supply system for the people.

The company has agreed to meet the demand for a water supply for the people but has refused to accede to the other demands. 28 The riparian customary landowners have instituted legal proceedings to pursue their claims. 29

A. Scope and Purpose

Under s.5 of the Customs Recognition Act, 30 the "ownership by custom of rights in, over or in connection with" a river or lake or "the ownership by custom of water, or of rights in, over or to water" can be pleaded and enforced in civil litigation.

Similarly, under s.5(2) of the Water Resources Act, 31 rights to use water in accordance with custom by the indigenous people are recognised and preserved by the Act. Section 16 of the Water Resources Act then provides for users of water resources on customary land 32 to pay compensation to customary riparian landowners for:33

a) any deprivation of the use of and enjoyment of the surface of the land or any part of it, or of rights to water customarily associated with the land;

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27 Ibid.
28 The Times of Papua New Guinea, 27 April 1995 at p. 5.
29 Post-Courier, 5 August 1995 and personal communications with the lawyer acting for the landowners, Philip Mamando.
30 Ch. 19, Revised Laws of Papua New Guinea.
31 Ch. 205, Revised Laws of Papua New Guinea.
32 Freehold or leasehold landowners are equally entitled.
b) any damage to the surface of the land, any part of the land, any improvements on the land, or damage to any flora and fauna;

c) deprivation or severance of any right of easements; or

d) any consequential damages.

The main purpose of this study is to inquire into and document the customs, values and usages in relation to inland waters in the selected inland water communities and to assess the nature and extent of, and the basis in law of, riparian customary landowners’ claims in accordance with customary law over claims of ownership rights to rivers, lakes and other watercourses and water resources in general against the background of s 5 of Water Resources Act that vests water use rights on the State. Some of the issues to be addressed will be:

- what are the incidents and attributes of customary water use rights both in law and customary practices?
- the basis of riparian customary landowners’ compensation claims against resource developers legitimately licensed and sanctioned by law or the State in accordance with the applicable legal regime;
- are riparian customary landowners’ claims to the "ownership" of a watercourse or part or parts of such watercourse valid in law?; Are riparian customary landowners’ rights "superior" to those other rights licensed by the State, resulting in the State, through its instrumentalities or the Government in general, entertaining compensation claims by riparian landowners against those resource developers whom the State has authorised in the first instance?

Hence the ultimate aim is to inquire into and understand the nature of customary water use rights as they now exist in Papua New Guinea today.

In addressing the above issues, the subsequent chapters in Part I will begin with a discourse on legal pluralism and customary law to set the stage. That will be followed by a chapter expounding the doctrinal basis of claims to water rights in indigenous societies and a further chapter on the common law doctrine of riparian rights. In Part II, the water

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34 A similar study was done on the Trobriand Islands of Papua New Guinea, but in relation to the question of the traditional/customary ownership rights of the indigenous people over the coastal areas that constitute their fishing grounds: see Williamson H., "Conflicting Claims to the Gardens of the Sea: The Traditional Ownership of Resources in the Trobriand Islands of Papua New Guinea" (1989) 17 Mel. LJ 26.
resource management regime is canvassed, and in Part III, actual case studies of ownership claims to watercourses and water resources are presented from empirical field work. Part IV is devoted to the analysis of the tensions between State rights and customary riparian landowners’ claims at customary law. Finally, in Part V, appropriate conclusions and observations are made.

B. Methodology of Research

In devising the methodology of research, I have had due regard to the fact that social research such as this must be designed to gain information and hence, insight into the subject under investigation so that the existing social reality is established. Through out the research, I have been guided by the cardinal principle that the research must be aimed at discovering facts rather than confirming what ever existing pre-conceptions. Hence the particular method of research adopted in this study was field survey where interviews on the basis of a standard questionnaire were conducted to obtain data.

In keeping with and to address the purpose of this thesis, empirical research with the main theme of identifying (and hence documenting) traditional ownership claims over watercourses and water resources was conducted in selected inland water communities of Papua New Guinea: the entire length and breadth of the Upper Sepik River, including the surrounding lakes of Wagu, Bimbal, Walmau and Chambri; Ramu River in the Madang Province; Angabanga, Aroa, Vanapa rivers and surrounding watercourses in the Central Province; Vailala, Purari, Era, Pie, and Ela rivers in the Gulf Province; Ok Tedi and Fly rivers and Lake Murray in the Western Province; and Lake Kutubu and Lake Kopiago in the Southern Highlands Province. These sites were purposely selected with a view to obtaining a national representative data on the various customary water rights usages and claims at customary law. Logistically, though, these sites were selected on the basis of initial contacts made to allow for smooth progress. In the case of the Sepik River, the fact that I come from that area was a major factor.

Since the field work sites are located in remote areas of the country and the populace is largely illiterate or semi-literate, I personally travelled to all the sites but the Fly River, Ok Tedi river, Lake Murray, Lake Kutubu and Lake Kopiago to conduct interviews with clan, tribe or village elders and, when necessary, with the aid of translators engaged as field assistants. I engaged research assistants to travel to those sites which I did not travel to. The research assistants I engaged were students at the University of of Papua New Guinea
but originally from respective field work sites. Such data obtained constitutes the basis of the thesis against which the available literature as presented in Parts I and II of the thesis, is considered to arrive at appropriate conclusions at Part V. A sample of the questionnaire used in the field work is appended as "Appendix I" at the end of the thesis.
Chapter 2

Water Law

Water is a substance very basic to the sustenance of any life form on planet Earth. Hence, water is a natural resource basic to human survival to such an extent that it is symbolic of life itself. Indeed, one commentator has admirably observed that:

"... water is unique in the diversity and importance of needs it fills. It quenches our thirst, gives life to essential food crops, furnishes habitat to fish resources, satisfies re-creational and aesthetic needs and purifies the air. Water is essential to survival. It is one of the most plentiful substances, yet it is often considered precious because there is not always enough water of the right quality in the right place at the right time."

Owing to water being a fundamentally important natural resource, humans in particular exert an increasingly wide and diverse range of demands for it, including domestic consumption, irrigation, fishery, and transportation. This diverse range of demands and utilisation gives water as a natural resource and, in turn, the study of water law its interdisciplinary character and appeal. The study of water law is not restricted to water law per se but involves its interconnections with other disciplines, such as fisheries law, environmental law and natural resources law to name a few. This feature is reflected in my treatment of the subject in this thesis.

2 Dovers and Day, in particular, note that: "Water is one of the fundamentally important natural resources, required by all forms of life and by industrialised human societies for an increasingly wide and diverse range of demands ... Societies now demand water for domestic consumption, garden irrigation, waste flushing, agriculture, transport and all forms of industry. These consumptive demands are increasing. Our modern societies are also placing a growing value on non-consumptive (that is, in stream or environmental) use of water, which are often in conflict with the traditional extractive uses": Dovers S.R. and D.G. Day, “Australian Rivers and Statute Law” (1988) 5 EPLJ 98.
3 Natural resources law, of course, includes land, forestry, mining and petroleum law.
The common law of England as it stood on 16 September 1975 (the date upon which Papua New Guinea attained political independence), is adopted into Papua New Guinea law and apply as part of the underlying law by virtue of Schedule 2.2 of the Constitution. Hence the following general water law principles, particularly those at English common law, would apply in Papua New Guinea provided that they are neither found to be inconsistent with the relevant indigenous Papua New Guinean customs nor inappropriate to the prevailing circumstances in Papua New Guinea, as set out under the constitutional scheme in Schedule 2 of the Constitution. Before one passes judgment on the applicability of these common law principles in Papua New Guinea, one must know these principles. That is the rationale behind the inclusion of this chapter.

Apart from the above stated primary reason, this chapter is considered to be a necessary introduction to the doctrinal bases of common law water law principles which will enable the reader to properly understand the various concepts of water law in the later parts of this thesis. For example, the common law classifies water and watercourse into different categories and consequently applies varying principles of law to each categories. These must be properly understood so that one is able to properly deal with these various categories, particularly in Part III and Part IV of this thesis.

A. Content and Concept of Water Law

Traditionally, the term “water law” has been synonymous with legal right to water, particularly in the American West. At English common law, the terminology is unheard of. Instead, the common law standard texts use the term “law of waters” or “law of watercourses”. In either instance, the focus has been on the rights to use water, either by the prior appropriation doctrine or the riparian rights doctrine. Under those circumstances, the following definition of “water law” would have sufficed:

“... water law is the creation, allocation and administration of water rights.”

These days, though, such a definition would be too restrictive, since water law interacts and encompasses other branches of law such as: water resources policy; laws governing

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7 Particularly in the western states of the USA: see supra n.4 and supra n.1 at 5-7 and 74-190.
surface water, groundwater and atmospheric water; questions of ownership rights and compensation; the regulation of all beneficial uses, such as domestic uses, municipal supply, irrigation, hydroelectric production, industrial and mining use, navigation, etc.; control over harmful effects of water, such as floods, droughts etc.; the safeguarding of water quality; pollution control; and the provisions regarding the interdependence of water and other natural resources in their relation to the environment. Hence, one can only agree with the observation that “[l]ike most fields of law, ‘water law’ defies precise definition”. Under the circumstances, only a broad definition taking into account the above stated instances would do justice. Hence, the following definition is adopted for the purposes of this thesis: Water law is the study and treatment of those aspects of the law that are of primary concern in the management and utilisation of water resources. Water law so conceived should then be applied in the diverse and competing demands which are placed on the resource.

B. Sources of Water Law

In jurisprudence, when one considers the concept of law, a distinction is drawn between law and legislation. “Legislation usually refers to positive, written law as promulgated under procedures contemplated in the constitution of a country, while the concept of ‘law’ covers not only the written laws, but also all the regulations of human activities, of which legislation will of course be one, but one only.” Hence, in Papua New Guinea, the sources of water law include the Constitution in so far as it applies to the regulation of natural resources which, of course, include water; all relevant and applicable legislation; customary law, as adopted under Schedule 2.1 of the Constitution, and, of course, the common law of England, as adopted under Schedule 2.2 of the Constitution.

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10 Supra n.4 at p.9.
11 Adapted from Goldfarb supra n.4 at pp.9-10.
12 Supra n.9 at p.55.
13 Particularly the Fourth Goal of the National Goals and Directive Principles of the Preamble to the Constitution and s.53 of the Constitution.
14 These are considered in detail at Chapter 3 infra.
In relation to the application of customary law as a source of water law in Moslem countries and some European countries, namely Netherlands, Belgium, Germany, Italy\(^\text{15}\) and Spain,\(^\text{16}\) Dante Caponera notes:

"Another source of water law at the national level is custom. This is of the greatest importance, as custom constitutes the continued repetition of certain actions or practices by a collectivity in the conviction that they are legally binding. These customs and practices must have been observed since time immemorial and often are not enshrined in any written text. Even if the latter are not always entered in the written legislation, this does not mean they are not known to the beneficiaries ...

Any water management plan for water resources, whether surface or underground, must recognize the existence of such customary usages."\(^\text{17}\)

As indicated previously at Chapter 1, this thesis pays particular attention to the exercise of customary rights. Relevant case studies of the prevalence and exercise of customary water rights are presented at Part III infra.\(^\text{18}\)

C. Customary Water Law

Customary water law can be defined, albeit loosely, as the regulation and utilisation of water and water resources by the indigenous inhabitants of a locality in accordance with their custom\(^\text{19}\) or tradition. Caponera correctly notes that:

"While written codification has lessened the importance of custom as a source of law, the influence is still felt in many fields, particularly in those relating to the use of land and water resources at the local level."

Generally, customary water law deals with subjects such as:

(i) customary legal status of water;

\(^{15}\) Caponera notes: "In Italy, particularly in the Po Valley and in Sicily, custom continues to form the basis of local water law ....": supra n.9 at p.62.

\(^{16}\) To this day, the Water Tribunal of Valencia, Spain, continues to sit and adjudicate on customary water rights. In November 1991, the Tribunal adjudicated on customary rights of the Ok Tedi and Fly River people of Papua New Guinea and found the State of Papua New Guinea and the mining company Ok Tedi Mining Ltd (OTML) to be in breach of the customary rights of the people.

\(^{17}\) Supra n.9 at 61.

\(^{18}\) Infra pp 166-238.
(ii) customary water rights distribution and management;

(iii) customary procedures for the settlement of disputes among water users; and

(iv) customary water administration.”

Statutory enactment on water law have in many countries, including Papua New Guinea, allowed for the prevalence of customary water law. In this regard, Caponera cites the following examples:

“To some extent, the Hindu and Buddhist principles of law have influenced and are still represented in the customary water laws of Bali, Myanmar (Burma), Kampuchea (Cambodia), Sri Lanka, Laos, Vietnam, Thailand, and, to a lesser degree, India. In Africa south of the Sahara, customary law has great relevance and is still respected, particularly for water use and distribution. This customary law is specifically recognized by statute in many countries, in spite of subsequently adopted legislation of a western type. Private ownership of water is unknown and the principle of ‘community of interests’ exists, whereby an individual has only a right to use land and water. These traditional and customary water administrations and institutions co-exist with government administration.

In several countries of Latin America where large American Indian communities exist, pre-Colombian customary and traditional water regulations and institutions deriving from Inca, Aztec and Maya civilisations continue to govern water at the users’ level.”

In relation to Papua New Guinea, detailed aspects of customary water law and practice obtained in a recent field work are presented at Part III infra. This thesis, in fact, considers the dynamics of customary law in relation to water.

19 Note that custom at common law differs from custom in Papua New Guinea: see infra pp 28-37.
20 Supra n.9 at p.67.
21 See s.5(2) Water Resources Act and the discussion infra Chapter 3.
22 Supra n.9 at p.66-67.
23 Supra n.9 at p.68.
24 See pp 166-238.
D. Water Rights

Since Embrey v. Owen and Race v. Ward, it has been presumed that at common law, water as a substance in its natural state cannot be the subject of property, given its transient, elusive nature. Even ancient Roman Law classified running water as res publici ("things" owned by the public).26 The common law, however, recognised and still to this day provides for the use and enjoyment of natural water in undiminished quantity and quality, but as an incidents of the ownership of land abutting a natural water course under the doctrine of riparian rights.27 Hence, in many countries where the common law was transplanted, riparian rights are generally acknowledged, even though statute law has to varying degrees reduced their scope of application.28

In other parts of the world, different principles of water rights exist. For example, in the western states of the USA, the prior appropriation doctrine, which accords water rights on the basis of "first in time, first in right" principles, applies.30 In other parts of the world where indigenous people live, for instance in Canada, their rights to water are either based on the doctrine of aboriginal title to water or Indian water rights.31 In Papua New Guinea, legislation allows for the recognition and enjoyment of customary water rights. These various doctrines upon which indigenous people claim water rights are the subject of Chapter 4 infra.32 Nevertheless, it must be mentioned that the basis upon which water rights are claimed either at aboriginal title, Indian water rights or at customary law in Papua New Guinea, is primarily the ownership of land at indigenous or customary law. When that is realised, the following argument becomes quite valid and applicable, even though the author was specifically relating to the American situation:

25 (1851) 6 Ex.369 and (1855) 4 E&B 702 respectively. See also Halsburys Laws of England (4th edn.) Vol.4 at p.90.
27 See Chapter 5 infra.
29 These states are: Alaska, Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah and Wyoming.
30 Among the large body of see literature, see Goldfarb supra n.4 and Getches supra n.1.
32 Infra pp 50-83.
“In general, each valid right to the use of water is real property right, the taking of which is constitutionally prohibited without full due process of law. 33 ... For example: (1) water rights are private rights subject to ownership and dispositions; (2) water rights are appurtenant to lands; (3) water can be lost of acquired by adverse use; (4) a quiet title action as to water rights may be brought; (5) as a corporeal hereditament and an intent in reality, a water right can serve as a reservation estate to which an easement may attach; and (6) water becomes personal property when received from the land.” 34

To conclude the discussion on water rights, one must be reminded that water rights concerns itself with the acquisition, ownership and exercise of “rights” to water rather than the ownership of water itself. 35

E. **Legal Classification of Water**

However improper it may be in terms of the hydrological cycle 36 and the overall hydrology, 37 the law classifies water into different categories. It is important to understand and appreciate these different categories, because each category of water attracts different principles of law, at least at common law. For our purposes, two broad categories can be identified: surface water and ground water. These two broad categories in turn have subclassifications. These are considered separately.

1. **Surface Water**

Surface water can either be diffused water or water running in a watercourse.

   (i) **Diffused surface water**

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33 For example, in Papua New Guinea it is same under section 53 of the Constitution.
35 In this regard, Goldfarb notes that: “It is not meaningless semantics to say that the subject of a private property right in water quantity is not the water itself but the use of water, even though in many American States water rights can be bought and sold”: supra n.4 at p.11.
Diffused surface water is defined as “water from rain, melting snow, springs or seepage, or detached from subsiding floods, which lies or flows on the surface of the earth but does not form a part of a watercourse or lake.” Getches explains that diffused surface water may include “water flowing in draws, swales, gullies, ravines and hollows” and may possibly include water found in marshes, depressions and small ponds. Diffused water follows no defined watercourse or channel. If and when such water flows into a defined channel or watercourse, it ceases to be diffused water. If diffused water is captured by the owner of the land upon which it is found, it becomes his property. Generally, such water is not subject to state regulation or the doctrine of riparian rights at common law.

When a person captures and impounds diffused surface water for his/her own use he/she does so at his/her own peril, because if and when such water escapes and causes injury to his/her neighbour, then he/she is bound to be liable under rule of Rylands v. Fletcher.

Other legal problems associated with diffused surface water are those involving drainage - when the person upon whose land diffused surface water is found attempts to get rid of it by draining.

2. Water in Watercourse

The term “watercourse” is generally used to describe “a range of different kinds of moving waters, encompassing estuaries, rivers, streams and their tributaries above and below ground, which are commonly but loosely distinguished by characteristics of length, breadth and depth.” It is, therefore, correct to say that watercourse generally includes all surface water contained within a defined channel. Coulson and Forbes define a watercourse as “a body of water issuing ex jure naturae from the earth, and by the same law pursuing a certain direction in a defined channel, till it forms confluence with wide tide.” This definition is, perhaps, better understood by referring to Wisdom’s exemplifying explanation:

38 Supra n.1 at p.293 (quoting from The Restatement (Second) of Torts).
39 Ibid.
40 Supra n.4 at p.18.
42 (1868) LR 3HL 330.
44 Supra n.6 at p.1.
45 Supra n.5 at p.93.
"All water courses have a natural source of surface water or underground water, and flow under the action of gravity along a reasonably well defined channel, consisting of a bed and banks, to a confluence with another water course or tidal waters."46

Judicially, in Taylor v. St. Helen’s, Jessel MR said that:

"A spring of water, both in law and in ordinary language, is ... a natural source of water, of a definite and well marked extent. A stream of water is water which runs in a defined course, so as to be capable of diversion: and it has been held that the term does not include the percolation of water underground."47

At common law, then, the essential features of a watercourse are that the water must flow (e.g. river) or be still or flat (lake, etc.) in a channel with reasonably well defined banks. When the water occasionally dries up, the watercourse does not cease to exist.48 Even in a case where a stream with permanently defined channels but otherwise for the occasional rainwater running off the surface soil into the channel and flowing and ceasing to flow for a considerable period of each year, that has been held to be a watercourse.49

Speaking of the constituent parts of a watercourse traditionally accepted at common law (and, according them, diverse legal consequences), Coulson and Forbes observe:

"Every water course ... consists of - 1. The bed50; 2. The bank51 or shore; 3. The water. The bed is covered by the water, and is the space subjacent to the water through which it flows, and is that which contains the water at its fullest when it does not overflow its banks. It is, generally speaking, all the soil

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46 Supra n.6 at p.1.
47 (1877) 6 Ch.D. 264.
48 See R v. Oxfordshire (1830) 1 B & Ad.301.
50 "The bed of a river is that portion of its soil which is alternatively covered and left bare as there may be an increase or diminution in the supply of water, and which is adequate to contain it at its average and mean stage during the entire year without reference to the extraordinary freshets of the winter or spring, or the extreme droughts of the summer or autumn." State of Alabama v. State of Georgia (1859) 54 U.S. 427. This definition was approved by the following British decisions: Hindson v. Ashby ([1896] 2 Ch.1 and Thames Conservators v. Smede, Dean and Co. [1897] 2 Q.B. 334.
51 "The banks are the elevations of land which confine the waters in their natural channel when they rise the highest and do not overflow the banks; and in that condition of the water the banks and soil which is permanently submerged from the bed of the river. The banks are part of the river bed, but the river does not include lands beyond the banks." Howard v. Ingersol (1851) 17 Ala 781 (American case). This definition was adopted with approval in Jones v. Mersey River Board [1958] 1 Q.B. 143.
below the high water mark either of the ordinary daily tides or of the ordinary
floods."\textsuperscript{52}

The water flowing in its natural watercourse at common law is \textit{publici juris}, meaning
that any member of the public who has right of access can use the water and that no one can
have right of property in the flowing water. This position has been recognised since
\textit{Embrey v. Owen}, when Baron Parke said:

"The right to have the stream to flow in its natural state without diminution or
alteration is an incident to the property in the land through which it passes; but
flowing water is \textit{publici juris}, not in the sense that it is \textit{bonum vacans}, to
which the first occupant may acquire an exclusive right, but that it is public
and common in this sense only, that all may reasonably use it who have a right
of access to it, that none can have any property in the water itself except in the
particular portion which he may choose to abstract from the stream and take
into his possession only ... But each proprietor of the adjacent land has the
right to the usufruct of the stream which flows through it."\textsuperscript{53}

A watercourse can either be natural or artifical or tidal or non-tidal. Different
consequences and principles of law apply to these sub-classifications at common law.
Hence, each are considered in turn.

(i) Natural watercourse

Much of the discussion above applies to this category. Subject to the legal
consequences that flow from the further classification of a tidal and non-tidal watercourse,
as considered below, generally the common law water right doctrine of riparian rights
applies and is exercised over natural watercourses.\textsuperscript{54} Riparian rights generally accrue from
the ownership of land abutting a watercourse.\textsuperscript{55} Here, it is suffice to note the principal
riparian rights only as:

- the right to abstract or divert water;\textsuperscript{56}
- the right to impound or obstruct water;\textsuperscript{57}

\textsuperscript{52} Supra n.5 at p.96.
\textsuperscript{53} (1851) 6 Ex.353. It was in this case that the following earlier cases approved and relied upon:
\textit{Mason v. Hill} (1833) 5 B. & Ad. 1; and \textit{Williams v. Morland} (1824) 2 B. & C. 910.
\textsuperscript{54} The common law doctrine of riparian rights is considered in detail at Chapter 5 infra pp
\textsuperscript{55} To be a riparian tenement, the land must be in actual contact with the watercourse: see \textit{Attwood v. Llay Main Collieries Ltd} [1926] Ch.444.
\textsuperscript{56} These rights are now subject to statutory control in many jurisdictions.
• the right to have the water flow in its "natural" state and quantity; and
• the right to have access to the water.58

(ii) Artificial watercourses

These are man-made watercourses.59 Generally, the common law riparian rights do not apply, but may become applicable:

a) where the origins of the artificial water course is unknown, and it is assumed at common law that at construction, riparian rights were granted;60

b) where the water course is partially artificial and partially natural and it is no longer possible to distinguish between the two parts;61 and

c) by express or implied grant or by prescription.62

Particularly in a situation where an artificial watercourse is temporary only in nature, the courts have been reluctant to hold that riparian rights apply.63 One commentator has usefully explained that:

"This is really a consequence of the approach of assuming that riparian rights in artificial channels do not arise naturally, but must be based on the assumption of a grant of such rights and, in the case of a temporary water course, it is assumed that no such rights would have been granted."64

(iii) Tidal watercourses

Tidal watercourses generally refers to public navigable rivers. Coulson and Forbes defines a public navigable river as "a river which is actually navigable and in which the tide ebbs and flows; ... The word "tide" is not confined to salt water, but includes fresh water ponded back by ordinary tides, and includes those waters not merely where there is a horizontal ebb and flow, but also where there is a vertical rise and fall caused by the ordinary sea tide."65 Coulson and Forbes go on to explain that:

57 Ibid.
59 These can either be constructed by individuals or a statutory authority: see ibid at p.7.
60 Roberts v. Richards (1881) 44 L.T. 271.
61 Ibid and supra n.58 at p.7.
62 Bailey & Co. v. Clark, Son and Morland [1902] 1 Ch. 649.
63 Wood v. Waud (1849) 18 L.J. Ex. 305 and Grearex v. Hayward (1853) 8 Ex. 291.
64 Supra n.58 at p.8.
65 Supra n.5 at p.100. See also supra n.6 at p.15.
"If it is a broad and deep channel, calculated to serve for the purpose of commerce, it will be natural to conclude that it has been a public navigation; but if it is a petty stream navigable only at certain states of the tide, and then only for a short time, and by very small boats, it is difficult to suppose that it has ever been a public navigable channel."  

At common law, a public navigable river is, then, akin to a public highway, attracting similar responsibilities and liabilities. 

By operation of the common law, unless otherwise proved, the ownership of the bed of a tidal watercourse is vested in the Crown. A riparian owner is entitled to his/her riparian rights, but subject to the navigation rights of the public. The rights of the public are confined to the right of navigation and fishing, but not beyond the point where the tide ebbs and flows. Likewise, the right of the Crown to the bed of a tidal watercourse is limited to the ordinary highwater mark along the shore. 

(iv) Non-tidal watercourse

Obviously a non-tidal watercourse would have to be the opposite of a tidal watercourse; i.e. generally, it would be a watercourse of a smaller type, conducive only for small boats and not those intended for trade and commerce. For example in Sim E Bak v. Ang Young Huat, a creek was formed by the waters of a tidal river when it filled excavations made owing to clay dug from adjoining land. The adjoining land was formerly dry. The creek was used by boats in connection with the working day, and there was no evidence that the creek was used by the public as a waterway. The court decided that the creek was not part of a public navigable river. Some of the legal characteristics of a non-tidal watercourse distinguished from those of a tidal watercourse have been described in these terms:

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66 Supra n.5 at p.101. A navigable river is then akin to a public highway - available to the general public.
67 In this regard, A.S. Wisdom in Aspects of Water Law, Barry Rose Ltd, Chichester (1981) notes at pp.40-41:
“A person in control at a vessel of an inland navigation is under a duty to take reasonable care and to use reasonable skill to prevent the vessel from doing injury, and negligence on his part may be represented by his failure to observe the rules of good seamanship ... Persons navigating a river improperly, either by too much speed or by negligent conduct, are as much liable if death ensues as are those who cause it on a proper highway on land, either by furious driving or by negligent conduct.”
68 Murphy v. Ryan (1868) I.R. 2 C.L. 143.
69 Supra n.6 at p.16.
70 It is a question of fact and each case is to be determined by the evidence available: Ingram v. Percival [1969] 1 Q.B. 548.
"The main difference between a non-tidal water course and its tidal counterpart is that, usually, neither the Crown nor the public have any rights or privileges in relation to a non-tidal water course, though many of the more important non-tidal water courses are subject to public rights of navigation. As a consequence of this, the bed of a non-tidal water course is *prima facie* in private ownership and the public have no right to fish therein."72

The bed of a non-tidal watercourse belongs to the riparian owner up to the middle of the stream.73 If, however, the land of the non-tidal watercourse is owned by one person, that person is presumed at common law to own the whole bed of the watercourse.74 Unless the right of navigation is acquired by grant or prescription, the public has no general right of navigation on a non-tidal watercourse. Likewise, the public has no right of fishing.

The above stated principles equally apply to inland lakes and ponds.75 The only additional point that needs to be mentioned is that even in a large lake the public has no general right of navigation.76

3. Underground Water

According to Lord Chelmsford in *Chasemore v. Richards*,77 underground water can either be:

a) "a known subterranean channel flowing in a certain and defined course",

or

b) "water percolating through underground strata, which has no certain course, no defined limits but oozes through the soil in every direction in which the rain penetrates."

In category (a), the same principles applicable to surface watercourses, such as riparian rights, will apply.78 If, however, the existence of the flowing underground stream is not known, as perhaps in (b), riparian rights will not apply.80 *Chasemore v.*

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72 Supra n.6 at pp.16-17.
73 *Blount v. Layard* [1891] 2 Ch. 681. This is based on the *medium filum* rule.
74 Supra n.6 at p.17.
76 Navigation right arises from prescription or immemorial user.
77 (1859) 7 H.L. Cas. 349.
78 "... a subterranean flow of water may in some circumstances possess the very same characteristics as a body of water running on the surface": *M’Nab v. Robertson* [1897] A.C. 129.
79 Underground streams are rare in fact. Perhaps one of the few known is that dealt with in *Dickinson v. Grand Junction Canal Co.* (1852) 7 Ex. 282, where the river sank underground and re-emerged at a later point.
80 *Bradford Corporation v. Ferrand* [1902] 2 Ch. 655.
Richards\textsuperscript{81} is the case on point. In this case, a mill owner enjoyed the use of a stream which was, in fact, replenished by percolating and underground water, for more than 20 years. After an adjoining land owner had installed a well to supply water to inhabitants of the district who themselves were not riparian, the mill owner lost the use of the stream. Since the underground water was percolating water, the House of Lords decided that the action could not be maintained for the interception of the percolating water by the other land owner.\textsuperscript{82}

A succinct restatement of the law in relation to underground water is made by Macrory in these terms:\textsuperscript{83}

"In many situations any water that is below the surface is unlikely to be flowing in such channels, but will be percolating through the soil. In such cases, the common law principles concerning riparian rights will not apply. Abstraction or draining of such water may take place, and if this results in the drying up of a well or stream in the ownership of another which is supplied by the percolating water there is no right of action for interference with water rights ... But an action will lie if, as part of the action of drawing off underground water, water from a defined channel is drawn off: Grand Junction Canal Co. v. Shugar (1871) 24 L.T. 402."

Nevertheless, it is worth noting that nowadays, in many jurisdictions of the common law countries, statute law regulates the abstraction etc. of underground water.

\textsuperscript{81} Supra n.77.
\textsuperscript{82} See also the earlier case of Acton v. Blundel (1843) 13 L.J. Ex. 289.
\textsuperscript{83} Supra n.58 at p.6.
Chapter 3

Background To Understanding Customary Water Rights Claims By Customary Landowners In Papua New Guinea

It is perhaps correct to say that the Independent State of Papua New Guinea (PNG) is, in essence, a collection of more than 700 tribes fused together under the banner of a single nation state by the process of colonialism. This is because before colonialism, small-scale societies with distinct social, political and economic systems based on their traditions, customs and values existed, and they still persist today but encapsulated and co-existing.


2 Earliest evidence of human settlement in mainland New Guinea dates back 25,000 BC. The existence of the island became known to the outside world in 1512, when it was first sighted by the Portuguese explorer, Antonio D'Abrew. 1873 saw the first European settlement, when the London Missionary Society settled at Hanuabada, Port Moresby. In 1884, southeastern New Guinea was declared a British protectorate, and northeastern New Guinea was annexed by Germany, and the New Guinea Company was granted imperial charter to administer the colony. Britain formally annexed southeastern New Guinea in 1888 and named it British New Guinea. When Australia took control of this part of the island in 1905, it named it Papua. German New Guinea came under the control of the Australian army in 1914 (World War I), and in 1919, it became a mandated territory of the League of Nations, administered by Australia. During World War II (1942-1945), ANGAU, an Australian Army unit, administered both territories. Then, in 1945, Australia established a single civilian administration to administer both territories as Papua and New Guinea. In 1973, the territory, called Papua New Guinea since 1971, gained self-governing status. In 1975, Papua New Guinea became an independent nation. For concise historical account, see Nonggorr ibid. See also Turner M., Papua New Guinea: The Challenge of Independence, Penguin Books, Australia (1990) at pp. 1-24 and Howlett D., A Geography of Papua and New Guinea, Nelson Ltd, Melbourne (1967).

3 According to Lawrence, in traditional New Guinea societies, economic specialisation is absent and, therefore, societies are not organised on the basis of occupational groupings like in western society. Likewise, owing to the fact that most of "the inhabitants of any one local group are linked to each other, and all of them are linked to a number of other people in different local groups, by kinship, affinal and descent ties, ...it would be difficult to enforce status differences between kinsmen. Hence, there can be no political-legal machinery like the Western state with all authority finally centralised at its apex and delegated to junior officials." On this basis, Lawrence, views New Guinea societies as stateless societies: Lawrence P., "The State Versus Stateless Societies in Papua New Guinea" in Brown (ed.), Fashion of Law in New Guinea, Butterworth, Sydney (1968) 15 at pp. 19-25. For a fuller exposition of Lawrence's arguments,
within the nation state. Hence, PNG offers and exists as an excellent living testimony of a plural society with plural legal system (state law in the formal order and customary law existing in the informal order) and dual economies: i.e., the formal cash-based economy and the informal subsistence economy. The subsistence economy prevails in the rural areas, with a massive 87 percent dependent on it by engaging in subsistence agriculture, fishing, hunting and gathering. People in this sector of the economy, also engage in small scale cash crop growing and other artisanal activities to earn cash, but their involvement is sporadic in nature and minimal. On the other hand, the existence of the modern state, PNG, depends on a strong and vibrant economy largely based on the export of agricultural commodities and minerals and a small tax base of a mere 13 percent of the population engaged in the formal cash-based economy. The following comments best typify the pluralist nature of PNG:

"PNG is a striking example of a plural society. The society is made up of a modern sector and a traditional sector which is made up of numerous tribal or small-scale societies. The former is greatly influenced by, if not solely based on, western values and technology and is usually based in the urban areas. On the other hand, villages or communities in the rural areas are arranged according to traditional social structures and utilise very basic technologies. Since the beginning of colonialism, the traditional societies are constantly being subjected to the influence of outside cultures although changes wrought


about by these influences have not totally eroded the traditional bases of these societies."6

It is against this background that this chapter introduces the concept of customary water rights as they exist at customary law in Papua New Guinea. To ensure better understanding, that is preceded by a discourse on the pluralistic nature of law and the status of custom as law in Papua New Guinea today.

A. Legal Pluralism

The concept of legal pluralism, perhaps, attained credence, substance and recognition "from the discovery of indigenous forms of law among remote African villagers and New Guinea tribesmen"7 by colonialism.8 Generally, legal pluralism "recognizes that law exists in every social grouping, institution, community, or social field within society that makes rules to which its members adhere."9 According to Merry, legal pluralism "is generally defined as a situation in which two or more legal systems coexist in the same social field."10 In a more elaborate form, Griffiths defines legal pluralism as "that state of affairs, for any social field, in which behaviour pursuant to more than one legal order occurs."11

According to Pospisil, "every functioning subgroup in a society has its own legal system which is necessarily different in some respects from those of the other subgroups".12 In a "juristic" sense,13 however, a legal system is pluralistic "when the sovereign commands

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8 In this regard, Merry notes that: in sum, research on legal pluralism began in the study of colonial societies in which an imperialist nation, equipped with a centralised and codified legal system, imposed this system on societies with far different legal systems, often unwritten and lacking formal structures for judging and punishing": id at p.874.
10 Supra n. 7 at p.870.
13 According to Griffiths, the other sense in which legal pluralism can be viewed is in the "social science" perspective, as an empirical state of affairs in society where there is coexistence within a social group of legal orders but not belonging to a single system: supra n.11 at p.7.
different bodies of law for different groups of the population varying by ethnicity, religion, nationality or geography and when the parallel legal regimes are all dependent on the state legal system." Legal pluralism in Papua New Guinea prior to colonialism and the emergence of a sovereign state cannot be strictly viewed in this sense but, perhaps, in the "social science" perspective, where an empirical state of affairs prevails in society and there is coexistence within a social group of legal orders but not belonging to a single system. Post colonialism and the emergence and existence of a sovereign state, legal pluralism in Papua New Guinea adopts juristic characteristic, but not in the strict sense of adopting "different bodies of law for different groups of the population" on the basis of religion (or geography) since such laws would run the risk of infringing certain constitutional protection (rights or freedoms) clauses. Looking toward the 21st century, however, one can only agree with Merry that:

"Legal pluralism has expanded from a concept that refers to the relations between colonized and colonizer to relations between dominant groups and subordinate groups, such as religious, ethnic, or cultural minorities, immigrant groups and unofficial forms of ordering located in social networks or institutions."16

Hence, Merry has dubbed legal pluralism in colonial and post-colonial societies as "classic legal pluralism" and those unofficial forms of orderings located in social networks or institutions as "new legal pluralism."17 It is at classical legal pluralism that there exists in Papua New Guinea today an elaborate body of normative orders in the form of customs and traditional customary values affecting, arguably, all facets of life of indigenous people which have now been recognised as indigenous law or customary law. In this thesis, the

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14 Supra n.7 at p.871. On the distinction between the "social science" view of legal pluralism and that of the "juristic" view, see supra n.11.
15 For example, s.45 of the Constitution, that provides for the freedom of conscience, thought and religion.
16 Supra n.7 at p.872.
term customary law is adopted, but both terms, customary law and indigenous law, can be used interchangeably and will be so used where necessary and appropriate.

B. The Status of Custom and Customary Law in Papua New Guinea

"Custom" at (the received) common law and "custom" in Papua New Guinea and in many other indigenous societies are not necessarily the same. Although they are very much related, there are certain aspects and areas of difference which affect their applicability and application to a given situation. To avoid confusion, these subjects are, therefore, treated separately.

1. Custom at Common Law

History records that "twelfth-century England was ruled by custom" where "each manor, each county and perhaps even each village had its own customs. The powers of the royal government were customary also." Custom was not required to be "immemorially old" for it to be enforced as law until the 1200s, when "it had become the accepted rule that for a custom of the country to be accepted by the courts, it had to be immemorially old: and the date chosen was September 3, 1289, the coronation of Richard I." Custom at English common law is affected, influenced and shaped by its rich traditions and long history.

At today’s common law, custom refers to "a particular rule which has existed either actually or presumptively from time immemorial and obtained the force of law in a particular locality although contrary to, or not inconsistent with, general common law of the realm." Custom is, of course, unwritten and its existence and application is restricted to a particular locality and to specified matters only. For custom to be valid at common law, it is essential that the following four attributes be established: "(1) it must be immemorial"; (2) it must be reasonable; (3) it must be certain in respect of its nature generally, as well as in respect of the locality where it is alleged to obtain and the persons whom it is alleged to affect; and (4) "it must have continued without interruption since its immemorial origin."

21 Id. at para 406. Footnotes omitted.
Notably, these characteristics are also applied as rules of evidence towards the proof or otherwise of the existence of custom.22

In relation to the first requirement, that custom must be of immemorial existence, the year 1189, being the commencement of the reign of King Richard I, has long been accepted as the acceptable period in time.23 In relation to the second requirement of reasonableness, it has been held that the question of reasonableness of the custom must be determined at the inception of the custom.24 The reason for this is that “commencement must be based on reasonable cause, for, if an alleged custom is unreasonable in its origin, no user or continuance can make it good.”25 For example, custom which is contrary to public good; injurious or prejudicial to the majority; or that founded in wrong and usurpation and not on the voluntary consent of the people to whom it relates, would be counted unreasonable and void in law.26 The question of whether or not a custom is reasonable is a question of law and not of fact. In relation to the third requirement, that custom must be certain, it has been said that there “must be some definite limit to the right claimed to exist under an alleged custom (1) in respect of its nature generally, (2) in respect of the locality where the custom is alleged to exist, and (3) in respect of the persons alleged to be affected by the custom.”27

As per the fourth requirement, that the custom must have continued without interruption since time immemorial, it has been observed that “there must be long, continuous, habitual user. Consequently, when there has been interruption or disturbance of the user, acquiesced in by the persons who are alleged to be entitled to exercise the right, and who have not either by legal or illegal means attempted to prevent the disturbance or interference and the disturbance or interruption has not been for a short time but for many years, a strong presumption arises that there never was any such custom as that alleged.”28

22 Ibid.
23 Id. 20 para 407. Footnotes omitted.
25 Supra n.20 at para 411. Footnotes omitted.
26 Ibid. In Wolstanton Ltd v. Newcastle-Under-Lyme Corp [1940] A.C. 860 (H.L.) an alleged custom of mining which caused subsidence and damage to neighbouring land was held to be unreasonable on the ground that it would occasion unjust or disproportionate burden and unnecessary expense on other individuals for the benefit of some.
27 Supra n.20 para at p.415. Footnotes omitted. In Hammerton v. Honey (1876) 24 W.R. 603, Jessel MR explained: “When we are told that custom must be certain - that relates to the evidence of a custom. There is no such thing as law which is uncertain - the notion of law means a certain rule of some kind.” See also Alfred F. Beckett Ltd v. Lyons [1967] 1 Ch. 449 at p.485 (C.A.).
28 Supra n.20 at para 418. Footnotes omitted.
When established, custom becomes the law of the particular place where it has been proved to apply.\textsuperscript{29} For customs to prevail in a particular locality, they must be consistent with each other. This is because: "Two conflicting customs cannot prevail in the same locality; for, if both are really customs, then both are of equal antiquity and equally compulsory, and this is impossible where the customs are contradictory."\textsuperscript{30}

Custom can only be extinguished or abolished by statute law:- either expressly or impliedly by the use of words properly construed to be inconsistent with the continued existence of the custom.\textsuperscript{31}

2. Custom in Papua New Guinea

In Papua New Guinea, under Schedule 1.2 of the Constitution, custom is defined as "the customs and usages of indigenous inhabitants of the country existing in relation to the matter in question at the time when and the place in relation to which the matter arises, regardless of whether or not the custom or usage has existed from time immemorial." Contrasted against the common law definition, custom in Papua New Guinea differs to the extent that the particular custom need not have existed from time immemorial nor have continued from time immemorial without interruption. It is in this context that custom in Papua New Guinea is considered as being fluid, flexible and responsive to social change. Perhaps the prevailing nature of custom in Papua New Guinea (or all Melanesian societies, for that matter) is best articulated by Bernard Narokobi when he says:

"Custom is an aspect of the total way of life of a given community of people. It is an aspect of the religious, political and economic way of life. It involves the ecosystem, the heavens and the earth; life, death and life after death (i.e. spiritual). It is not a mere set of rules or norms. Being a way of life, it incorporates a community's traditions, beliefs and modes of conduct. Custom involves social mores of a people handed down from age to age (i.e. generation to generation), guided by the certainty of self enforcement without

\textsuperscript{29} Odgers and Oders supra n.19 at 77.
\textsuperscript{30} Ibid.
\textsuperscript{31} Supra n.20 at para 441. For an American perspective on customary claims to beach fronts and fishing rights, see Rose C., "The Comedy of the Commons: Custom, Commerce, and Inherently Public Property" (1986) 53(3) The University of Chicago Law Review 711-780.
the support of an ordered centralist state apparatus. The heavens and the earth enforce custom, propagate it and sustain it.”

The dynamic nature of custom is aptly explained by Professor Cooter when he says:

“Custom often adjusts and responds to new situations spontaneously, without any governance structure. As clans become larger and more organisation is needed, more formal procedures may be required, such as decisions by a council of elders. In any case, custom should be dynamic and responsive within the scope of its operation.”

3. Customary Law in Papua New Guinea

The laws of Papua New Guinea are exclusively set out under s 9 of the Constitution:

"The laws of Papua New Guinea consist of-

a) this Constitution; and
b) the Organic Laws; and
c) the Acts of the Parliament; and
d) Emergency Regulations; and
da) the Provincial Law; and
e) laws made under or adopted by or under this Constitution or any of those laws; and
f) the underlying law, and none other."

In relation to paragraph (f), the Constitution under s.20 goes onto stipulate:

“(1) An Act of Parliament shall
a) declare the underlying law of Papua New Guinea; and
b) provide for the development of the underlying law of Papua New Guinea.

(2) Until such time as an Act of Parliament provides otherwise;

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32 Narokobi B.M., Custom - Customary Law Meaning, unpublished lecture notes, Faculty of Law, University of Papua New Guinea (undated) at pp 1-2. Orr notes that: "In the traditional world of Papua New Guinea, custom permeates the whole society and it is not possible to distinguish where legal aspects begin and end and where other aspects such as family, religion and agriculture begin and end. It is a flexible system, which resolves disputes in the light of a large number of factors.": Orr R., "Provincial Governments and Customary law" (1991) Mel. L. J. (Special Issue) 71 at p. 83. Similar views were also expressed in Barnett T.E., "Law and Justice Melanesian Style" in Clunies Ross A. and J. Langmore (eds.), Alternative Strategies for Papua New Guinea, Melbourne, 1973.

a) the underlying law of Papua New Guinea shall be as prescribed in Schedule 2; and

b) the manner of development of the underlying law shall be as prescribed by Schedule 2.

(3) Certain pre-Independence statutes are adopted and shall be adopted, as Acts of Parliament and subordinate enactment of Papua New Guinea, as prescribed by Schedule 2".

Schedule 2 of the *Constitution* specifically provides, in order of hierarchy, constituents of the underlying law as:-

a) custom, as defined under Schedule 1.2 of the *Constitution*;

b) the principles and rules of common law and equity of England as of 16 September 1975, the date of Independence; and

c) judicial formulations and pronouncements of the superior courts of Papua New Guinea.

With particular regards to custom, Schedule 2.1 states:

"(1) Subject to subsections (2) and (3), custom is adopted and shall be applied and enforced, as part of the underlying law.

(2) Subsection (1) does not apply in respect of any custom that is, and to the extent that it is, inconsistent with a Constitutional Law or a statute, or repugnant to the general principles of humanity.

(3) An Act of the Parliament may-

(a) provide for the proof and pleading of custom for any purpose; and

(b) regulate the manner in which, or the purpose for which, custom may be recognised, applied or enforced; and

(c) provide for the resolution of conflicts of custom."

Strictly speaking, the term "customary law" does not occur in the body of the *Constitution*, but "custom" applied as part of the "underlying law". Under Schedule 2.2 of the *Constitution*, the principles and rules of English common law and equity are adopted, but subject to "custom" and the circumstantial applicability rule. Under Schedule 2.3 of the *Constitution*, where "there appears to be no rule of law applicable and appropriate to the circumstances of the country", the courts (in particular the superior courts) are charged with the duty of formulating appropriate rules as part of the underlying law with due regard, *inter alia*, to the National Goals and Directive Principles and Basic Social Obligations set
out in the Preamble to the Constitution and, of course, custom. In doing so, the courts (especially the National Court and Supreme Court) have a duty under Sch. 2.4:

“to ensure that, with due regard to the need for consistency, the underlying law develops as a coherent system in a manner that is appropriate to the circumstances of the country from time to time, except insofar as it would not be proper to do so by judicial act.”

Since Parliament has not enacted the appropriate legislation setting out the underlying law and providing for its development, as required under s.20 and Schedule 2.1(3) of the Constitution, the above situation prevails. Accepted by many as its substitution, the pre-Independence Native Customs (Recognition) Act 1963 has been adopted, "subject to any Constitutional Law", as an Act of Parliament by virtue of s.20 and Schedule 2.6 of the Constitution, and the Act now exists as Customs Recognition Act Ch.19 (of the Revised Laws of PNG).

The evolution of custom into customary law, but applied as part of the underlying law under Schedule 2.1 of the Constitution, has been fraught with inconsistency and misunderstanding, resulting in squabbling amongst lawyers, judges and the legislators and hence, regression.

The main difficulty, it would appear, has been associated with the question of the universality of custom within the nation before it can be applied by the courts as part of the underlying law. Various views have been expressed in this regard. The first is that of Prentice C.J. in Constitutional Reference No. 1 of 1977: Tatut v. Cassimus, where his Honour said:

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34 The PNG Law Reform Commission, pursuant to its obligation under Section 21(2) and Schedule 2.14 of the Constitution to investigate and report on the development of the underlying law has produced a report entitled, The Role of Customary Law in the Legal System, Law Reform Commission Report No. 7 (1977). This report included the proposed drafts of an Underlying Law Bill, Constitutional Amendment Bill and Native Customs (Recognition) Bill. Parliament is yet to act on this report and/or its recommendations.

"... before undertaking the duty of formulating an appropriate rule as part of the underlying law, in regard to a matter close-knit into the fabric of traditional life, the court would I think, need to have evidence before it of an appropriate almost country-wide custom."\textsuperscript{36}

This view holds that, whilst the pluralistic nature and occurrence of custom is recognised and accepted, only custom that occurs nationally and is generally accepted to be so should be incorporated into law and applied as part of the underlying law. The General Constitutional Commission in its 1983 Final Report was in support of this view and made the following recommendation to Parliament:\textsuperscript{37}

\textit{3.18 Schedule 2.1}

We recommend that the reference, "custom" under Schedule 2.1 be clarified. Any custom which is proposed to be adopted under this schedule must be a custom that is recognised throughout Papua New Guinea as a matter of fact and should not include local custom or custom that applies only to some or certain parts of the country. Although the courts have recognised qualifications for custom that is to be adopted under Schedule 2.1, we make this recommendation, nevertheless, because it is not clear whether custom must be a custom prevailing throughout Papua New Guinea or not."

The second view is to be found in the judgement of Kapi J (as he then was) in \textit{Supreme Court Reference No.4 of 1980: Re Petition of M.T. Somare}.\textsuperscript{38} This case involved the question of \textit{locus standi} of Mr Somare, then Opposition Leader in the National Parliament, when he sought to challenge the constitutional validity of a decision of Parliament and an Act of Parliament approving the commitment of troops to Vanuatu for peace keeping operations. The judge said:\textsuperscript{39}

"The first difficulty that arises is that indigenous inhabitants of this country have different customs applying in various matters. Where parties come from the same custom area there is no difficulty as the custom would apply to both. However there is a difficulty when the parties before the court are from different custom areas or where the subject matter before the court is a National matter or a National issue. The question then arises as to what is the

\textsuperscript{36} [1978] PNGLR 295 at p.298.
\textsuperscript{38} [1981] PNGLR 265.
custom applicable...In my view before a custom is adopted and enforced as part of the underlying law under Schedule 2.1 of the Constitution it must be established that there is a community of indigenous inhabitants of this country which recognise a certain customary rule. In a case which involves a dispute between two individuals regarding their private rights, it must established be that a custom which the court proposes to adopt as law is recognised and extends to both parties. In a case which involves an issue which has a general application to the whole country, the Leader of Opposition has locus standi, as in this case, it must be established that there is a custom which is common to all societies throughout the country. Custom as is referred to under Schedule 2.1 of the Constitution is not created by the courts but is discovered as a matter of fact and adopted as law."

In essence, this view adopts three instances under which custom can be adopted and applied as part of the underlying law under Schedule 2.1: (a) where parties to the dispute come from the same custom area; (b) where parties to a dispute come from different custom areas; and (c) where the matter in the dispute is of national significance. In (a), the prevailing custom can be adopted and applied as law; in (b), the court can only adopt and apply custom if the custom is recognised and accepted by the parties to the dispute; and in (c), "it must be established that there is a custom which is common to all societies throughout the country" before that custom can be applied by the courts.

In relation to the above views concerning the adoption and application of custom under Schedule 2.1, one commentator has argued with considerable force that:40

"To require that custom for the purposes of Schedule 2.1 must be common to the whole country, as the General Constitutional Commission suggests, would then produce unfortunate results. The operations of the Village Courts, for instance, would become impossible, since every day they are called upon to resolve disputes arising from local custom. For the same reason, a Local Court would hardly ever be in a position to hear a claim arising from custom. It is hard to believe that this result was seriously intended by the Constitutional Commission. Certainly the straightforward approach of Kapi J. on this point is much to be preferred. Whatever the requirements of generality or

39 Id. at 288.
40 Jessep O., "Customary Family Law, The Courts and The Constitution" in De Vere, et. al., supra n.35 p. 39 at p.44.
universality of custom when Schedule 2.3 is referred to (formulation of new rules of underlying law), no such requirements or limitations are necessary to give proper effect to the provisions of Schedule 2.1.”

With particular reference to the application of custom under Schedule 2.1, the same commentator illustrates the difficulty of its application by citing customary marriages in these terms:41

"On the one hand, difficulty may still be encountered with the ‘community of indigenous inhabitants’ test propounded by Kapi J., which prevents the recognition of a custom unless it is common to both parties to a transaction or dispute. If taken literally, and leaving aside the operation of s 3 of the Marriage Act, this test would prevent the establishment of a customary marriage where the parties belong to groups with different marriage customs, because by definition there would be no common custom. For the same reason, custom would become irrelevant in disputes over custody or bride wealth where the parties come from different areas. This result is scarcely compelling, since it fails to allow that one party's custom may itself recognise that spouses or parties may come from other areas, and also gives no support to the rules established and effectively implemented under the Customs Recognition Act in cases of conflict of custom... It is fair to conclude then that the approach of Kapi J., if supported by provisions to cater for conflicts of custom, leads to a more convincing interpretation of Schedule 2.1. In so far as Schedule 2.4 (need for uniformity in development of underlying law) is relevant to Schedule 2.1, it will be satisfied by the court's developing a consistent and uniform approach to the ascertainment and adoption of local customary law in particular cases."

The third view as to how best possible can custom be applied as law under Schedule 2.1 of the Constitution is expressed by a commentator in these terms:

"The alternative approach is to incorporate as the underlying law the custom of particular places in appropriate instances, notwithstanding that this custom

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41 Ibid.
may not be national or indeed may be found in one place, and to deal with conflicts between the custom of one place and another as they arise."\(^{42}\)

In my opinion, this view cannot withstand scrutiny, given the dynamic nature of customary law in Papua New Guinea, where it is flexible and responsive to social change. Codification will only freeze customary law at a given point in time, thereby inhibiting and countering its dynamic nature and character.\(^{43}\)

Perhaps the acceptable approach to adopt in applying custom as law under Schedule 2.1 of the Constitution would be that formulated by Kapi J (as he then was) in the Somare Case, but with the aid of s. 7 of the Customs Recognition Act in instances where there is conflict of customs.\(^{44}\) Section 7 simply provides that, in instances where there is a conflict of customs and a question arises as to which custom or customs should prevail, the court is required to consider all the circumstances and adopt the custom that it is satisfied the justice of the case requires.

Apart from the adoption of custom into law under Schedule 2.1 of the Constitution, custom can also be taken into consideration to develop an appropriate underlying law, as the circumstances require, under Schedule 2.4 of the Constitution. Such circumstances are situations in which there are no available custom or principles of common law in relation to the particular issue before the court. In this instance, it is apparent that the court must do so "with due regard to the need for consistency" and ensure that the underlying law develops as a nationally coherent system. Hence, it will be quite proper to argue that the court would need to have evidence before it of an appropriate, almost country-wide prevalent custom. The difference in the use of custom in this instance and that under Schedule 2.1, as discussed above, is that here custom is not and cannot be adopted \textit{in toto} and applied as law but is only to be used by way of analogy by the courts to develop appropriate principles of underlying law, whereas under Schedule 2.1, custom can be adopted and applied as law.\(^{45}\)

\(^{43}\) See Scaglion R., "The Role of Custom in Law Reform" in De Vere, et. al., supra n.35 at p.31.
\(^{44}\) This approach is supported by the balance of authority and is in accord with the definition of custom under Schedule 1.2 of the Constitution. To require custom to be almost country-wide before it can be adopted and applied as law under Schedule 2.2 clearly counters the definition of custom under the Constitution and disregards the pluralist nature of custom in Papua New Guinea. Generally, see Jessep O., supra n.40 and Scaglion R., supra n.43.
\(^{45}\) See Srivastava D.K., supra n.35 at pp.84-96.
C. The Nature of Riparian Customary Landowner Claims in Papua New Guinea

Riparian customary landowner claims are dependent on and based upon the ownership of land held under customary land tenure: in particular, land abutting a watercourse. Particularly in Papua New Guinea, the subject matter is of a real significance, given the fact that a massive 93 percent of the land is held by customary landowner under customary land tenure law. Furthermore, a large majority of the people, estimated at 87 percent, live in the rural areas and are entirely dependent on the land and watercourses around them, which in many instances they “own” under customary law. Pitched against this background, particularly in the last decade or so, there have been increases in natural resources development activities in these rural areas, particularly in mining and petroleum and forestry. These have, in many instances, adversely affected the subsistence of these rural communities. In turn, these people are making compensation claims for the disruption and damages which these resource development projects have occasioned them. Some of these compensation claims have been cited in the introduction of Chapter 1.

The nature of customary riparian land owner claims and consequently, customary water use rights, cannot be properly understood and appreciated without having some background knowledge of the traditional social structures of Papua New Guinea societies. Therefore the analysis under this sub-heading begins with an overview of the social organisations in traditional Papua New Guinea societies followed by the analysis on nature of customary water rights.

1. Traditional Social Structures in Indigenous Papua New Guinea Societies

Whilst it is acknowledged that the social organisations in traditional Papua New Guinea societies are complex and differ from one area of the country to another, ethnographical accounts by many anthropologists clearly show that the main segmentary institutions or

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47 Supra n.5.
48 See supra at pp.3-7.
units are however the same. Ethnographic accounts of many Papua New Guinea societies show that a typical society is structured and segmented in units of lineages; sub-clans; clans; clan phraties; and tribes, in that order of ascendancy. A lineage is an unilateral descent group with a not-too-distant traceable genealogy; usually two generations back. It is obviously the next most minimal unit above the family. In patrilineal societies, membership to this unit is by agnatic descent, whereas in matrilineal societies, membership is by uterine descent. Usually, this unit may not hold property ownership rights independently from the sub-clan or clan, but may possess usufructuary rights only. In terms of the primary function of a lineage, it is more an economic unit than otherwise. A step above the lineage unit, many (perhaps not all) societies may have a sub-clan. Membership to a sub-clan may not necessarily be agnate. Non-agnates either through adoption or by other forms of associations may acquire membership. In many societies, it is however generalised that members of a sub-clan are of an apical ancestry. Sub-clans can, in some societies hold autonomous property rights.

It is perhaps true to say that the clan is the most important and more inclusive unit in all traditional Papua New Guinea societies today. The clan is a unilineal descent (i.e., one-line descent) group or unit whose members trace decent from an apical ancestor. In many instances however, genealogical links that connect the line of descent are usually not known. As is the case with a sub-clan, non-agnates may also acquire membership of a clan by various means (which differ from society to society) including, exchange of traditional wealth or various other alliances. Clans are the corporate institutions who own and control communal property such as land and other valued commodities including everything which occur on their land. Clan phraties, as groups of clans in alliance or long association, may also own property such as land in some societies of Papua New Guinea. Tribes, on the upper most segmentary structure may not claim common descent but are usually connected through a common language. Tribes are usually an alliance of clan phraties usually for militaristic purposes. Tribes, in many Papua New Guinea societies do not hold land. Land holding is usually with the clans. It is also fair to observe that tribes are more common in the highlands region of the country and clans or clan phraties are usually predominant in the coastal regions of the country. Nevertheless, it is impressed upon that for the purposes of

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50 Kessing ibid at p.150.
determining holding of customary water use rights, the clan unit as possessors of property rights, would normally become the institution of focus.

2. Customary Water Rights

In essence, riparian customary landowner claims are claims for compensation made by holders of “customary water rights”. The Water Resources Act Ch.205 does not use the term “customary water rights”, but the phrase “customary rights to the use of water” and defines that rather loosely as “rights to the use of water:–

a) that are authorised by custom; and

b) which are being availed of at the time in question or, in the normal course of land management, would be availed in a customary manner within a reasonable period after that time.”

From this definition, customary water rights can be broadly identified as the customary/indigenous riparian peoples’ right to have access to and utilise water and water resources for their daily sustenance in accordance with their own particular customs. Without being definitive or conclusive/exclusive, the following are some of the identifiable incidents of customary water rights:

- the right to draw water for drinking and other domestic use;
- the right to draw water for agricultural purposes including watering trees and tree crops, shrubs, plants, grass and gardens;
- the right to use rivers, lakes and/or creeks to fish for food for subsistence and commercial profit (i.e. artisanal fishing);
- for hunting for crocodiles and other marine creatures for subsistence and commercial profit;
- for customary spiritual ceremonies;
- to support their social, spiritual and cultural environments;

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51 Section 2 Water Resources Act Ch.205.
53 For example, certain parts of the rivers or lakes etc. are revered and respected as of spiritual and magical significance. In the Pidgin language, they are simply referred to as “pies meisalai” (i.e. areas in which spirits live). Generally, see Harrison S.J., “Magical Exchange of the Preconditions of Production in a Sepik River Village” (1988) 23(2) Man (n.s.) 319-333.
• to supply drinking water for animals;
• to replenish and augment top soils on the food plains;
• to supply the fundamentals of customary life; and
• the right to use the water ways for transportation.54

Ownership of riparian customary land is one basis upon which customary water rights are based. However, in some instances, customary water rights have been based on: (a) the fact of first discovering and continuous usage of, in particular, lakes and smaller watercourses concerned; and (b) the loss of an ancestor or a clan member in protecting and defending the territorial boundaries of the particular watercourse against inter-tribal attack and conquest. By and large, or at least in the Sepik and Ramu river areas, customary water rights are acquired and, in turn, recognised and accepted by other members of the community through these incidents.55

Just as where the ownership of customary land is vested in the clan in Papua New Guinea and the wider Melanesia, customary water rights are possessed by a clan or related clans. Individual members of the clan, or the clan’s associates merely exercise those rights from the clan.56 Ilinome Tarua, an eminent Papua New Guinan, explains that members of a clan normally share the same ancestral descent and enjoy similar rights and privileges which the clan emits.57

Riparian customary landowner claims to customary water rights and, in event of infringement of those rights, for compensation, indeed, do have statutory backing. In particular, s. 5 of the Customs Recognition Act Ch.1958 provides that “the ownership by custom of rights in, over or in connection with” a river or lake or “the ownership by custom of water, or of rights in, over or to water” can be pleaded and enforced in civil litigation. Then in similar fashion, under s. 5(2) of the Water Resources Act Ch.205,59 rights to use

55 Author’s field work notes. I spent three months (January - March 1996) in the Sepik and Ramu river areas doing field work.
57 Tarua ibid. According to Power, such rights and privileges are “conditional ownership” rights. “Conditional” because the individual clan members can have full enjoyment but cannot in any way dispose of such rights bypassing the clan: ibid at p.174.
58 Revised Laws of Papua New Guinea.
59 Revised Laws of Papua New Guinea.
water in accordance with custom by riparian customary landowners are recognised and
preserved. Section 16 of the Water Resources Act Ch.205 then provides for users of water
resources on customary land\(^{60}\) to pay compensation\(^{61}\) to customary riparian landowners for:

a) any deprivation of the use of and enjoyment of the surface of the land or any part of
   it, or of rights to water customarily associated with the land;

b) any damage to the surface of the land, any part of the land, any improvements on
   the land, or damage to any flora and fauna;

c) deprivation or severance of any right of easements; or

d) any consequential damages.

It is particularly interesting to note that the predecessors of the current legislation,
namely the Water Resources Ordinance 1962 and the Water Resources Act 1967
specifically addressed customary water rights/interests by addressing them under a separate
part of the legislation, namely Part IV: in the 1962 Ordinance, under the heading “Native
Interests”, and in the 1967 Act, under the heading “Customary Interests”. The legislative
scheme dealing with customary rights was, in general, that customary water use rights were
not affected, but provision was made for such rights to be terminated and replaced with
State-sanctioned licences in appropriate circumstances. The loss of customary water rights
or interference with customary water rights was a ground for compensation. In this
instance, s. 67(1) of the 1962 Ordinance and the 1967 Act (i.e. same section in both)
provided that:

“A native who establishes that he has suffered loss or damage by virtue of:-

a) the termination ... of his customary rights to the use of water; or

b) disturbances resulting from resettlement consequential on such a
   termination, is entitled to compensation for the loss or damage.”

It is my view that, if such provision existed under the current regime, customary water
rights would have been given prominence and, consequently, taken and addressed seriously
by those concerned. Hence, I venture to suggest that the Ok Tedi landowners’ law suit, the
Porgera gold mine arguments with the Porgera-Lagaip-Strickland riparian customary

\(^{60}\) Freehold or leasehold landowners are equally entitled.

\(^{61}\) I have addressed these in Kalinoe L., “Water Resource Management in Papua New Guinea:
Law, Policy and Practice” (1994) 1(2) Australasian Journal of Natural Resources Law and
Policy 195.
landowners and the Mali-Malilimi TRP disputes, as set out in the introduction at Chapter 1, may have been swiftly addressed and resolved.

Apart from the above stated compensation regime under the Water Resources Act, other resource-specific legislation which impacts on water and customary water rights also contain compensation provisions. Such are the Mining Act 1992 and the Petroleum Act Ch.198. Under s.154 of the Mining Act, a holder of a mining tenement is liable to pay compensation in the event that the mining or exploration activities cause damage or loss to landholders - i.e. including riparian customary landowners. In relation to the now ceased mining operations of the Bougainville Copper mine, Bedford and Mamak found:

“A villager from Darenai claimed that by dumping overburden into the Kawerong river, the company had deprived its clan of a natural source of protection in a section of the river where he had rights to fish. In Bougainvillean custom, rights to fish in specific parts of a river are acquired in much the same way as access to land is obtained. An Administration officer, supporting the plaintiff’s claim, submitted that all riverine life had been killed by pollution and, because of debris dumped in the river, its bed had changed, thus, rendering crossing much more hazardous than had formerly been the case. Because fishing rights, like land rights, were ‘held in trust for future generations’, it was proposed that annual payments to compensate for loss of fish be paid to all members of the clan affected.”

Compensation has since been paid for “loss of fish, drinking water, bathing and recreation.” In the particular case of the Pinei river people, Bougainville Copper Mine Ltd entered into agreement with them and paid “the sum of $18,000 (Eighteen Thousand Dollars) per year for the period 1st January, 1970 to 31st December, 1974 in full settlement of all claims by the people ... for loss of fish and other marine creatures from the Pinei

62 Supra at pp.3-7.
63 Revised Laws of Papua New Guinea.
64 It is, however, conceded that compensation in this instance is mainly for damage to the natural surface of land. However, in appropriate cases, compensation has also been paid for loss of fishing rights: See Bedford R. and A. Mamak, Compensation for Development: The Bougainville Case, Department of Geography, University of Canterbury, Christchurch (1977) at pp.149-150.
65 Ibid at p.48. The claims were made in the Mining Warden’s Court in May 1970. See also Eaton P., “Papua New Guinea” (1985) 2(2) EPLJ 176.
66 Ibid.
River caused in that period by the operations of the Company".67 Turning to the more recent period, the following compensation was granted to landowners of the Ok Tedi and Fly rivers for the loss of their customary land and water rights by the giant Ok Tedi Mining Ltd (OTML) under the Mining (Ok Tedi Restated Eighth Supplemental Agreement) Act 1995:

- a) K10,000,000 being compensation in respect of the period from and including the compensation of the Company’s operations to and including 31 December 1993;
- b) K4,000,000 for 1994;68
- c) about K4,200,000 for 1995;69
- d) about K4,531,845 for 1996;
- e) about K4,758,438 for 1997;
- f) about K4,996,360 for 1998;
- g) about K5,246,171 for 1999; and
- h) about K5,508,486 for 2000.70

After the year 2000, the compensation scheme will be reviewed.

In very similar terms to s.154 of the Mining Act, s. 81 of the Petroleum Act also provides for compensation to be paid to landowners (including customary landowners) who have suffered damage or loss as a result of the operations of the petroleum company’s activities. In particular, s. 81(2) provides that compensation is to be paid for:

“(a) the deprivation of the use and enjoyment of the surface of the land or any part of it or of any rights customarily associated with it, except where there has been a reservation in favour of the State of the right to such use and enjoyment; and
(b) damage -
   i. to the surface of the land or any part of it, or any improvements on it; or
   ii. to any trees, fish or animals ....” (Emphasis added).

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69 Clause 29B2 ibid.

70 Appendix 2, Schedule IV, ibid. The year for compensation purposes runs from 31 March 1996.
According to a recent study, the following compensation payments were made by a prospecting petroleum company for drill rigs rent, water rights and general damages:

<table>
<thead>
<tr>
<th>Areas</th>
<th>Drill rig rent</th>
<th>Water rights</th>
<th>Damages</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>K900.00</td>
<td>K400.00</td>
<td>K400.00</td>
</tr>
<tr>
<td>2</td>
<td>K800.00</td>
<td>nil</td>
<td>K400.00</td>
</tr>
<tr>
<td>3</td>
<td>K800.00</td>
<td>K300.00</td>
<td>K500.00</td>
</tr>
<tr>
<td>4</td>
<td>K600.00</td>
<td>K200.00</td>
<td>K300.00</td>
</tr>
</tbody>
</table>

Source: PNG Chamber of Mines and Petroleum.

One issue that remains to be addressed is that of whether customary water use rights are in fact and law property rights in rem.

3. Are Customary Water Rights “Property”? 

This topic is properly dealt with at Chapter 16 of this work. Hence, the following, albeit cursory, discussion serves as introductory only.

In essence, “property is an interest in a thing; either tangible or intangible, and its incidents are governed by the relationship between a person or a group of persons and the tangible or intangible thing. Tech and Dwyer explains that:

“Property in a thing is a bundle of rights, privileges and powers that a person has in the thing. The three most commonly identified are the right to use and enjoy a thing, the right to sell and alienate it, and the right to exclude others from its use. The right to exclude, in particular, is said to be the most critical without which no interest could be properly regarded as proprietary.”

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72 Adapted from Kuwimb, supra n.69.

73 See at pp infra.


It may not be sufficient to establish that property rights exist by only relying on one of
the above stated strands of the bundle of rights. This clear from the statement by Viscount
Simonds in *Belfast Corporation v. O.D. Cars*:

"... anyone using the English language in its ordinary signification would ... 
agree that "property" is a word of very wide import, including intangible and
tangible property. But he would surely deny that anyone of those rights which
in the aggregate constituted ownership of property could itself and by itself
aptly be called 'property'."

Considered against the above stated common law principles, could customary water use
rights be construed as property rights? According to those who subscribe to the
Hobbesian positivist school of thought, customary water use rights, particularly in the
pre-colonial era, would not because rights logically imply obligations, which can only be
maintained through the existence of the overwhelming power and authority of the State. In
the pre-colonial era, there was no such authority. The explanation for this is that custom
can settle disputes within a given community among a common membership which
subscribe to the custom, but custom will not determine and settle property claims and
property disputes between communities if there is no agreement as to the relevant custom.
Hence, as no superior authority like the State existed to legitimate and enforce obligations
derived from the customs of the original group, no corresponding rights can exist.

On the contrary, the Hobbesian argument can be properly disposed of by citing the
following:

"Property in the pre-capitalism era meant communal property. To
philosophers like Plato and Aquinas, things in our world were seen to belong
to humankind in general rather than to private 'owners'. Land was held in
common by all members of the community, each being entitled to use it to

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77 Hobbes T., *Leviathan: Or the Matter, Forme and Power of a Commonwealth Ecclesiastical and
78 Particularly in relation to the Melanesian context, see Lea D., *Melanesian Land Tenure in
Contemporary and Philosophical Context* University of America Press, Lanham 1997 esp. at
pp.75-88.
79 Tech and Dwyer, supra n.72 at p.1. Similar arguments are raised by Waiko J., *Land: Customary
Ownership vs State Control in Papua New Guinea And Australia*, UNSW Centre for South
Pacific Studies, Pacific Studies Monograph No.18 at pp.4-6. Note also these comments by
Locke: "... Men ... in society having property, they have a right to the goods, which by the Law
of the Community are theirs, that no Body hath a right to take their substance or any part of it
earn an income. The land was also distributed according to individual requirements. Property was thus a right to the private use of a thing but limited to considerations for the good of others and for the good of the thing itself. It may also simply be in forms for the public to enjoy, eg. public recreation grounds, temples and markets.

This concept of communal property still exists amongst the North American Indian tribes and also forms an integral part of the law in Papua and New Guinea. It still remains a way of life for Aboriginal people in Australia, their perception of property in the land being quite unlike anything in the common law world."

Returning to the question earlier posed: whether customary water rights are property rights measured against the common law yardstick, the answer is clearly in the affirmative. The actual ownership claims to these rights is asserted and is consequently vested in the corporate entity, the clan or tribe. The clan as a corporate entity retains the ultimate right to appropriate or otherwise deal with these rights. The clan or tribe as a corporate entity asserts and exercises exclusionary rights against others who do not belong to it or are not associated with it. The members of the clan in turn use and enjoy these rights.

In the case of *Fugui & Anor v. Solmac Construction Company Ltd, & Others* the Solomon Islands Supreme Court was faced with the question of whether a crop produced on customary land was “property”? In coming to its decision, it defined property in the context of customary ownership of land as “the thing to which a person stands in a certain

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This is, for example, explained by Nonggorr in relation to land: “No individual owns land. Land belongs to a clan, tribe or other land owning group. Individuals have rights to use land. The right is derived from membership of the group. Membership of a group could occur by birth or adoption”: supra n.69 at p.436. Hence, it is rather misleading to say that land is communally owned in the sense that it is owned by every one in a given community. In a given community, different clans or tribes exist, and it is those corporate entities who own land. Members of those clans or groups use and enjoy those lands etc... but from the clan or tribe.

See supra n.54 and n.56. This aspect persisted through all the areas that I conducted field work (in Sepik River, Ramu River, Angabanga River, Kairuku area, Brown River and Markham River) from January - April 1996. See the case studies of this work at Part III infra.

[1982] Solomon Law Report 100. Note that in *A.G. of Gambia v. Jobe* [1985] L.R.C. (Const) 556 it was held that the term “property is to be read in a wide sense ...”.

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relation, and also the relation in which the person stands to the thing.” It then went on to hold that a right to produce a crop was property or an “interest in or right over property.” With particular reference to the customary right to use water, as provided for under s. 5(2) of the Water Resources Act (PNG), a discussion and review report by Ward and Fordyce found that:

“... customary right to use water is property. Therefore, the Water Resources Act must recognise that interference with customary use of water must be compensated”.84

Furthermore, under s. 53(4) of the PNG Constitution, customary water rights are clearly a “right or interest in property” and, hence, protected from being unjustly abrogated. Most, if not all, of the legislation dealing with the exploitation of natural resources in PNG either expressly or tacitly recognises customary interests or rights of property over customary resource owners.85 That in itself is a clear enough indication of the extent to which rights associated with customary land ownership are treated in law as “property” just as customary water rights are. In any case, under s. 5(c) of the Customs Recognition Act, “the ownership by custom of water or of rights in, over or to water” (emphasis added) are recognised and can be pleaded in civil litigation in appropriate cases. Since the aborted law suit by the customary water rights holders of the Ok Tedi86 and Fly Rivers against BHP and Ok Tedi Mining Ltd, customary water rights will no doubt be seriously taken as “property” or “interests in property” by many people in Papua New Guinea.

D. Conclusion

Custom is law in Papua New Guinea.87 It is adopted and applied as part of the underlying law under Schedule 2.1 of the Constitution. The Customs Recognition Act, in rather limited circumstances, further provides for its recognition and application. Given the pluralistic nature of custom, in particular instances where there are conflicts of customs, s. 7 of the Customs Recognition Act provides a compromise solution. It says that, when a

86 This has been discussed above at p
matter is before a court as to which of two or more customs should prevail and the court is not satisfied on the evidence before it as to which custom to adopt, it is to consider all the circumstances of the case and may adopt the system that it is satisfied the justice of the case requires.

The above discussion of custom and customary law and the nature of riparian customary landowner claims at customary law leads to the conclusion that customary water rights are substantive legal rights first at customary law and secondly at statute law, namely s. 5(c) of the Customs Recognition Act, s. 5(2) of the Water Resources Act, s. 154 of the Mining Act and s. 81 of the Petroleum Act. Any breach of customary water rights (the incidents of which have been set out above) would, therefore, result in valid enforceable claims, as was attempted in Alex Maun and Others v. BHP and OTML in the Victorian Supreme Court.

88 W.S. No.6862 of 1994 and the related actions both in Victoria and the PNG National Court, one being Gagarimabu v. Minister for Mining and Petroleum, W.S. No.305 of 1995.
89 The lawsuits have since been settled out of court: See Chapter 1 at pp. 3 – 4 and Chapter 16 at p. 276.
Chapter 4

The Doctrinal Basis Of Water Rights Claims In Indigenous Communities

A. Introduction

This chapter discusses the various doctrines or bases upon which some indigenous peoples claim or assert water use rights outside the purview of those legislatively accorded water use rights, largely through the licencing process. The analysis is focused on the indigenous peoples of the Americas (i.e. North America), the Maori of New Zealand and, rather briefly, the Aborigines of Australia under the recent native title legislation. Before that happens, other wider doctrines under which water rights are exercised will also be considered in brief so that the discussion on indigenous water rights claims is viewed and kept in perspective and, where necessary, useful comparisons can then be made.

This chapter is necessary in order to give a doctrinal foundation to this thesis and is also useful for general comparative purposes. More importantly though, it is necessitated by the fact that, at the conclusion of this thesis, the doctrinal basis of the nature of customary water use rights in Papua New Guinea is to be contrasted and construed against the available or existing doctrines to test its veracity and reasonableness.

For purposes of these discussions, the following United Nations sanctioned working definition of indigenous communities for purposes of international action is adopted. That definition is as follows:

"Indigenous communities, peoples and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that developed in their territories, consider themselves distinct from other sectors of the societies now prevailing in those territories, or parts of them. They form, at present, non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories,
and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal systems ... On an individual basis, an indigenous person is one who belongs to those indigenous populations through self-identification as indigenous (group consciousness) and is recognised and accepted by those populations as one of its members (acceptance by the group).”

Adoption of this definition means that the term, “indigenous communities” cannot be strictly applied to a situation such as, for example, that existing in Papua New Guinea, where the pre-colonial societies are now themselves the rulers and there is an absence of a distinct and dominant sector of the society at large that predominantly engages in the administration of the nation state. Accordingly, it follows that the term “customary rights holders” is the preferred terminology to refer to the situation prevailing in Papua New Guinea, where the native people are assertive and determined to preserve, develop and transmit to future generations their ancestral territories, cultural patterns and social institutions. In spite of that, any reference to “indigenous person” on an individual basis bears the same meaning as that cited above in the UN sanctioned Cobo Report as clearly, the definition reflects the ordinary meaning of the term “indigenous person”. It is, nevertheless, submitted that the term “native person” bears the same meaning as “indigenous person” and, therefore, where appropriate, these terms will be used interchangeably in these discussions.

1. Introduction to Dominant Water Rights Doctrines at Common Law and the Americas

In a recent study of the evolution of water rights since early medieval England, North America and Australia, the authors eloquently state the concept of water rights in these terms:

“A water right can be widely defined as the right to use or enjoy the flowing water in a stream. It may emerge from a person’s ownership of land on the

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2 The UN document *ibid* is popularly referred to as the Cobo Report.

3 As for the "principles" (as opposed to the "concept") of water rights at common law, see Chapter 2, in particular at pp 15-23.
banks of the stream ("riparian ownership"), or from a person's actual use of the stream. It may be administered and controlled by a government agency, or it may not be administered at all, and be subject to enforcement only in the courts. A water right can also be created indirectly through a contract with a right holder.

Some water rights are quantitative, applying to a fixed amount of water, measured by rate of flow. Others set no limits so long as the holder does not reduce or pollute the flow available to other water right-holders on the stream. Some continue only as long as the holder continues his specific water use, while others continue whether he uses the water or not."4

As noted from the above quotation, water rights can accrue from at least three sources: (a) from the ownership of land on the bank of a water course (riparian rights); (b) from a person's actual use of the water course (use by prescription or prior appropriation doctrine); or (c) by the conferment of a statutory right (permit) by legislation. These will now be separately discussed, albeit, briefly.

(a) Riparian Rights

Riparian rights are incidents of the ownership and occupation of land abutting a watercourse. In this regard, a prominent English authority on water law, the late A.S. Wisdom, emphasised:

"For riparian rights properly so named to arise, the land must be in actual contact with the stream, laterally or vertically, and there is no distinction in principle between riparian rights on the banks of navigable or tidal rivers and on those of non-navigable rivers: North Shore Railway v. Pion (1889) 61 L.T. 525, P.C."5

Generally, riparian rights entitle the riparian owner or occupant to "receive the flow of water to his property undiminished in quantity and unimpaired in quality, subject to the rights of upstream riparian to abstract sufficient water for their domestic purposes. In addition, upstream riparian are entitled to use water for other than domestic purposes,

provided that they do not diminish perceptibly the flow of the stream and thereby interfere with the rights of other riparian.”6

Owing to its significance and relevance to Papua New Guinea,7 the riparian rights doctrine is separately considered in the next chapter, Chapter 5.8 The above brief treatment of the subject suffices for the purpose of this chapter.

(b) Prescriptive Easement to Use Water

Water use rights acquired through prescriptive easement are "acquired rights”, as distinct from the natural right to water which is enjoyed as an incident of the ownership of riparian land,9 as outlined above in (a). These rights are based on the ancient doctrine of prescription, which creates property right from long-term unchallenged use. Two commentators recently explained that:

“In technical terms, the basis of the modern prescriptive title is the presumed acquiescence of the owner of property to a newcomer's occupation or use of it. The owner's acquiescence is presumed from the time that he knew (or could be expected to have known) of the other's adverse use (against his interest), and could have stopped it, yet did not do so. It is important to make the distinction between presumed acquiescence and consent. If the owner consents to the occupation, his consent reinforces his own ownership under the law. But if he merely fails to object, the law is able to infer that he may have granted away his rights long ago.”10

These commentators go on further and observe:

“Indeed, the user's claim to prescriptive title became increasingly difficult to challenge the longer the use continued uninterrupted, because with the passage of time, evidence of original ownership or occupation became more elusive. Once established, the title gave the holder virtual freedom from legal action by

7 The common law of England as it stood before PNG attained independence on 16 September 1975 is adopted as part of the underlying law of Papua New Guinea under Schedule 2 of the Constitution.
8 See infra at pp 84.
10 Scott and Coustalin supra n.4 at p.841.
others and also allowed him to sue any other parties who interfered with it successfully."

Hence, the acquired right to use water through prescription, commonly referred to as prescriptive easement to use water, may give the holder a higher quality title in terms of greater security, as against other formal interests acquired through grant, contract or licence. Acquired rights through prescription can also be a burden on the natural rights enjoyed by riparian rights holders. This is apparent from the following: 

"[t]he easement is a right enjoyed over and above the natural right, and the burden of the easement involves, in general, a diminution of or detraction from the natural right."

The instances of prescriptive easements to use water are varied. Nevertheless, the following have been found to exist by the common law courts over the years: right to draw water from wells and springs on the land of another person, right to discharge rain water on another's land from spouts or eaves, right to increase the velocity of the stream, easement of water for turning a mill wheel, right to allow water to fall from one's land to that of another, right to pass along the bank of a millstream to repair banks and cut weeds, as to opening sluices to avoid flood, and, easements allowing pollution.

(c) The Doctrine of Prior Appropriation

This doctrine developed from the practice of early settlers, in particular from the customs of mining activities in the western United States of America. Essentially under this doctrine, water rights are "bestowed upon those who first diverted water to beneficial

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11 Id. at p.842.
12 Ibid.
13 Supra n.9.
14 See Race v. Ward (1855) 4 E&B 702, and White v. Taylor (No.2) [1969] 1 Ch. 160 or [1968] 1 All ER 1015.
16 See Williams v. Morland (1824) 2 B&C 910.
18 See Gibbons v. Lenfesty (1915) 84 L.J.P.C. 158.
19 See Long v. Gowlett [1923] 2 Ch 177.
21 See Wood v. Wand (1894) 3 Exch 748; Crossley & Sons Ltd v. Lightowler (1867) 2 Ch. App. 478; Wright v. Williams (1836) 1 M&W 77; A-G v. Dorking Union Guardians (1882) 20 Ch D 595 at 601 (CA); Baxendale v. McMurray (1867) 2 Ch. App. 790, and McIntyre Bros v. McGavin [1893] A.C. 268 (H.L.).
22 Supra n.6 at p.145 and Scott and Coustalin supra n.4, where it is noted at p.944 that: "The original version appeared in California as a by-product of the system of mining rights developed ... and in other states as a means of allotting water in dry-land ranching and perhaps irrigations."
use rather than those who [owned] riparian land." Water rights, ie. the right to use water and right to divert the flow of a stream, are acquired by the very act of so doing and in many instances, the right is to a specific volume of water taken at a specific location on the stream but is not appurtenant to the land. Being in the arid western US, this enabled the development of lands distant from watercourses and hence such appropriative rights naturally became transferable property rights.

Water use rights under this doctrine are deemed to be abandoned "if the user fails to continuously make 'beneficial use' of the amount of water he is entitled to use or divert." Some of the peculiar aspects of this doctrine are best summaries by Percy:

"In times of scarcity, the right to the continued use of the water depended upon the date at which labour had commenced on the diversion works, in order to protect investors in major works requiring considerable time to complete against loss of supply to intervening users. Thus the most recent appropriator on a given watercourse was the first to be required to close off his supply, followed by the other appropriators in reverse order of seniority. The senior appropriator was never required to shut off his supply and in times of extreme shortage, when all other appropriators have closed down, he was entitled to whatever flow remained."

B. Indigenous Water Rights Doctrines

Notwithstanding the position that the principles and doctrinal basis upon which most, if not all, indigenous societies of the common law world assert and claim land and in turn, water rights are commonly related; to the extent of nearly being of universal applicability; the particular historical and geo-political landscape of particular indigenous societies are varied and that in turn color, shape, or vary the application of the otherwise universally applicable principles. For example, the application of the doctrine of aboriginal title in Canada is characterised and shaped by the country's history of settlement and the terms of

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23 Supra n.6 at p.145.
24 See Scott and Coustalin supra n.4 at p.944.
25 However, nowadays: "Legislation and administrative procedures restrict this to protect return-flow users and for other policy reasons": ibid.
26 Ibid.
27 Supra n.6 at p.145.
such settlement if any. Likewise, the application of that doctrine in New Zealand or Australia is shaped or influenced by those countries' history of settlement and geopolitics.

In appreciation of that, what follows is not a general doctrine by doctrine analysis but rather a comparative country by country coverage of the existence and application of the various doctrines and principles pertinent to indigenous water rights.

It is perhaps appropriate in view of the overall implications of this thesis to begin these discussions by acknowledging to the following aptly expressed sentiment:

"... indigenous people have sought by treaty, constitutional amendment, legislation or in policy and practice to formally secure:

1. ownership of land, forest, waterway, sea and other natural resources in traditional areas in perpetuity;
2. protection and preservation of culture, language and sacred sites;
3. rights to pursue traditional fishing, hunting and gathering activities in these areas:
4. control of public, industrial or commercial access to aboriginal land;
5. control of, and receipt of benefits from, the exploitation of resources on or below the surface of their land ...".

And without much doubt:

28 The "common law world" refers to those countries which were part of the then British empire, resulting in the adoption and adaptation of the common law into those settlements, colonies and now countries.
29 For example, The Royal Proclamation of 1763 issued on 7 October 1763 by King George III of Britain, as reproduced in Elliott D., "Aboriginal Title" in B.D. Morse (edn.), Aboriginal Peoples and the Law: Indian, Metis and Inuit Rights in Canada, Carleton UP, Canada (1985) 49 at p.52-54. Also extensively discussed in Slattery B., The Land Rights of Indigenous Canadian Peoples, as Affected by the Crown's Acquisition of their Territories (D. Phil. thesis, Oxford U Faculty of Law 1979; reprinted, U of Saskatchewan Native Law Centre, 1979.
31 It wasn't until 1992 that aboriginal title was recognised in the form of "native title" by the High Court of Australia in Mabo v. Queensland (No.2) (1992) 175 CLR 1. Legislation to provide for the exercise of native title was enacted by the Commonwealth of Australia in the Native Title Act 1993.
32 Kayleen Hazlehurst made this comment with particular reference to the indigenous peoples of Canada, Australia and New Zealand, but it is in my view of universal applicability; see Hazlehurst, supra n.1 at the Preface, p.xiv.
"The 1990s, the United Nations' Decade for Indigenous Peoples, is proving to be a period of renewed vigor in assertion of indigenous identities and rights, continuing struggle against the repression and denial of these rights, and new challenges for people affected by the diverse contests over resources, places, identities, rights and alternative futures that involve indigenous peoples ..."33

And therefore, it is important to understand that:

"Relationships between indigenous peoples and nation states are fundamental in shaping indigenous futures. Control of resources of all kinds - land, water, minerals, timber, tourist sites, inland and offshore fisheries, cultural knowledge, education and language - is fundamental in shaping the power relationship between indigenous peoples and the nation states which claim their territories."34

The issues raised in this thesis will help in understanding the relationships between indigenous peoples or customary rights holders35 and the nation states in the struggle for the enjoyment and control of resources, in particular riparian land and water resources.

In keeping with the view expressed above in relation to the slight country by country circumstances that affect the otherwise universal application of various doctrines in relation to indigenous water rights, I will now conduct the following discussion on a country by country basis beginning with those doctrines available to the indigenous peoples of America (USA) reflecting the influence of that jurisdiction on the development of such doctrines in the other jurisdictions of the common law world. That will be followed by a review of the position in Canada, New Zealand and Australia. This sequence reflects the discourse on the status and maturity of the subject in these jurisdictions.

1. Indigenous Water Rights Doctrines in America

The doctrines under which the indigenous peoples of the USA, the American Indian tribes, assert/claim water rights in the main include these two doctrines: that of Indian Reserve water rights and Aboriginal Indian water rights, although it is admitted that the latter is rather a hope on paper only than the former. Perhaps it must also be mentioned at the outset that, particularly in the states of New Mexico, California and Arizona, some form

33 Howitt et.al., supra n.2 at Preface, p.v.
34 Ibid.
35 See the fine distinction made between "indigenous communities" and "customary rights holders" as in the case of Papua New Guinea in the introduction to this Chapter at p 51.
of aboriginal water rights are also known as pueblo water rights. These are essentially water rights derived from grants of land and water rights from early Spanish explorers and Mexican sovereigns who "settled into civil pueblos, established religious missions, and set up military and presidial towns in the New World." In here however, I do not treat these rights, ie. pueblo water rights, as aboriginal water rights for the reason that these rights are not based on or derived from utilisation or ownership of riparian land and watercourses by indigenous peoples from time immemorial but are derived from grants by early explorers and settlers who were not indigenous peoples themselves. I will now separately discuss the doctrines of Indian Reserve water rights and Aboriginal Indian water rights.

(a) Indian Reserve Water Rights

Indian Reserve water rights are rights conferred on native/indigenous American Indian communities by a federal judicial decision in 1908 by the United States Supreme Court in Winters v. United States where it was held that when the United States established Indian reservations, the tribes and the United States implicitly reserved sufficient water to fulfill the purposes of the reservations. In that case, the United States sought to restrain Henry Winters and others from interfering with or preventing the flow of the Milk River in the State of Montana from reaching the Fort Balknap Indian Reservation by constructing dams or reservoirs and maintaining them. The agreement that established the Fort Balknap Indian Reservation was ratified by a United States Act of Congress on May 1, 1888, where inter-alia, the Milk river, a non-navigable stream was designated as the northern boundary of the reservation. There was however no express provision in the agreement relating to water use rights. Nevertheless, in its own language, the court said:

Generally, on pueblo water rights see Feliz v. City of Los Angeles 58 Cal. 73 (1881), where the California Supreme Court upheld and gave senior priority and right to (under the prior appropriation doctrine) the pueblo water rights of the City of Los Angeles. See also Hutchins, "Pueblo Water Rights in the West" (1960) 38 Texas Law Review 748; and Comment, "Pueblo Indian Water Rights: Who Will Get the Water? New Mexico v. Aamodt" (1978) 18 Natural Resources Journal 639, and Dumars T., O'Leary and A. Utton, Pueblo Indian Water Rights, U of Arizona Press, Tucson (1984).


"In the construction of this agreement there are certain elements to be considered that are prominent and significant. The reservation was a part of a very much larger tract which the Indians had the right to occupy and use and which was adequate for the habits and wants of a nomadic and uncivilized people. It was the policy of the Government, it was the desire of the Indians, to change those habits and to become a pastoral and civilized people. If they should become such the original tract was too extensive, but a smaller tract would be inadequate without a change of conditions. The lands were arid and, without irrigation, particularly valueless. And yet, it is contended, the means of irrigation were deliberately given up by the Indians and deliberately accepted by the Government. The lands ceded were, it is true, also arid; and some argument may be urged, and is urged, that with their cession there was the cession of the waters, without which they would be valueless, and 'civilized communities could not be established thereon'. And this, it is further contended, the Indians knew, and yet made no reservation of the waters. We realize that there is a conflict of implications, but that which makes the retention of waters if of greater force than which makes for their cession. The Indians had command of the lands and waters - command of all their beneficial use, whether kept for hunting, 'and grazing of their stock', or turned to agriculture and the arts of civilization. Did they give up all these? Did they reduce the area of their occupation and give up the waters which made it valuable or adequate?"40

Of course the Supreme Court held that the water rights of the Indians on the Milk River were reserved and on the part of the United States Government, this was done so on 1 May 1888, when the Congress ratified the agreement.

One commentator, on the Winters v. United States41 decision, has in my view forcefully argued that "[b]y implications, the reservation of land required a water right sufficient to fulfill the purposes for which the reservation had been created. These rights could not be lost by non-use, could expand over time, if new uses demanded additional water and had priority as of the date on which the reservation was created."42 This of course means that in
those states where prior appropriation doctrine exist, Indian reserve water rights will not be affected by it (ie. the prior-appropriation doctrine).

In the *Winters* Case, the Supreme Court did not quantify the Indian reserved water rights. This was done in 1963 in *Arizona v. California* where the Colorado River Indian tribes' Winters rights were quantified on the basis of the reservation's practicably irrigable acreage (PIA). This meant that the quantity of water which the tribes were entitled to under Winters must be sufficient to satisfy the purpose of the reservation. The PIA standards are measure of rather than a limit on the exercise of the Winters rights.

In instances where reservations were set aside to protect hunting and fishing grounds rather than for agriculture, under the Winters Doctrine that also means that water will have to be made available for those purpose. This of course implies the right to an acceptable level of instream flow to sustain the fish and other aquatic resources which the native Indians harvest. In this regard, the Ninth Circuit's comments in affirming the District Court's decision in *United States v. Adir*, are apt:

"where, as here, a tribe shows its aboriginal use of water to support a hunting and fishing lifestyle, and then enters into a treaty with the United States that reserves this aboriginal use ...".

Since native American/Indian water rights under the Winters Doctrine "exist as a matter of property law, co-existing with Indian rights to reservation land," and hence such water rights being appurtenant to the reservation land, could these rights be viewed as a modified form of riparian rights? In spite of the similarities, the answer would have to be negative.

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43 See the brief discussion on the doctrine in the introduction to this Chapter: pp 54-55 supra.
Commenting on the question of the PIA standard, Sylvia F. Liu observes:
"While the court did not explain what it meant by PIA, at least one state used three factors to quantify the irrigable acres on a reservation: 1) arability of the land; 2) engineering feasibility of irrigation projects; and 3) economic feasibility of irrigation projects, which essentially consists of a cost-benefit analysis.": supra n.39 at p.430.
For a useful analysis of PIA, including the criticisms against it, particularly that PIA standards may not represent the proper needs of native Indians since the water awards are rather based on large-scale agricultural project requirements which may or may not be feasible on a given reservation, see Franks M.C., "The Uses of the Practically Irrigable Acreage Standard in the Quantification of Reserved Water Rights" (1991) 31 *Natural Resources Journal* 549.
46 Supra n.42 at p.67.
48 723 F.2d at 1414 (1979).
simply because Indian reservations may or may not be created on the banks of a river and, in either instance, Winter rights would still apply. This therefore means that water from a nearby watercourse would still have to be made available. This is to say, Winters water rights are the necessary consequence of the creation of a reservation rather than riparian land.  

There appears to be some consensus among commentators that Indian water rights are property rights. In this regard, the following observations are aptly made:

"Federal law regarding Indian treaty interpretations in general also compels the conclusion that a Winters right is a vested property right to water without restrictions on use other than avoidance of waste. Thus, any significant use restriction imposed on Winters water is inconsistent with federal law and may constitute a compensable taking."  

(b) Aboriginal Indian Water Rights

Aboriginal Indian water rights are rights which inhere in aboriginal/native American Indian people by virtue of their occupation of lands and waters and their utilisation from time immemorial. These forms of water rights are founded on the concept of aboriginal title which is first articulated by Marshal, C.J. of the US Supreme Court in *Johnson and Graham's Lessee v. McIntosh* in these terms:

"On the discovery of this immense continent, the great nations of Europe were eager to appropriate themselves so much of it as they could respectively acquire. Its vast extent offered an ample field to the ambition and enterprise of all; and the character and religion of its inhabitants offered an apology for considering them as a people over whom the superior genius of Europe might claim an ascendancy. The potentates of the old world found no difficulty in convincing themselves that they made ample compensation to the inhabitants of the new, by bestowing on them civilisation and Christianity, in exchange for

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50 Although based on different reasoning, one commentator has observed: "The definition of the Indian water right as a riparian right is a fallacy rather than a useful legal fiction.": ibid at p.782.
51 For example, see supra n.47 and n.49.
52 Walker and Williams, supra n.45 at p.435.
53 And according to Merrill: "An aboriginal water right, one which was the first of its kind in a region, is based on the use of water from earliest days. While aboriginal in a relative term, the existence of a water right which predates federal sovereignty is sufficient to render that right aboriginal vis-a-vis the United States. Philosophically, aboriginal rights rest on the familiar 'first in time, first in right' dictum which governs prior appropriation water law": supra n.37 at p.45.
54 21 U.S. (8 Wheat) 543 (1823) at pp.573-574.
unlimited independence. But, as they were all in pursuit of nearly the same object, it was necessary in order to avoid conflicting settlements, and consequent war with each other, to establish a principle which all should acknowledge as the law by which the right of acquisition, which they all asserted, should be regulated as between themselves. This principle was that discovery gave title to the government by whose subjects, or by whose authority, it was made, against all other European government, which title might be consummated by possession. The exclusion of all other Europeans necessarily gave to the nation making the discovery of the sole right of acquiring the soil from the natives, and establishing settlements upon it. It was a right which all asserted for themselves, and to the assertion of which, by others, all assented.

Those relations which were not to exist between the discoverer and the natives, were to be regulated by themselves. The rights thus acquired being exclusive, no other power could interpose between them.

In the establishment of these relations, the rights of the original inhabitants were, in no instance, entirely disregarded: but were necessarily, to a considerable extent, impaired. They were admitted to be the rightful occupants of the soil, with a legal as well as a just claim to retain possession of it, and to use it according to their own discretion; but their right to complete sovereignty, as independent nations, were necessarily diminished, and their power to dispose of the soil at their own will to whomever they pleased, was denied by the original fundamental principle that discovery gave exclusive title to those who made it.

While the different nations of Europe respected the right of the natives, as occupants, they asserted the ultimate dominion to be in themselves; and claimed and exercised, as a consequence of this ultimate dominion, a power to grant the soil, while yet in possession of the natives. These grants have been understood by all to convey a title to the grantees, subject only to the Indian right of occupancy."

From the above, it must be emphasised that Chief Justice Marshall found that when the new world was discovered, the discoverers conceded and acknowledged the natives/Indians/aborigines to be rightfully and legally in possession of their land and to use
it according to their discretion, except that the natives’ power to dispose of their land to whomever they pleased was denied by the principle that discovery gave exclusive jurisdiction/sovereignty to those who made it and therefore necessarily restricted to the discoverer.

Chief Justice Marshall again had to adjudicate on the question of aboriginal title in *Worchester v. State of Georgia* and his Honour said:

"America, separated from Europe by a wide ocean, was inhabited by a distinct people, divided into separate nations, independent of each other and the rest of the world, having institutions of their own, and governing themselves by their own laws. It is difficult to comprehend the proposition that the inhabitants of either quarter of the globe could have rightful original claims of dominion over the inhabitants of the other, or over the lands they occupied; or the discovery of either by the other should give the discover rights in the country discovered which annulled the pre-existing rights of its ancient possessors."\(^\text{55}\)

After devoting some paragraphs to the relevant principles of international law accepted amongst the great maritime powers of Europe of the 16th Century that "discovery gave title to the governments by whose subjects or by whose authority it was made, against all other European governments, which title might be consummated by possession", Chief Justice Marshall continued:

"The principles, acknowledged by all Europeans, because it was the interest of all to acknowledge it, gave to the nation making the discovery, as its inevitable consequence, the sole right of acquiring the soil and making settlements upon it. It was an exclusive principle which shut out the right of competition among those who had agreed to it; not one which could annul the previous rights of those who had not agreed to it. It regulated the right given by discovery among the European discoverers, but could not affect the rights of those already in possession, either as aboriginal occupants, or as occupants by virtue of a discovery made before the memory of man. It gave the exclusive right to purchase, but did not found that right on a denial of the right of the possessor to sell."\(^\text{56}\)

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\(^{55}\) 31 U.S. (6 Pet.) 515 (1832) at pp.542-544.  
\(^{56}\) Ibid.
Hence, aboriginal rights, particularly in this instance, aboriginal water rights, stem from the native tribes' original occupation and dominion over the land and water for centuries before the Europeans arrived. Therefore, subject only to the right of extinguishment held by the United States "[a]boriginal title provides the original natives of this country the exclusive right to occupy the lands and waters used by them and their ancestors before the United States asserted its sovereignty over these areas (Yankton Sioux v. State of South Dakota, 796 F.2d 241, 243 [8th Cir. 1986], cert. denied, 483 U.S. 1005[1987])."

2. Indigenous Water Rights Doctrines in Canada

Sharing similar historical and jurisprudential attributes with the United States on the subject, indigenous water rights in Canada are either based on the creation of a reservation by treaty or stem from aboriginal title. Hence, indigenous/aboriginal water rights in Canada are based on either of the following:

(a) "Indian water rights" - the rights to water possessed by Indian bands upon the establishment of a reserve; or

(b) "Aboriginal title to water" - the concept of rights to water as an aspect of aboriginal title.

These will be separately considered. But before that ensues, it must be mentioned at the outset that the jurisprudential developments on the subjects are largely influenced by the United States jurisprudence of Winters water rights and aboriginal title, in particular the locus classicus Johnsons v. McIntosh where the necessary excerpts from both cases have been quoted at length above.

57 See also supra n.37 at p.47.
58 Supra n.47 at p.72. See also the Ninth Circuit's decision in United States v. Adair (723 F.2d 1394, 1413 (1983), cert. denied, 467 U.S. 1252 (1984), as cited at supra n.47 p.70: "Within its domain, the tribe used the waters that flowed over its land for domestic purposes and to support its hunting, fishing and gathering lifestyle. This uninterrupted use and occupation of land and water created in the tribe aboriginal, or "Indian", title to all its vast holdings ... (including) an aboriginal right to the water used by the tribe as it flowed through its homeland."

The authors of a text, Dumars C.T., M. O'Leary, & E.A. Utton, Pueblo Indian Water Rights, U of Arizona Press, Tucson (1984) note at p.16 that: "The aboriginal water rights theory has great appeal because of its strong underpinning in United States Supreme Court case law."

59 For an in-depth coverage on the topic, see Bartlett R.H., Aboriginal Water Rights in Canada: A Study of Aboriginal Title to Water and Indian Water Rights, Canadian Institute of Resources Law, U of Calgary (1988).
60 "Significantly, the history of aboriginal peoples and their relationship to governments in the United States, and the development of water projects and water law in the United States, closely
(a) Indian Water Rights

These are water rights which the native people, the Indian peoples of Canada, have by virtue of the creation of a reservation mainly by treaty. Such water rights were either expressly reserved or are necessarily implied by considering the purposes and intention behind the establishment of the particular reservation. For example, the British Colombia Supreme Court in *Saanichton Marina Ltd v. Claxton* did not hesitate to enforce the right to water implicit in the treaty of an Indian band to "carry on their fisheries as formerly" by issuing an injunction to restrain the construction of a marina in waters of the reserve which may have interfered with the Indian bands right to fishery. Furthermore, the following observations by Bartlett is a neat summation:

"The treaties and agreement with Indians in Canada promised lands for farming and other developments, and the maintenance of hunting, trapping, and fishing. Ordinary principles of interpretation require that water rights be implied in the undertakings given by the Crown. Without water rights, the promise made by the Crown cannot be fulfilled."

After exhaustively canvassing the topic of Indian water rights by reviewing the case law, both Canadian and the US, and reviewing some of the treaties that made the reservation of aboriginal rights, Bartlett draws the following pertinent conclusions:

(a) when reserve lands were created, appropriate water rights were also accorded either expressly or impliedly to ensure the aboriginal peoples proper settlement and economic development, especially by farming and the retention of traditional means of sustenance; and

(b) that Canadian law recognises a treaty right to water for traditional and contemporary uses by the Indians as initially articulated in the Winters doctrine.

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61 Ibid. at p.6.
62 For example, the reservation made the Mississauga Indians in 1805: "Reserving to selves and the Mississauga Nation the sole right of the fisheries ... together with the flats or low grounds on said creeks and rivers, which we have hereto cultivated and where we have our camps." as cited at supra n.59 at p.23.
64 Id. at p.35.
65 Id. at pp.51-53.
Aboriginal title to water is a type of aboriginal right\(^{66}\) that inheres in Aboriginal people from the exclusive occupation and utilisation of riparian land and water including fishery.\(^{67}\) And according to a respected authority on the subject, Professor Slatery, the "doctrine of aboriginal rights is a basic principle of Canadian common law".\(^{68}\) There are numerous judicial dicta for this view but one that is of a higher authority is from Chief Justice Dickson of the Supreme Court of Canada uttered in Guerin v. The Queen\(^{69}\) where his honour declared that previously in Calder v. Attorney General of British Colombia\(^{70}\) the court "recognized aboriginal title as a legal right derived from the Indians' historic occupation and possession of their tribal lands".\(^{71}\) With the advent of Constitution Act 1982, aboriginal rights are now constitutionally recognised and affirmed under s.35 in these terms:

"(1) The existing aboriginal and treaty rights of the aboriginal peoples of Canada are hereby recognized and affirmed.

(2) In this Act, 'aboriginal peoples of Canada' includes the Indian, Inuit and Metis peoples of Canada".

On the issue of whether aboriginal title includes a right to water, Bartlett, after referring to the dicta of Hall J in Calder v. Attorney General of British Colombia,\(^{72}\) in my view, accurately concludes: "As Hall, J., indicates, the use of water was an integral part of the 'historic occupation and possession' of the territory. A right to water is accordingly an

\(^{66}\) "Generally it may be said of aboriginal rights, however, that they are distinct from aboriginal title; that is, they extend broadly to rights of custom and self-government, not normally considered to be incidents of aboriginal title. The term may also include specific property rights which now form or previously formed a part of aboriginal title. In other words, even though the aboriginal title of a people may have been extinguished, they might still have aboriginal rights."


\(^{69}\) [1985] 1 C.N.L.R. 120.


\(^{71}\) Supra n.69 at p.132.

\(^{72}\) Supra n.70 "... a usufructuary right and a right to occupy the lands and to enjoy the fruits of the soil, the forest and the rivers and streams ..." per Hall J. at DLR p.174.
integral part of aboriginal title. It includes and does not distinguish between land and water. Both were central to traditional aboriginal life.\(^{73}\)

3. Indigenous Water Rights Doctrines in New Zealand

Indigenous water rights in New Zealand can be claimed by the Maori people (the indigenous people) under either of two bases: (a) on the basis of the Treaty of Waitangi concluded between the confederation of Maori Tribes and the British Crown in 1840, and (b) by the doctrine of aboriginal title at common law.\(^{74}\) At the outset, it must be mentioned that the Treaty of Waitangi was not declaratory of aboriginal title and therefore "Treaty rights and aboriginal title rights subsist side by side".\(^{75}\) Hence, either avenues may be pursued independent of the other. The two will now be considered separately.

(a) Treaty of Waitangi based Water Rights

The pertinent clause of the Treaty of Waitangi 1840 for our purposes is Article the Second which reads:

Her Majesty the Queen of England confirms and guarantees to the Chiefs and Tribes of New Zealand and to the respective families and individuals thereof the full exclusive and undisturbed possession of their Lands and Estates, Forests, Fisheries, and other properties which they may collectively or individually possess so long as it is their wish and desire to retain the same in their possession; but the Chiefs of the United Tribes and the individual Chiefs yield to Her Majesty the exclusive right of Pre-emption over such lands as the proprietors thereof may be disposed to alienate at such prices as may be agreed upon between the respective proprietors and persons appointed by Her Majesty to treat with them in that behalf.\(^{76}\)

Even though the "Treaty of Waitangi has never been part of the municipal law of New Zealand ... the whole scheme of legislation which has from time to time been enacted with respect to Maori land has been designed to implement

\(^{73}\) Supra n.59 at p.7.
\(^{74}\) See Boast R.P., "Treaty Rights or Aboriginal Rights?" (1990) New Zealand Law Journal 32, although Boast does not specifically deal with water rights. At p.34, Boast notes that "the principles of the Treaty and the principles of the aboriginal title rules are distinct."
\(^{75}\) Ibid.
the provisions of Article 2 of the Treaty of Waitangi". This statement was particularly true for the period before the enactment of the Treaty of Waitangi Act 1975. The Treaty of Waitangi Act then "provide for the observance, and confirmation, of the principles of the Treaty of Waitangi by establishing a Tribunal to make recommendations on claims relating to the practical application of the Treaty and to determine whether certain matters are inconsistent with the principles of the Treaty".

Hence, with the establishment of the Waitangi Tribunal, indigenous water rights claims can now and are now being pursued through this avenue. Note however that the Tribunal only hears claims and reports to the Crown by making non-binding recommendations. Notwithstanding that drawback in following this route, this vision by Boast is worth pondering upon:

"The Treaty of Waitangi, once recognised and given effect to, allows for a truly bicultural approach to the law to develop in a way that the aboriginal title rule - which is but a rule of the common law itself - never could do. The Treaty has value as a symbol: we can give meaning to it and it can give meaning to us".

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77 Haughey E.J. "Maori Claims to Lakes, River Beds and the Foreshore" (1966) 2 New Zealand Universities Law Review 29 and, in this regard, the numerous cases cited and discussed therein. Note in the 1877 case of Wi Parata v. The Bishop of Wellington (1877) 3 N.Z. Jur. Rep. 72, Chief Justice Prendergast referred to the treaty as a "simple nullity". This attitude by the New Zealand Courts did not change until the 1986 case of Te Weehi v. Regional Fisheries Officer (1986) 1 NZLR 680.


79 For example, the claims of the Tainui Tribes to the Waikato River, which eventually ended up in the High Court in 1987: See Mahuta R.T., "Maori Land and Resources Issues in New Zealand", Henningham and May (eds.), Resource Development and Politics in the Pacific Islands, Crawford House, Barthurst (1992) 195 at 202.

80 McHugh P.G., "The Role of Law in Maori Claims" (1990) New Zealand Law Journal 16 at p.17. See also the Muriwhenua case, infra.

81 Supra n.74 at p.36. Note the following observations made by the New Zealand Court of Appeal in Te Runanga O Muriwhenua Inc. v. A-G [1990] 2 N.Z.L.R. 641 in relation to Maori fishing rights as recognised by s.88(2) Fisheries Act 1983 (quoting from the headnotes at p.643):

"(ii) The Treaty is a living instrument. It might be incorporated in the Maori Fisheries Act 1989, one of the purposes of which was to make better provision for the recognition of Maori fishing rights secured by the Treaty. There was, however, no suggestion that that Act was proffered in complete substitution for rights under the Treaty or the common law as to customary title. The Treaty had to be applied in the light of developing national circumstances. One of these circumstances might be the overfishing of traditional Maori fishing grounds which had created a situation not foreseen at the time of the Treaty. The question before the High Court might therefore be whether the provisions of the Maori Fisheries Act where a sufficient translation or expression of traditional fishing rights. The Court's task in these cases would be to
(b) Aboriginal Title based Water Rights

At New Zealand common law, the distinction between "aboriginal title" and "aboriginal rights," as is the case in the Canadian common law as seen above, is not clearly articulated hence resulting in the situation that the terms bear the same meaning and are hence used interchangeably. The rationale behind this appears to be that property rights are but one of many inter-related rights which flow from aboriginal title. Hence, in this particular part of the thesis use of these terms reflect that position. (But elsewhere throughout this thesis, the Canadian approach is preferred).

Perhaps the most authoritative articulation of the aboriginal title doctrine in recent times in New Zealand is that presented by the Court of Appeal in Te Runanganui O Te Ika Whenua Inc Society v. Attorney-General. The pertinent parts of that articulation will be referred to later. Since the facts are of some relevance, they are briefly presented here. The appellants represented certain Maori people who had interests in the Rangitaiki River and Wheao River had lodged a claim with the Waitangi Tribunal. The Tribunal had issued a report recommending that the relevant (hydro) electricity authorities who generated hydro power from the damming of these rivers should not be corporatised by virtue of the Energy Companies Act 1992 until the Tribunal had heard the substantive claim to the rivers. The appellants accordingly sought judicial review in the High Court seeking an interim declaration that the Minister for Energy not approve any corporatisation plans by the relevant electricity authorities and allow the subsequent transfer of the dams because that may prejudice the appellant claims pending in the Waitangi Tribunal. The interim relief sought was refused on purely administrative law grounds hence the appeal to the Court of Appeal. The appellants claimed that they had property rights in the rivers and alleged that the transfers would prejudice those rights, based on the doctrine of aboriginal title. At the hearings before the High Court, the claim based on aboriginal title was not pursued but was now argued for the first time before the Court of Appeal.

interpret and apply the legislation taking into account the realities of life in present-day New Zealand, in a balancing and adjusting exercise."

82 See supra n.66.
85 Ibid.
The appellants lost the appeal on the narrow\(^86\) reasoning that Maori had no right to generate hydroelectric power either at aboriginal title, or under the Treaty of Waitangi, or any statute law. Consequently, there could be no legal objection to any transfer of the dams. Hence, interim relief was declined.

In spite of the outcome, the Court of Appeal did indeed take the opportunity to articulate the aboriginal title doctrine in these terms:

"Aboriginal title is a compenious expression to cover the rights over land and water enjoyed by the indigenous or established inhabitants of a country up to the time of its colonisation. The expressions "aboriginal title" and "Maori customary title" are interchangeable in New Zealand. On the acquisition of the territory, whether by settlement, cession or annexation, the colonising power acquired a radical or underlying title which goes with sovereignty. In the absence of special circumstances displacing the principle, the radical title is subject to existing native rights. These native rights cannot be extinguished (at least in times of peace) otherwise than by the free consent of the native occupiers, and then only to the Crown and in strict compliance with the provisions of any relevant statutes. The nature and incidence of aboriginal title are matters of fact dependent on the evidence in any particular case and on the approach of the Court considering the issue. The Treaty of Waitangi 1840 guaranteed to Maori, subject to British kawanatanga or government, their tino rangatiratanga and their taonga. In doing so the treaty must have intended effectively to preserve for Maori their customary title."\(^87\)

And in the particular circumstances of this case:

"However liberally Maori customary title and treaty rights might be construed, they were never conceived as including the right to generate electricity by

\(^{86}\) To refuse the relief sought on the sole point that Maori had no rights in hydro-electric dams is, in my view, too narrow. Other issues such as the effect of the continued operations of the dams on their other water rights and their proprietary interests in those other water use rights should have been legitimate enough to be considered, as was done by the Canadian Supreme Court in Kanatewat v. James Bay Development Corporation [1974] R.P. 38, as cited in Elliott D., "Aboriginal Title" in Morse B. (ed.), Aboriginal Peoples and the Law: Indian, Metis and Inuit Rights in Canada, Carleton University Press, Canada (1985) 49 at pp.78-79.

\(^{87}\) Supra n.84.
harnessing water power. Nor had any statute preserved or assured to Maori any right to generate electricity by the use of water power".88

One commentator on the *Te Ika Whenua Case*, has usefully, and in my view validly, observed that the case has wider significance, in particular for the proposition that "aboriginal title can be successfully used in Maori claims for ownership of New Zealand waterways, through claims for water, instead of the lands".89 In the commentary, the commentator has legitimately gone on to reason at length that:

"Presuming that a Maori claim for a waterway could succeed under aboriginal title, what could Maori do with the waterway? Under aboriginal title, it would seem that Maori would only be entitled to use the waterway in accordance with the Maori custom and tradition. Ultimately, a claim could only succeed if Maori could in fact show that rights of use in the waterway were in some way integral or vital to their culture. So, commercial development of a waterway, and rights that gives rise to, are unlikely to be allowed or 'protected' under aboriginal title. Again, electricity generation is illustrative: this is clearly a non-traditional use [hence the courts refusing to recognise it under the aboriginal title doctrine]. However, interestingly enough, Cooke P. [at p.27 of the case] suggests that Maori may be able to mount an argument that 'some form of payment be made for the right to obstruct the flow of the rivers.' This is in line with the indirect-benefit-from-development idea ... Therefore, if a right to use a river - in a traditional manner - can be established, Maori may extract a payment from parties who have or wish to suspend or deprive them of this right of use; such parties may perhaps seek to develop the waterways themselves. In *Te Ika Whenua*, the electricity via harnessing the waterflow, may be seen to be depriving or interfering with the exercise of the appellants' alleged traditional right of use in the rivers, including eeling. Hence, though the appellants may not themselves be entitled to generate electricity, they may

88 Ibid. The danger with the approach taken by the Court of Appeal in this case is that aboriginal rights may be viewed as being frozen at the time of white settlement. Hence: "Adopting this theory [i.e. frozen rights] would mean assuming that Aboriginal rights may be defined by reference to federal and provincial regulations rather than by reference to the society and culture in which they are rooted. This approach is fundamentally inconsistent with the principle of adhering to the Aboriginal perspective when considering these rights. It would be odd to suggest that non-Aboriginal laws could determine what was 'integral to their distinctive culture'.": Bowker supra n.67 1 at p.5.

still be able to demand a payment for the energy companies' privilege of doing so."

Particularly in New Zealand, there is a long history since European settlement of various Maori tribes making claims not only to water but the ownership of waterways, i.e., rivers and lakes in particular as an incidents of their "aboriginal or Maori customary title" to land that stems from their original and continued occupation of such lands and waters. Most of such claims are usefully discussed by Haughey in "Maori Claims to Lakes, River Beds and the Foreshore". In here I will only refer to the long running ownership claims by the various Maori tribes to the beds of the Wanganui River. The first in the trilogy of cases is The King v. Morison (1949). The background of this case is that in early 1938 an application was made to the Maori Land Court (initially Native Land Court) by the relevant Maori tribes claiming that such portion of the bed of the Wanganui River was their customary land held under native/aboriginal title. At the Land Court hearing, the court was invited by the applicants' counsel to state whether or not at the time of the Treaty of Waitangi the bed of the river was land held by the native Maori under aboriginal title. The Land Court obliged and after hearing evidence and arguments, made an interim ruling in September 1939 that the bed of the said river was so held by the appropriate Maori tribes under aboriginal title. The Crown then appealed against this ruling to the Maori Appellate Court (then Native Appellate Court). In December 1944 the Appellate Court dismissed the Crown's appeal. That cleared the way for the Maori Land Court to proceed further with the native/aboriginal title investigation to determine whether or not the bed of the said river remained customary land within the meaning of the Maori Land Act 1931, i.e., land being vested in the Crown but is held by Natives or descendants of natives under the custom and usages of the Maori people - and if so, to determine the owners thereof.

It is against this background that the Crown in King v. Morrison sought writs of prohibition and certiorari in respect of the Land Court proceedings in the Supreme Court before Hay J. His honour found that:

"When Land Transfer titles are in existence with regard to all or most of the lands forming the bank of a river, and the claim on the part of the Crown is that the registered proprietors are presumptively entitled, by virtue of those

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90 Ibid. at p.43.
91 Supra n.77. See also supra n.83.
93 Ibid. at p.252 per Hay J.
94 Supra n.92.
titles, to half the river-bed, the appropriate tribunal to decide the matter, which
is one of law and not of fact, is the Supreme Court, and not the Maori Land
Court, as the question in issue is not an investigation of title by the Maori Land
Court in the ordinary sense."

Accordingly judgment for the issue of a writ of prohibition, prohibiting the defendants,
the Maori Land Court and the Maori Appellate Court from further hearing the application
by the relevant Maori tribes to the parts of the bed of the Wanganui River, was issued.

After Hay J. handed down his decision on 27 September 1949, a Royal Commission was
appointed in 1950 to inquire into and report upon the claims made by the relevant Maori
tribes in respect of the ownership of the beds of the Wanganui River. Following that in
1951 the Maori Purposes Act 1951 was enacted and by s.36 of that Act, the Court of Appeal
was conferred jurisdiction to determine the following questions:

"(a) Whether immediately prior to the passing of section fourteen of the Coal Mines Act
Amendment Act, 1903, the soil of the bed of the Wanganui River between the tidal
limit at Raorikia and the junction of the Wanganui and Whakapapa Rivers above
Tamaranui was held by the Maoris under their customs and usages, or what (if any)
other rights in the said river bed were then possessed by Maoris;

(b) To what Maori or Maoris, Lapu, tribe, or group or classes of Maoris (if any) did the
said river bed or the said rights then belong."

This then led to the Court of Appeal decision of July 1954 in *In Re The Bed of the
Wanganui River*\(^96\) wherein the Court found and declared *inter alia*:

(a) the enactment of the *Wanganui River Trust Act 1891* did not affect whatever rights
in the river-bed the Maoris then possessed;

(b) "... the bed of the Wanganui River within the limits stated, was at the time of the
Treaty of Waitangi upon the acquisition of British Sovereignty, land held by Maoris
- namely, the Wanganui tribe - under their custom and usages."\(^97\)

Subsequently, in a related decision of the Court of Appeal of August 1962 in *In Re The
Bed of The Wanganui River*,\(^98\) the Court held that since the original customary
title/aboriginal title to the lands around the Wanganui River had been investigated by the

\(^{95}\) Id.
\(^{97}\) Ibid. at p.420.
Maori Land Court and new freehold titles issued in substitution, the bed of the land adjoining the river had become ad medium filum a part of that block and the property of the respective owners of the block and therefore subject to the common law rule ad medium filum aquae. 99 And the Court also said:

"The fact a whole tribe may have exercised a right of passage over the river and that eel weirs and fishing devices placed by individuals or hapus were not rigidly limited to the portion of the river immediately adjacent to the bank occupied by such individuals or hapus does not negative the application of the ad medium filum rule." 100

One commentator on this decision, has observed that the decision had "disposed of the Maori claim to the bed of the Wanganui River and would present an effective barrier to any similar claims in the future in respect of other river beds." 101 Whilst it may have disposed of the particular claims in that case, there may however be situations where the ad medium filum rule can be of beneficial use to Maoris. Particularly in situation where the same tribe (iwi/hapu) may own adjoining land to a river. No doubt in instances where tracts of land adjoining a river may still be held under aboriginal title, the 1962 Court of Appeal decision will be of no barrier. This view is of course strengthened by some of the dicta in the recent Court of Appeal decision in Te Runanga-nui O Te Ika Whenua Inc. Soc. v. Attorney General (NZ) 102 as seen above. In any case, aboriginal water rights need not be claimed on the basis of the ownership of river-beds but can perfectly and validly be claimed "on the basis of a claim for water" 103 per se under aboriginal title as is now being done by the Tainui tribe who claim water rights interests in the Waikato River. 104

4. Indigenous Water Rights in Australia

Since the 1992 Mabo 105 decision and the subsequent enactment of the Commonwealth Native Title Act 1993, 106 the indigenous people of Australia may now 107 claim water rights

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99 This doctrine is covered at pp 95.
100 Supra n.98 at the headnotes.
101 Supra n.80 at p.39.
102 Supra n.84.
103 Supra n.89 at p.44.
104 The Auckland City Council proposes to take water from the Waikato River to meet the city's water needs. The Tainui Tribe, which alleges interests in the Waikato River, has demanded compensation payment from the Auckland City Council for the right to take the water from the Waikato: ibid.
105 (1992) 107 A.L.R. 1. The High Court rejected the previous position in Australia that the continent was terra nullius at the time of European settlement and held that native title that reflects the entitlement of the indigenous people of Australia in accordance with their customs.
based on the doctrine of aboriginal title. In this regard one commentator usefully observes:

"It is generally recognised that although there was no specific reference in Mabo (No2) to water rights, the rationale of the case could be validly applied to this resource. In principle, proving the existence of native title over water should not be difficult."

This is also apparent from the broad objective of the current Act where it says that the legislation is an "Act about native title in relation to land or waters, and for related purposes." For this purpose, the Act establishes the National Native Title Tribunal to inquire into native title claims.

Native title is recognised and protected under s. 10 of the Native Title Act 1993 and it may only be extinguished in accordance with the Act. Native title is defined under section 223 of the Act. The pertinent provision of that defining section reads:

"223.(1) The expression "native title" or "native title rights" means the communal, group or individual rights and interests of Aboriginal peoples or Torres Strait Islanders in relation to land or waters, where:

(a) the rights and interests are possessed under the traditional laws acknowledged, and traditional customs observed, by the Aboriginal peoples or Torres Strait Islanders; and

(b) the Aboriginal peoples or Torres Strait Islanders, by those laws and customs, have a connection with the land and waters; and

(c) the rights and interests are recognised by the common law of Australia.

(2) Without limiting subsection (1), "rights and interests" in that subsection includes hunting, gathering, or fishing rights and interests."

and continuous prior occupation of their land is now part of the common law of Australia. Such title can only be extinguished by valid legislation is are inconsistent with the continued existence of native title rights and interests, such as the granting of freehold or leasehold estates.

No 110 of 1993.

Among the cases that rejected aboriginal title in Australia, see Milirrpum v. Nabalco Pty Ltd (1971) 17 F.L.R. 141.

Since the Mabo decision, "aboriginal title" in Australia is referred to as "native title". Hence in this part, these terms are used interchangeably.


Native Title Act 1993.
From this definition of native title, it is now apparent that "native title" is "aboriginal title" and vice versa, and, therefore, in the Australian context are interchangeably used. Commenting on the Mabo High Court decision to now recognise native title and the subsequent native title legislation to statutorily do so, Nettheim, a highly respected authority on the subject, has pertinently observed that the High Court decision and the legislation "may be seen as providing some measure of acknowledgement by Australian law of legal pluralism in the particular vital areas of land and waters and their resources."\[111\] This observation is, of course, in accord with the definition of native title under s.223(1) of the Act as cited above.

"Water" for the purposes of native title claims under the Native Title Act 1993 is defined under s. 253 to include "sea, a river, a lake, a tidal inlet, a bay, an estuary, a harbour or subterranean waters" or "the bed or subsoil under, or airspace over, any waters" such as rivers, lakes, sea, estuary or a harbour.

From the Australian High Court in Mabo (No2),\[112\] it is clear that the bases and content of native title is the traditions, customs and customary laws and norms of the indigenous people of Australia. This means that native title has to be proved as matters of fact by adducing the relevant evidence on the customs, traditions, customary laws, and the way of life of the indigenous people. Hence, native title to water by the indigenous people can be established by adducing evidence to prove that as an identifiable community or group of indigenous people; they have a traditional connection with the land and water in accordance with their customs and traditional law; and that such connection to the land and water or actual occupation of the land and water can be established as a fact to the time of annexation of the Australian continent by the British Crown; and that today, this group of indigenous people do maintain a substantial connection (either spiritually or physically) with the land and water.

Comparing the emerging native title position with Canadian Aboriginal title to water and water rights on Indian reserves in Canada on the basis of Bartlett's work,\[113\] one commentator has usefully observed, and in my view validly so that:

"The High Court in Mabo (No.2) stated that native title has its origins in, and is given its content by, traditional laws and customs of Indigenous people. Is there sufficient evidence of the customs of particular Aboriginal tribes to

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\[111\] Nettheim, supra n.1 103 at p.113.


\[113\] See supra n. 59.
establish ownership of flowing water? Bartlett states that Canadian Aboriginal title and water rights on Indian reserve land establish a pattern of occupation and use but not ownership of the water itself. The position in Australia may be different. We have seen that some of the water resources in different parts of Australia were clearly considered capable of ownership. Some waterholes, rockholes, soaks and so on were sacred sites and some of them were considered so sacred that they were not even used. In these instances it could be argued that the flowing water to such sites is regarded in Aboriginal custom as being the subject of ownership or title.14

Since Aboriginal customs and traditional values provides the bases the content of native title, anthropological evidence concerning the various concepts and practices by the Aboriginal people over water and water resource uses are significant evidence15 towards native title over water within the meaning of s. 223 of the Native Title Act 1993.

The following table shows some of the native title water rights claims made by the various indigenous peoples of Australia to the National Native Title Tribunal to serve as examples on a State by State basis.

**STATE: NEW SOUTH WALES**

<table>
<thead>
<tr>
<th>Claimant</th>
<th>Date Lodged</th>
<th>Location and Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wiradjuri Wellington</td>
<td>27.1.94</td>
<td>Water and land - south eastern outskirts of town of Wellington</td>
</tr>
<tr>
<td>Ngunnawal Land Council</td>
<td>31.1.94</td>
<td>Water and land in the various areas of Murray Country, Queanbeyan</td>
</tr>
<tr>
<td>Wadi Wadi</td>
<td>1.6.94</td>
<td>Waters and land in two areas between Port Kembla and Kemblawarra</td>
</tr>
<tr>
<td>Daminik Kanak</td>
<td>12.11.94</td>
<td>Various small areas of watercourses, etc. between Wilton and Tempe</td>
</tr>
<tr>
<td>Aragual People</td>
<td>22.12.94</td>
<td>Land and waters in various areas of Crown land between Belongil Creek at Byron Bay and Jews Point on North Coast</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Claimant</th>
<th>Date Lodged</th>
<th>Location and Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wik People</td>
<td>20.3.94</td>
<td>Waters and land at Western side of Cape York Peninsula</td>
</tr>
<tr>
<td>Djabugay</td>
<td>13.5.94</td>
<td>Waters and land adjacent to Kuranda</td>
</tr>
<tr>
<td>Waanyi</td>
<td>27.6.94</td>
<td>Waters and land in the vicinity of Lawn Hills</td>
</tr>
<tr>
<td>Dingaal Tribe</td>
<td>15.7.94</td>
<td>Waters and land around Cape Flattery Area of Cape York and Lizard Island</td>
</tr>
<tr>
<td>Gunggandji</td>
<td>16.9.94</td>
<td>Waters and land in Far North Queensland near Cairns</td>
</tr>
<tr>
<td>Yidinji People</td>
<td>21.10.94</td>
<td>Waters and land at Gadgarra State Forest and part of Bellenden Kerr National Park</td>
</tr>
<tr>
<td>Olga Miller</td>
<td>17.11.94</td>
<td>Land and waters in Creeks in West Coast Fraser Island between Bennetts Creek and Dungongera Creek</td>
</tr>
<tr>
<td>Yirrganydji No.1</td>
<td>11.4.94</td>
<td>Land and Waters in Far North Queensland (FNQ) around Cairns and Port Douglas</td>
</tr>
<tr>
<td>Dhubbi-Warra</td>
<td>30.11.94</td>
<td>Land and waters around Hopevale Community</td>
</tr>
<tr>
<td>Yalanji Peoples</td>
<td>27.12.94</td>
<td>Land and waters in FNQ from Walsh Bay to Port Douglas</td>
</tr>
<tr>
<td>Umpila People</td>
<td>14.12.94</td>
<td>Land and waters in Cape Sidmouth Area of Cape York Peninsula</td>
</tr>
<tr>
<td>Quandamooka</td>
<td>3.1.95</td>
<td>Land and waters on Moreton Bay</td>
</tr>
<tr>
<td>George Davis (Dulabed A.C.)</td>
<td>32.2.95</td>
<td>Waters and land at Toohey Creek/Butchers Creek area of Goldsborough Valley</td>
</tr>
<tr>
<td>Bond People</td>
<td>10.4.95</td>
<td>Land and waters on Birdie Island</td>
</tr>
<tr>
<td>Les Murgha</td>
<td>10.4.95</td>
<td>Land and waters on Yarrabah</td>
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STATE: QUEENSLAND

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<tr>
<th>Claimant</th>
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<th>Location and Coverage</th>
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<tbody>
<tr>
<td>Patricia Davis-Hurst No.2</td>
<td>6.2.95</td>
<td>Waters of the area at mouth of Khappinghat Creek, Taree</td>
</tr>
<tr>
<td>Robert Brown Shoalhaven</td>
<td>10.4.95</td>
<td>Waters surrounding Pig Island in Shoalhaven River near Nowra</td>
</tr>
<tr>
<td>Western Yalanji Peoples</td>
<td>19.5.95</td>
<td>Land and waters around Mt Molloy</td>
</tr>
<tr>
<td>-------------------------</td>
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</tr>
<tr>
<td>Nguddaboolgin</td>
<td>17.5.95</td>
<td>Land and waters near Dimbulah</td>
</tr>
</tbody>
</table>

**STATE: VICTORIA**

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<tr>
<th>Claimant</th>
<th>Date Lodged</th>
<th>Location and Claim Coverage</th>
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</thead>
<tbody>
<tr>
<td>Yorta Yorta</td>
<td>21.2.94</td>
<td>Areas of land/waters in the vicinity of the Ovens, Goulburn and Murray Rivers (crosses States borders Vic/NSW)</td>
</tr>
</tbody>
</table>

**STATE: SOUTH AUSTRALIA**

<table>
<thead>
<tr>
<th>Claimant</th>
<th>Dated Lodged</th>
<th>Location and Claim Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dieri People</td>
<td>16.1.95</td>
<td>Waters and land in area north east of SA including Lake Eyre, parts of Simpson Desert, the Warburton River and Cooper Creek region and Lake Blanche</td>
</tr>
<tr>
<td>Mirning People</td>
<td>16.6.95</td>
<td>Land and waters Fowlers Bay to Cape Culver inland to the northern Nullabor Plain</td>
</tr>
</tbody>
</table>

**STATE: WESTERN AUSTRALIA**

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<tr>
<th>Claimant</th>
<th>Dated Lodged</th>
<th>Location and Claim Coverage</th>
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</thead>
<tbody>
<tr>
<td>Yawodru</td>
<td>2.2.94</td>
<td>Land and water around Roebuck Bay near Broome</td>
</tr>
<tr>
<td>Murriuwung Gajerrong No.1</td>
<td>16.4.94</td>
<td>Land and water in and around Kununurra, Wyndham, Cambridge Gulf, Turkey Creek and Keep River National Park</td>
</tr>
<tr>
<td>Maduwongga</td>
<td>19.4.94</td>
<td>Land and water in Goldfields Region</td>
</tr>
<tr>
<td>Goolaraboolo</td>
<td>27.6.94</td>
<td>Land and waters in West Kimberley region to north of Broome</td>
</tr>
<tr>
<td>Ngaluma/ Injibandi</td>
<td>27.7.94</td>
<td>Land and water in West Pilbara</td>
</tr>
<tr>
<td>Kirriuwung Gajerrong No.2</td>
<td>3.8.94</td>
<td>Land, inland waters and parts of the coast in and around Kununurra</td>
</tr>
<tr>
<td>Nanda People</td>
<td>18.8.94</td>
<td>Land and water in area north of Kalbarri</td>
</tr>
<tr>
<td>Claimant</td>
<td>Dated Lodged</td>
<td>Location and Claim Coverage</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
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</tr>
<tr>
<td>Mbantuarinya Arrernte</td>
<td>31.8/94</td>
<td>Land and water in areas within and around Alice Springs</td>
</tr>
<tr>
<td>Wandarang/Alawa/Mara/Ngalakan</td>
<td>8.9.94</td>
<td>Land and waters in the Roper River specifically most of the land previously known as St Vidgeon's Station</td>
</tr>
<tr>
<td>Larrakia-East Arm</td>
<td>17.11.94</td>
<td>Area of water in the East Arm region near Darwin</td>
</tr>
<tr>
<td>Mandilarri-Ildugij and others</td>
<td>22.11.94</td>
<td>Waters around Croker Island Region</td>
</tr>
<tr>
<td>Miriuwung &amp; Gajerrong No.3</td>
<td>3.1.95</td>
<td>Land and waters around far north west of NT/WA border</td>
</tr>
</tbody>
</table>

**STATE: NORTHERN TERRITORY**

**Source:** National Native Title Tribunal Annual Report 1994/95.116

116 National Native Title Tribunal Annual Report 1994/95, AGPS, Canberra (1995) pp.201-211. Other claims dealing with land only or marine waters only are not included. Notice of some recent claims to water before the Tribunal have been issued in The Australian of 20.11.96 at p.21.
None of the above stated claims have been definitively determined as of 31 December 1997, the time of writing. This is not surprising because since the enactment of the *Native Title Act 1993* and the subsequent establishment of the Native Titles Tribunal, only two land claims under native title have been successfully made out Australia wide.  

From the above cited 50 cases of water rights claims Australia wide, the least that can be said is that post-Mabo 1992, the indigenous peoples of Australia are now beginning to realise that aboriginal water rights can be pursued and if done so with persistency and vigor, can one day be a reality. In short, at least there is hope and what an awakening that in itself is from the hopelessness of the last nearly two hundred years of European settlement that only saw domination and denial.

Speaking of hope, there is also hope that with the Mabo recognition of aboriginal title in the common law of Australia, aboriginal water rights may possibly be pursued purely on the basis of the doctrine of aboriginal title as is the position in the Canadian and New Zealand common law as reviewed above.

5. Indigenous Water Rights in Selected Pacific Island Jurisdictions

In view of the adoption of the definition of "indigenous communities" above, strictly, the water rights which natives of the various Pacific Island countries have are described as "customary water rights" rather than indigenous water rights. Even in the American Pacific Island state of Hawaii, customary water rights appears to be the preferred terminology.  

Despite the difference in terminology and context, this brief discussion is considered necessary here to show the commonality and nexus between "indigenous water rights", as seen above, and "customary water rights", which is the focus of this thesis.

Just as indigenous water rights can be based on aboriginal title, customary water rights are based on customary law. Just as aboriginal title or native title is the basis of ownership claims by indigenous peoples to land traditionally held from time immemorial, customary land tenure is the basis of land tenure of traditionally held land in many of the South Pacific Islands. In other words, indigenous water rights and customary water rights, in reality, have

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117 These are the claim by the Dunghutti People in New South Wales over Crescent Head, in New South Wales and a claim by 13 clans over 110,000 ha in Hopevale in Far North Queensland. As of 9 December 1997, there were 687 native title claims throughout Australia: see *The Australian* Tuesday December 8 1997 p 2 and *The Australian Financial Review* Tuesday 9 December, 1997.

118 See supra n.1.

the same meaning and basis - that being the occupation and utilisation of waters and land by the indigenous occupants from time immemorial.\textsuperscript{120}

In the South Pacific Island countries now known as Cook Islands, Fiji, Kiribati, Nauru, Niue, Papua New Guinea, Solomon Islands, Tuvalu, Vanuatu and Western Samoa, legislation sanctions customary laws to be used as the basis of determining rights to and interests in customary land.\textsuperscript{121} As examples only, the following specific legislation of Fiji, Solomon Islands, Nauru, Kiribati and Tuvalu are cited. In Fiji, it is s.3 of the Native \textit{Lands Act} preserves land and associated property rights, such as "use of land, lagoons and reefs for food gathering,"\textsuperscript{122} in Solomon Islands, Schedule 3(1) of the \textit{Constitution} provides for the application of customary law as law in all matters unless it is inconsistent with statute law,\textsuperscript{123} in Nauru, s. 3 of the \textit{Custom and Adopted Laws Act 1971} provides for the customs and usages of Nauruans, subject only to certain limits, to take effect as law in relation to matters including title to and interests in land; in Kiribati, it is the \textit{Laws of Kiribati Act 1989} that, inter alia, provides for ownership of or rights over customary land, sea, seabed, lagoon foreshores, inland waters or ownership of rights in or to waters by custom and customary law; in Tuvalu, it is the \textit{Laws of Tuvalu Act 1987} that provides for, \textit{inter alia}, ownership rights of customary rights holders to land, water, lagoon foreshores, etc. in identical terms to the Kiribati legislation.

With the legislative sanctioning and recognition of customary land tenure in these South Pacific Island countries, it necessarily follows that rights to waters on customary land naturally accrue to the particular clan or tribe that holds the land under customary land tenure. For example, in the case of Papua New Guinea, interests of customary water rights holders are preserved and protected under section 5(2) of the \textit{Water Resources Act} Ch.205.

\textsuperscript{120}Bradford Morse has pertinently observed that: "Aboriginal rights, then, is a label which can be used to encompass many issues flowing from colonialism, such as, the existence of customary law, land tenure, special resource rights, local self-government, the traditional economy, and others in a context where there is either a dominant non-indigenous majority or an indigenous majority which itself consists of many different tribal peoples": Morse B., "Common Roots But Different Evolutions: The Development of Aboriginal Rights at Common Law in Australia, Asia and North America": (1985) 12 \textit{Mel. L. J.} 49 at p.50.


\textsuperscript{122}O'Neill N., "The Indigenous Fijians and the Fiji Legal System" (1987) 2 \textit{Law and Anthropology} 405 at pp.411-415. See also Article 100(3) of the \textit{Constitution 1990}, that generally provides for the customary laws of Fiji to take effect as laws of Fiji.

\textsuperscript{123}Generally, see Tiffany W., "Disputing in Customary Land Courts: Case Studies From the Solomon Islands" (1979) 7 \textit{Mel. L. J.} 99.
C. Conclusion

From the above review, it can be observed, albeit by way of summary, that the doctrinal basis of indigenous water rights claims are either based on the doctrine of aboriginal title or, in some instances where treaties were signed between the indigenous tribes and the nation state, are based on the treaties themselves. Particularly in the Canadian and New Zealand jurisprudence, there appears to be some consensus in the view that "water rights derived from aboriginal title may be limited to historic and traditional uses."124 Hence, it is observed that if indigenous people wish to claim water rights for purposes removed from the traditional mode of sustenance and more pointed towards modern commercial activities, the preferable avenue to pursue such claims to water rights would be the treaty based or statutorily created claims tribunal rather than at common law aboriginal title. In this regard, a commentator pertinently observes that it "is hard to conceive of an aboriginal claim to oil and natural gas" or to non-traditionally used minerals, etc ...."125

The significance of water rights to indigenous peoples or customary rights holders for that matter cannot be emphasised any greater for the simple reason that most, if not all, indigenous communities rely on clean flowing water from the watercourse rather than piped water for extractive consumptive use, as well as for instream use for fishing, etc. for their daily sustenance. Without doubt, a deeper articulation of this sentiment is best captured by the following words uttered by a spokesperson for the Assembly of First Nation of Canada:

"Our wholesome respect for the land and water has not changed. And many of our people still depend, to a large degree, upon the renewable resource harvest.
The spiritual affinity with our environment continues, and we still maintain a deep-rooted appreciation for water's lifegiving and cleansing qualities."126

Finally then water is of absolute necessity to the lives of many indigenous peoples as it, among many of its fine qualities, also forms part of many indigenous peoples' spiritual and cultural lives.127

124 Supra n.59 at p.7. In the case of New Zealand, see supra n.74.
125 Supra n.74 at p.33.
126 E. Benedict, as quoted in supra n.59 at p.2.
127 Supra n.59 at p.2.
Chapter 5

The Common Law Riparian Rights Doctrine And Its Applicability In Papua New Guinea

A. Introduction

Given the wandering and transcending nature of water, akin to elements such as air, wind and light to some extent, neither the civil nor common law acknowledged private property in the corpus of running water.\textsuperscript{1} Hence the common law developed the riparian rights doctrine as a response to the peculiar characteristics of water.\textsuperscript{2}

The inclusion of this chapter is necessitated by the fact that the common law of England as it stood on the eve of 15 September 1975, being Papua New Guinea's (PNG) Independence, is adopted as part of the underlying law of PNG under Schedule 2.2 of the Constitution, which reads:

"(1) Subject to this Part, the principles and rules that formed, immediately before Independence Day, the principles and rules of common law and equity in England are adopted, and shall be applied and enforced, as part of the underlying law, except if, and to the extent that -

(a) they are inconsistent with a Constitutional Law or a statute; or
(b) they are inapplicable or inappropriate to the circumstances of the country from time to time; or
(c) in their application to any particular matter they are inconsistent with custom as adopted by Part 1 ..."

"Custom" in here (Sch.2.2 (1)(c)) is defined under Schedule 1.2 of the Constitution to mean "the customs and usages of indigenous inhabitants of the country existing in relation


to the matter in question ... regardless of whether or not the custom or usage has existed from time immemorial". Hence, subject to the proviso of Schedule 2.2(1), that particular part of the English common law pertaining to riparian rights or, better still, the riparian rights doctrine, can apply in Papua New Guinea as part of the underlying law.3

This chapter presents the basic tenets of the riparian rights doctrine and its associated incidents at common law first, and then to consider the extent of its application in Papua New Guinea in view of the provisions of Schedule 2.2 of the Constitution, as cited above. That approach is necessary to assess the impact and other implications that the common law riparian rights doctrine possess to the existence and incidence of customary water rights in Papua New Guinea.

Accordingly, I will first discuss the riparian rights doctrine and its related incidents. That will be followed by a consideration of the extent of its application in Papua New Guinea.

B. Riparian Rights Doctrine and its Incidents at Common Law

In essence, the basic tenet of the riparian rights doctrine is that any person who owns and occupies land on the bank of a natural stream acquires water use rights which are commonly known as "riparian rights" by virtue of the occupation of that land. It is important to note at the outset that the right to water is attached to, or appurtenant to, the riparian land. Therefore, riparian rights cannot be acquired or disposed of without the riparian land. That is the reason why riparian rights are said to be "attached to or incident to riparian land".4 One of the often cited statements for the proposition that riparian rights are an incident of riparian land is that uttered by Lord Wensleydale in Chasemore v. Richards in these terms:

"The subject of rights to streams of water flowing on the surface has been of late years fully discussed, and, by a series of carefully considered judgements, placed on a clear and satisfactory footing. It has been settled that the right to the enjoyment of a natural stream of water on the surface ex jure naturae belongs to the proprietor of the adjoining lands as a natural incident to the right to the soil itself; and that he is entitled to the benefit of it, as he is to all

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3 The underlying law is, in effect, the common law of PNG, as defined under Schedule 1.2 of the Constitution to include, in the main, judge-made law, custom and the principles of English common law as adopted under Schedule 2 of the Constitution.

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the other advantages belonging to the land of which he is the owner. He has the right to have it come to him in its natural state, in flow, quantity and quality, and to go from him without obstruction, upon the same principle that he is entitled to the support of his neighbour's soil for his own in its natural state. His right in no way depends on prescription or the presumed grant of his neighbour, nor from the presume acquiescence of the proprietors above and below."  

For a proprietor to actually have riparian rights accorded, it is necessary that the riparian land be in actual contact, whether laterally or vertically, with the watercourse. Hence, in *Attwood v. Llay Main Collieries Ltd*, where the defendants claimed riparian rights on the basis that a 22-yard-wide mineral railway strip connected their land to the river, Lawrence J. found that the defendants' colliery works, where the water abstracted from the river was converted into a stream, was too far from the bank of the river to sustain the character of a riparian tenement and, accordingly, found against the defendants. With reference to this case, the late A.S. Wisdom pertinently observed:

"Whether a particular piece of land sustains the character of a riparian tenement is a question of fact, and must be determined according to the special circumstances. For riparian rights properly so named to arise, the land must be in actual contact with the stream, but lateral contact is as good *jure naturae* as vertical, that is to say, a man has as much right to water flowing past his land as he has to water flowing over his land. In the case of a tidal river, where the foreshore is left bare at low water, although the bank is not always in contact with the flow of the stream, it is in much contact for a great part of every day in the regular course of nature, which is sufficient foundation for a natural riparian right. Whilst the right of a riparian owner on the banks of a tidal navigable river exists *jure naturae*, it is essential to its existence that this land

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4 Supra n. 1 at p.61. The consequence of this will become apparent in the ensuing discussions.
6 [1926] 1 Ch. 445.
should be in contact with the flow of the stream, at least at the times of ordinary high tides.\textsuperscript{7}

Riparian rights never accrue from the ownership of river bed. This point is made clear by Lord Selborne in \textit{Lyon v. Fishmongers Co.}, where the Law Lord said that the ownership of the bed of a river "cannot be the natural foundation of riparian rights properly so called, because the word 'riparian' is relative to the bank, and not to the bed, of the stream ...."\textsuperscript{8}

Different presumptions of law exist concerning the ownership of river beds: generally, that in the case of a navigable tidal river, the Crown is \textit{prima facie} presumed ownership whereas in the case of a non-tidal watercourse, the riparian proprietors are, \textit{prima facie}, entitled to the soil of the bed \textit{usque ad medium aquae} (These concepts are discussed later as related incidents of the riparian rights doctrine). Particularly in a navigable tidal watercourse, riparian rights are subject to the public right of navigation. This is apparent from the statement by Lord Cairns in \textit{Lyons v. Fishmongers} that:

"Whereas in a non-navigable river all the riparian owners might combine to divert or pollute or diminish the stream; in a navigable river, the public right to navigation would intervene and prevent this being done."\textsuperscript{9}

Riparian rights are only attainable in relation to water in a natural watercourse flowing in known and defined channels \textit{ex jure naturae}, whether upon or below the surface of the ground.\textsuperscript{10} It, therefore, follows that the riparian rights doctrine will have no application in the following situations:\textsuperscript{11}

(a) where a flow of surface water squanders itself over an undefined area;

(b) in the case of underground water which merely percolates through the strata in unknown and unidentified channels, as was the case in \textit{Chasemore v. Richards};\textsuperscript{12} and

\begin{itemize}
  \item \textsuperscript{7} Wisdom A., \textit{The Law of Rivers And Watercourses} (2nd edn.), Shaw & Sons Ltd, London (1970) at p.82. Note that the current edition of this book, revised by William Howarth, \textit{Wisdom's Law of Watercourses} (5th edn.), Shaw & Sons Ltd, Crayford (1992), deals with this issue at p.68 but not in identical terms. I choose to go by the original author's work.
  \item \textsuperscript{8} (1876) 1 A.C. 622.
  \item \textsuperscript{9} Ibid.
  \item \textsuperscript{11} See supra n.7 at p.85.
  \item \textsuperscript{12} (1859) 11 E.R. 140.
\end{itemize}
(c) plainly artificial watercourses unless the origin and purpose for which such watercourse was built is unknown and over time has acquired the character of a natural watercourse, as was the case in Bailey & Co. v. Clark Son & Morland.\(^\text{13}\)

The classic dictum by Parke B. in Embery v. Owen\(^\text{14}\) best describes the substance and context of riparian rights, which are:

"The right to have a stream flow in its natural state, without diminution or alteration, is an incident of property in the land through which it passes; but flowing water is *publici juris*, not in the sense that it is *bonum vacans*, to which the first occupant may acquire an exclusive right, but that it is public and common in this sense only, that all may reasonably use it who have a right of access to it, and that none can have any property in the water itself, except in the particular portion which he may choose to abstract from the stream and take into his possession, and that during the time of his possession only. But each proprietor has the right to the usufruct of the stream which flows through his land."\(^\text{15}\)

And the entitlements of a riparian rights holder are as enunciated by Lord M’Naghten in Young v. Bankier Distillery Ltd, where his Lordship said:

"A riparian proprietor is entitled to have the water of the stream, on the banks of which his property lies, flow down as it has been accustomed to flow down on his property, subject to the ordinary use of the flowing water by upper proprietors, and to such further use, if any, on their part in connection with their property as may be reasonable under the circumstances. Every riparian proprietor is thus entitled to the water of his stream, in its natural flow, without sensible diminution or increase and without sensible alteration in its character or quality."\(^\text{16}\)

\(^{13}\) [1902] 1 Ch. 649.
\(^{14}\) (1851) 155 E.R. 579.
\(^{15}\) Id at pp.585-586.
\(^{16}\) [1893] A.C. 691 at p.698. Commenting on this dictum, the respected Gerry Bates has observed that: "This means that not only may a riparian owner take action against those who pollute the water running through the land, but statutory authorities which have knowledge of pollution in the water and fail to warn the landowner may be liable in negligence.": Bates G.M., *Environmental Law in Australia* (3rd edn.), Butterworths, Sydney (1992) at p.34.
With rights, there also go obligations so that the exercise of that right does not cause hardship and injury on others. Accordingly, the obligations of riparian right holders are as stated by Lord Denman in *Mason v. Hill*:

"The possessor of land through which a natural stream runs, has a right to the advantages of that stream flowing in its natural course, and to use it when he pleases for any purpose of his own not inconsistent with the similar rights in the proprietors of the land above and below. A proprietor above cannot diminish the quantity or injure the quality of water which would otherwise descend, nor can a proprietor below throw back the water without his licence or consent."  

Having stated the basic tenets of the riparian rights doctrine, I would now like to consider the extent of which riparian rights can be exercised. Before that is done, it is useful to bear in mind that: (a) a riparian proprietor is entitled to have the water flow down to his property and (b) in its natural state in terms of quality and to some extent, quantity, i.e. "without sensible diminution or increase and without sensible alteration in its character or quality."  

1. **The Extent of the Exercise of Riparian Rights**

A riparian proprietor is entitled to abstract, divert and/or use water for purposes which the common law has recognised as "ordinary uses" or "extraordinary uses." In the case of ordinary use, sometimes referred to as "primary use," of flowing water, there are effectively no restrictions. This prompted one commentator to observe that in the category of ordinary primary use, "a riparian proprietor is under no restriction, and if in the exercise of his ordinary rights he exhausts the water altogether, a lower riparian owner cannot complain."  

17. (1833) 110 E.R. 692.  
18 Supra n.16.  
19 Supra n.7 at p.86.
and for his cattle; and this without regard to the effect of which such use may
have in case of a deficiency upon proprietors lower down the stream.”20

And in relation to what is meant by “domestic purposes,” Lord Romilly M.R. quite
unequivocally stated in Attorney-General v. Great Eastern Railway that “domestic purposes
unquestionably would extend to culinary purposes; to the purposes of cleansing and
washing, feeding and supplying the ordinary quantity of cattle, and so on.”21 This
entitlement to use water for ordinary use is, however, to be exercised with reasonable use
and for purposes connected with the riparian tenement.22

Further to the riparian proprietor’s right to use water for ordinary uses, he/she is also
entitled to use flowing water for any other purpose which the common law has referred to
as “extraordinary use”, provided he/she does not interfere with the right of other riparian
proprietors either above or below him/her.23 In this regard, Wisdom has usefully observed
that:

“Subject to this condition, a riparian proprietor may dam up the stream for the
purposes of a mill, or divert the water for irrigation, but he has no right to
interrupt the regular flow of the stream, if he thereby interferes with the lawful
use of the water by other proprietors and inflicts upon them a sensible injury.
In the exercise of extraordinary rights ... a riparian proprietor is under
considerable restrictions: - (a) the use must be reasonable; (2) the purposes for
which the water is taken must be connected with his tenement; (3) he is bound
to restore the water which he has taken and uses for these purposes
substantially undiminished in volume and unaltered in character.”24

It is conceded that the courts have not been able to set out with some degree of certainty
what are extraordinary uses, but available case law indicates that purposes associated with
manufacturing,25 irrigation26 and damming of river for milling27 may amount to

20 (1858) 3 L.T. 98 and has since been cited with approval in many subsequent cases, including
(1875) L.R. 9 Ch. 451; Embrey v. Owen (1851) 6 Ex. 353; Chasemore v. Richards supra n.5;
Mason v. Hill (1833) 5 B & A 1, etc...
21 (1870) 23 L.T. 344 and affirmed in [1870] L.R. 6 Ch. 572.
22 See Lawrence J. in Attwood v. Llay Main Collieries Ltd supra n.5 at p.458.
23 See supra n.20.
24 Supra n.7 at p.87.
25 Dakin v. Cornish (1845) 6 Ex. 360. See also Hudson A., “Industry As A Riparian Use” (1959) 22
Modern Law Review 35.
26 Embrey v. Owen supra n.20.
27 Belfast Ropeworks v. Boyd (1887) 21 L.R. Ir. 560.
extraordinary uses at common law. But purposes associated with supplying a town\textsuperscript{28} or a lunatic asylum and jail\textsuperscript{29} have not been found to be reasonable, since they were not connected with the riparian tenement and therefore were not found to be allowable extraordinary purposes. Since there are no certain indicators either way, each case is to be determined on the circumstances and facts of its own. The following three cases are cited to serve as illustrations only.

The first is \textit{McCartney v. Londonderry and Lough Swilly Railway Company Ltd.}\textsuperscript{30} In this case, the railway company proposed to abstract water from a natural stream at the point where the railway line crossed the natural stream. That point was the only area where the property adjoined the stream. The railway company claimed that it had a right to abstract the water via a pipe along its railway line to a distant tank then use it to work their locomotive engines along the whole of their railway. The railway company's proposed activity would have adversely affected the plaintiff/appellant's corn mill, which was lower down the stream.

The House of Lords first ruled that an "owner of a tenement adjoining a natural stream has no right to divert the water to a place outside the tenement, and there consume it for purposes unconnected with the tenement."\textsuperscript{31} Accordingly, the railway company was refused its proposal as the facts showed that the purpose of the proposed abstraction was unconnected with the land where its line crossed the stream. In handing down judgment, Lord M'Naghten also pertinently observed that:

"There are, as it seems to me, three ways in which a person whose lands are intersected or bounded by a running stream may use the water to which the situation of his property gives him access. He may use it for ordinary or primary purposes, for domestic purposes, and the wants of his cattle. He may use it for some other purposes - sometimes called extraordinary or secondary purposes - provided those purposes are connected with or incident to his land, and provided that certain conditions are complied with. Then he may possibly take advantage of his position to use the water for purposes foreign to or

\textsuperscript{28} \textit{Swindon Waterworks Co. v. Wilts. & Berks. Canal Co.} supra n.5.
\textsuperscript{29} \textit{Medway Co. v. Romney (Earl)} (1861) 9 C.B.N.S. 575.
\textsuperscript{30} [1904] A.C. 301 (H.L.).
\textsuperscript{31} Ibid.
unconnected with his riparian tenement. His rights in the first two cases are not quite the same. In the third case he has no right at all."32

The next case is that of *Attwood v. Llay Main Collieries Ltd.*33 In this case the defendants obtained from the plaintiff a mining lease for 99 years. The land so demised by the plaintiff to the defendant to construct and maintain a mineral railway for the sole purpose of working the colliery and to abstract water from nearby streams or watercourses for purposes of working the colliery. It became apparent that the only piece of land which connected the defendant land to the river Alyn was a narrow strip of land with an average width of two yards abutting west on the river and extending eastward about half a mile, which was required/used to construct the mineral railway. The defendant had erected a pumping plant at the spot where the mineral railway crossed the river and extracted about 600,000 gallons of water a week (even though the plant was capable of extracting, at its full capacity, three times that quantity). The plaintiff sought declarations that the defendants were not entitled to abstract water for their extraordinary purposes. The court found that, on the evidence before it, "the site of the defendant's colliery works, where the water abstracted from the river was converted into steam, was too far from the bank of the river to sustain the character of a riparian tenement."34 Furthermore, the court was of the view that "even assuming the site of the defendants' colliery works to be a riparian tenement, the diversion and confiscation of part of the water of the river by them was in excess of their right as riparian owners to the use of the water for extraordinary purposes."35 That the rationale for this ruling seems to be that the volume of water the defendants abstracted was excessive in view of the fact that their riparian tenement was a mere narrow strip of land that was used for the construction of a mineral railway. Hence the defendants' use of water was found to be an unauthorised extraordinary purpose.36

The final case to consider here is Buckley J.'s modern decision in *Rugby Joint Water Board v. Waters.*37 The defendant had over 200 acres of farm land on the south bank of the Avon river, where he carried on a mixed farming business, partly arable and partly dairy farming. His farm consisted of a considerable stretch of river bank land. For irrigation, he constructed a reservoir which had a holding capacity of 250,000 gallons, with daily intake

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32 Ibid at p.306.
33 Supra n.5.
34 Id at p.445.
35 Ibid.
36 This case applied the earlier House of Lords decision in *Swindon Waterworks* supra n.5 and *MacCartney* supra n.30.
37 [1967] 1 Ch. 397 (Ch.D).
of about 30,000 to 40,000 gallons. The reservoir was fed by surface water and water percolating through the soil and a natural ditch. He then installed a system of spray irrigation and used spray irrigation (mainly during the summer months) rather than the traditional method of irrigation by flooding. For purposes of his spray irrigation, he sometimes drew water from the river when he was not able to from his reservoir. Traditional irrigation by flooding would have allowed the bulk of the water to be returned to the river, but with spray irrigation, only a small proportion of water was ever returned to the river due to directly into the atmosphere or from growing crops.

The plaintiff corporation was responsible for supplying water to the town of Rugby. Its principal source of supply was the river Avon, where it had a statutory authority to take the whole flow of the river at a certain mill down-stream from the defendant's land. Hence, any considerable loss of water from the river was a matter of concern to it. The plaintiff was also a riparian proprietor down-stream from the defendant's land. Therefore, as a riparian proprietor and not as a result of any statutory powers, the plaintiff was entitled to receive the full flow of the water at its mill, save in-so-far as it might be diminished by permissible uses by other riparian owners.

In the plaintiff's action seeking injunction to restrain the defendant from abstracting water from the river for spray irrigation, the court found that spray irrigation of the kind and on the scale employed by the defendant was not an ordinary use of the river, or was it an allowable extraordinary use. The court held that:

"... a riparian owner was not entitled to take water from a stream for extraordinary purposes without returning it to the stream from which it came substantially undiminished in quantity, and the question whether lower riparian owners had suffered any injury by such abstraction was irrelevant, since they were entitled to complain without proof of damage; and that, since the greater part of the water taken by the defendant from the river Avon for spray irrigation, which was not an ordinary use, evaporated either directly from the soil into the atmosphere or indirectly through the medium of growing crops, the defendant was not justified, as a riparian owner, in using the water from the river for spray irrigation."38

Further to the above, an upper riparian proprietor will not be allowed to discharge water from other watercourses to the natural watercourse so as to alter the natural character and

38 Id at p.398 quoting from the headnotes.
quality of the natural watercourse. This point has been settled since the House of Lords decision in *John Young And Co. v. The Bankier Distillery Co.* 39 The appellant, without any prescriptive rights, poured into the natural riparian stream shared by the respondents a large body of water which it had pumped up from its mines, and by so doing increased the quantity and greatly altered the natural quality of the natural watercourse. The court found in favour of the respondent and upheld the decision of the lower court abating the appellant's activity. In handing down the decision, Lord M'Naghten, in particular, observed:

"The appellants urged that working coal was the natural and proper use of their mineral property. They said they could not continue work unless they were permitted to discharge the water which accumulates in their mine - and they argued that this watercourse is the natural and proper channel to carry off the surplus water of the district. All that may be true; but in this country at any rate it is not permissible in such a case for a man to use his own property so as to injure the property of his neighbour."40

It is also worth mentioning that a lower riparian proprietor is also under an obligation to ensure that the natural flow of a river is not interfered with to such an extent that it affects the free passage of fish up the river to the upper riparian owner.41

2. The Extent of the Exercise of Riparian Rights by Obstruction of Natural Flow

Here, I wish to consider, albeit briefly, the extent the rights of the riparian proprietor has, and the obligations he/she may owe, in the diversion of flood water, placing erections on the river bed and the clearing of the (watercourse) channel.

In order to protect one's land from flooding, a riparian owner on the banks of a non-tidal river has the right to raise the river banks from time to time when necessary to confine the flood water within the banks in order to prevent overflowing to his/her land, provided no injury to others is caused, i.e. without causing actual injury to the riparian land either adjacent, above or below.42 However:

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39 Supra n.16.
40 Supra n.16 at p.698.
42 Supra n.7 at p.95.
"Whilst a riparian owner is entitled to protect his property from flooding, he cannot for that purpose execute works of alteration to the bed of the stream which also have the effect of increasing its normal flow and diminishing that past a nearby [property]."\(^{43}\)

In a situation where the riparian proprietor is subject to an extraordinary flood, he/she is entitled to fence off the land and turn the flood away, irrespective of the consequences on the other riparian neighbours. However, in this instance, "the action taken by the riparian owner must be in respect of warding off a common danger and not merely to transfer to some other person's land a danger which exists on his own land."\(^{44}\)

The next issue to consider here, is the extent to which a riparian proprietor can be allowed to place erections on the river bed in a non-tidal river.\(^{45}\) Generally, at common law, "each riparian proprietor \textit{prima facie} has the property in the soil of the bed or \textit{alveus} from his own side to the \textit{medium filum flumen}, but he is not entitled to use the \textit{alveus} in such a manner as to interfere with the natural flow of the water course or abridge the width of the stream, or to interfere with its natural course."\(^{46}\) The important issue here is whether the activities of the riparian proprietor on the \textit{alveus}, such as placing weirs or fish traps, will interfere with the natural flow of the river and such interference will cause injury to the interest of the other riparian proprietor. If the answer to this is in the negative, the action may be allowable. This is quite clear from the following passage:

"A riparian owner may build an erection on his land though covered with water, so long as it does not interfere with any rights of navigation, or with the rights of other riparian owners; thus, an obstruction cannot be erected in a stream so as to throw back the water on to an upper riparian owner's land and thereby flood his land or injure his mill ... subject to his right to catch fish, a riparian owner is not entitled to erect obstructions which interfere with the free

\(^{43}\) Ibid where the case \textit{Provinder Millers (Winchester) Ltd v. Southampton County Council} [1939] 4 All E.R. 157 is cited as authority for that proposition.

\(^{44}\) Supra n.7 at p.96. The case of \textit{Gibbons v. Lenfestey} (1915) 113 L.T. 55 is usually cited for the proposition that it is within an upper riparian proprietor's right to throw natural water on the lower land since that is a natural right inherent in property. However, the High Court of Australia in \textit{Gartner v. Kidman} (1961-1962) 108 C.L.R. 12 refused to follow \textit{Gibbons v. Lenfestey}, and Dixon C.J. and Windleyere J. were particularly of the view that "there is no rule forming part of the common law in Australia that a lower owner is obliged to receive on his land all surface water which flows naturally on to it from adjacent higher land"; see at p.13.

\(^{45}\) Note the distinction between a tidal and non-tidal river, as discussed in Chapter 2 supra at pp 20-22.

\(^{46}\) Supra n.7 at pp.91-92.
passage of fish which prevent fish from reaching the upper portions of the river to the detriment of the upper owners."47

The last issue that I want to consider here is that relating to the general clearing and maintenance of a (watercourse) channel. Where the channel becomes silted up or is choked with weeds, etc., owing to natural causes, the riparian proprietor is under no obligation at common law to clear and restore the channel.48 In fact, "a riparian owner cannot remove a long continued natural accretion of gravel or a shoal on the river bed so as to restore the flow of the water to its former state as to velocity, direction and height; nor is he entitled to alter the level of a river by removing obstructions which by lapse of time have become embedded and consolidated in and form part of the river bed ...."49

C. The Impact of Statute Law on Riparian Rights

There is little doubt, if any at all, that the principal riparian rights to abstract, impound, divert or obstruct water have been largely superseded by statutory controls, in some instances considerably modified.50 In Papua New Guinea, these incidents of riparian rights are now given statutory recognition by the Water Resources Act Ch.205, under ss. 21 and 22, but with some modifications to the extent that restrictions are placed on the quantity and mode of take.51 But to venture on and to suggest that statute law, by vesting all water flow and use rights on the State and then establishing an administrative system to mete out water use rights by way of licencing, has abolished riparian rights52 is fraught with inconsistency at the least. My reservation is based on simple logic that because riparian rights are an incident of property, namely riparian land, these rights cannot be abolished outright without the extinguishment of the riparian tenement in favour of the State or Crown. Since riparian rights are interests in property, they cannot be unilaterally abolished by State legislation.

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47 Ibid 7 at p.92 and the cases cited therein in support of these propositions.
48 Id at p.94.
49 Ibid and the various cases cited therein.
51 See also at Chapter 5 infra, where these are discussed.
52 For example, see Davis P.N., "Nationalization of Water Use Rights by the Australian States" (1975) 9(1) U.Q. L.J. 1 and the earlier work by the same author, Davis, "Australian and American Water Allocation Systems Compared" (1968) 9 Boston College Industrial and Commercial Law Review 647.
without just compensation nor "in the absence of clear and unmistakable language."\textsuperscript{53} Hence, the preferred view is that of Fullagar J. in the Australian High Court in \textit{Thorpes Ltd v. Grant Pastoral Co. Pty Ltd,}\textsuperscript{54} His honour was referring to the effect of s. 1 of the New South Wales \textit{Water Rights Act 1896}, that vested "the right to the use and flow and control of water in all rivers and lakes" on the Crown and an earlier New South Wales Full Court decision in \textit{Hanson v. Grassy Gully Gold Mining Co.,}\textsuperscript{55} and said:

"The effect given to the statute in Hanson's case means that a riparian proprietor has no remedy as of right if a river is damaged by an upper owner so that no water reaches him or if it is polluted and poisoned by the refuse of a factory ... The view which I am disposed to take is that the Act does not directly affect any private right but gives to the Crown new rights - not riparian rights - which are superior to, and may be exercised in derogation of, private riparian rights, but that, until those new and superior rights are exercised, private rights can and do co-exist with them."\textsuperscript{56}

This view has also found favour among other respected commentators.\textsuperscript{57} It, therefore, follows that "even where licences have been issued to all landowners along a river, the common law riparian right will survive to enjoin an upstream diverter from taking waters in excess of his licence, to the extent that it prevents an effective exercise of the right to the use as redefined by [statutory provisions] ...."\textsuperscript{58}

The above view has been recently vindicated by a New South Wales Supreme Court decision, where Cohen J. upheld that riparian proprietors "retained their residual common law right to 'use and take water for domestic purposes without sensible alteration in its character or quality'."\textsuperscript{59} In this case, Cohen J. made a distinction between the riparian proprietor's right to \textit{the flow} of water on the one hand and the right to \textit{take and use} water on the other and usefully opined that the impact of statutory vesting of water rights on the

\textsuperscript{54} Ibid.
\textsuperscript{55} (1900) 21 L.R. (N.S.W.) 271.
\textsuperscript{56} Supra n.53.
\textsuperscript{58} Clark and Renard supra n.57 at p.505.
\textsuperscript{59} \textit{Van Son v. Forestry Commission of New South Wales}, unreported, Supreme Court of New South Wales Equity Division, 3 February 1995, as cited in Lipman supra n.57.
Crown was that the statute vested the right to the flow on the Crown but the riparian proprietors retained residual common law rights to the taking and use of water.60

Perhaps another impact of statute law on riparian rights would be the outright abrogation of those uses known as extraordinary uses, as opposed to those known as ordinary uses, which have now been given statutory basis. This view finds comfort in the following observation:

"Reference is still frequently made in [legislation] to riparians and riparian uses. The limits placed by [legislation] on water use by landholders on the banks of streams, means that the modern equivalent to the common law ordinary use of water permitted to riparians is restricted to specific tasks and may be suspended altogether in some circumstances. The extraordinary use that was permitted at common law to riparians has no equivalent [and that] such uses are not permitted as of right."61

Therefore, for the exercise of any extraordinary purposes and those others not specified by statute, it appears that a riparian proprietor would be required to obtain the necessary water use permits from the relevant authority just like any other person.

D. The Extent of the Application of the Riparian Rights Doctrine in Papua New Guinea

As alluded to above, the principles of common law and equity in England that were found and applied by the English courts up until the 16 September 1975, the date upon which Papua New Guinea gained independence, are adopted as part of the underlying law by virtue of Schedule 2.2 of the Constitution. The manner in which the principles of common law and equity are adopted and are to be applied are as specified under Schedule 2.2(1) of the Constitution, as cited above in the introduction to this chapter. It is obvious from that provision that the principles and rules of common law and equity that were formed and applied by the courts in England immediately before Independence Day to be applied in the country only in so far as they are not inconsistent with a Constitutional

60 See Lipman supra n.57 at pp.219-220.

61 Dragun A.K. and V. Gleeson, "From Water Law to Transferability in New South Wales" (1989) 29 Natural Resources Journal 645 at p.650. Whilst the authors made this statement with particular reference to the impact of the NSW Water Act 1912, the statement is considered to be of wider relevance since, in most common law jurisdictions, the common law riparian rights doctrine preceded statute law, which sought to change or modify the common law.
Law, statute law, existing customary law or where it is found that they are not inapplicable or inappropriate to the circumstances prevailing in the country. In this regard, the cautious remarks by Kapi J. (as he then was) in *lambakey Okuk v. Fallscheer* are apt: "In considering the appropriateness or applicability of the common law principles to the circumstances of this country, one must not take it for granted that these common law principles should apply, or on the other hand, care must be taken in rejecting these principles." In accordance with Kapi J’s remarks, I would now like to separately consider the categories of factors to which the common law is subjected to in its applicability as part of the underlying law in Papua New Guinea.

### 1. Exception of the Common Law to Statute Law

This category of exception is, of course, in keeping with the age old tradition of the common law that it is, in all instances, subject to statute law. However, the quest under the circumstances in Papua New Guinea is to specifically identify and consider any statute that the particular rule of common law may be subject to.

The *Water Resources Act* Ch.205 appears to be the only statute that does not so much so abrogate or extinguish the common law doctrine of riparian rights but has *varied* the extent of the application of the common law riparian rights doctrine by making it subject to the legislation and giving most of the incidents of riparian rights associated with "ordinary use" a statutory basis. The manner in which this has been effected is through the following scheme. First, under s. 5 of the Act, with the exception of customary water use rights and those water use rights associated with domestic, prescribed recreational use and other prescribed purposes, all "rights to the use, flow and control of water is vested in the State."64

It is important to note that this section neither confers "ownership" of water resources on the State nor extinguishes riparian rights as they exist at common law but merely creates a rebuttable presumption of a superior usufructuary interest in the State.65 Secondly, under s. 22 of the Act, a riparian proprietor is allowed to take water without charge "for domestic purposes, and for watering the stock, of himself, of members of his family resident on the

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62 "Constitutional Law" means the *Constitution*, a law altering the *Constitution* or an Organic Law: see Schedule 1.2 *Constitution*. Under s.12 of the *Constitution*, an "Organic Law" is a law made by Parliament on matters which the *Constitution* has expressly authorised and, therefore, has the same force and effect as the *Constitution* itself.


64 Section 5(1) *Water Resources Act* Ch.205 of the *Revised Laws of Papua New Guinea*.

65 For support in this line of reasoning, see Clark and Myers, supra n.57 at p.243.
land and of his employees so resident" and, further, to have a general right of access to such watercourses "for himself, those members of his family and those employees and for his and their stock to the part of the bed and bank of the watercourse or lake adjoining the land of which he is the owner or occupier."  

Other than the above, any person, including a riparian proprietor, who wishes to use water for purposes other than domestic, stock watering, customary, or fire fighting, is required to obtain a water use permit from the administrative authority, the Bureau of Water Resources, under ss. 28-31 of the Act. This, therefore means that the riparian proprietor's rights for "extraordinary purposes", as allowed under common law, are effectively curtailed and, to some extent, abrogated. Apart from that, it is fair to conclude that a riparian proprietor's rights for "ordinary use", as known at common law still subsist. This conclusion is reached from the reasoning that the statute, namely the Water Resources Act Ch.205, did not extinguish riparian rights but merely regulated, in some instances, the exercise of riparian rights by giving such riparian rights (i.e., those associated with "ordinary use") a statutory basis. This, of course means that it would be quite proper and legitimate for a riparian proprietor in Papua New Guinea to assert on the basis of his/her common law right to "ordinary use" (i.e. for domestic purposes, etc.) to be entitled to: (a) the flow of water down to his/her property and (b) to have such flow of water in its natural state and, to some extent, quality.

2. Exception of Common Law to Custom

The next factor which the common law is subjected to for it to be applied in Papua New Guinea is that of whether the particular principle of common law is inconsistent with custom or customary law of the indigenous inhabitants of Papua New Guinea. If the particular principle of common law cannot be found to be inconsistent with custom, then

66 Section 22 (1)(a) supra n.64.
67 Section 22 (1)(b) supra n.64.
69 See supra n.65.
70 In this regard, note that despite the fact that the plaintiffs in Rugby Joint Water Board v. Waters had statutory right to the maximum flow of the Avon River, they successfully relied on the common law riparian right to enjoin the defendant: see supra n.37. See also Lipman supra n.57. Note that these have been discussed above.
the common law can be adopted and applied as part of the underlying law in Papua New Guinea.71

It will be recalled from the earlier discussion in Chapter 3 of this thesis72 on the nature of customary water rights in Papua New Guinea that customary water rights and the common law riparian rights doctrine have strikingly similar basis and incidents. These being:

- in both instances, the ownership of riparian land is the basis of acquiring water use rights;
- the lower riparian is equally entitled as the upper riparian to the flow of the water in its natural state and quality; and
- in a navigable watercourse, the right of navigation of all people, including non-riparians, is acknowledged and guaranteed.

These similarities will be even more apparent in the case studies on customary water use and rights presented in Part III of this thesis.73 It is safe to conclude that the common law doctrine of riparian rights is not inconsistent with the relevant custom in Papua New Guinea, namely, that of customary water use rights as is known, observed and practised by the people indigenous to Papua New Guinea. In other words, since the common law riparian rights doctrine is consistent with custom, namely customary water rights, it is capable of applying in Papua New Guinea as part of the underlying law.

3. The Circumstantial Applicability Rule

This rule exists in most, if not all Commonwealth countries and other countries which came in contact with the former British Empire. The rationale behind this rule is well expressed by the great Lord Denning in *Nyali Ltd v. Attorney-General*74 in these terms:

"The next proviso provides, however, that the common law is to apply 'subject to such qualifications as local circumstances render necessary'. This wise provision should, I think, be liberally construed. It is a recognition that the common law cannot be applied in a foreign land without considerable qualification. Just as with an English oak, so with the English common law.

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71 Schedule 2.2 (1)(c) Constitution. Note that in the hierarchy of laws in Papua New Guinea under s. 9 of the Constitution, common law is subject to custom.
72 See supra at pp. 24-48.
73 See infra at pp. 166-239.
You cannot transplant it to the African continent and expect it to retain the tough character which it has in England. It will flourish indeed, but it needs careful tending. So with the common law. It has many principles of manifest justice and good sense which can be applied with advantages to peoples of every race and colour all the world over: but it has so many refinements, subtleties and technicalities which are not suited to other folk. These offshoots must be cut away. In these far-off lands the people must have a law which they understand and which they will respect. The common law cannot fulfil this role except with considerable qualifications. The task of making these qualifications is entrusted to the judges of these lands. It is a great task which calls for all their wisdom."75

Obviously the local circumstances which are required to be taken into consideration when deciding on the reception of the common law into Papua New Guinea would, in the main, include the socio-political circumstances and structures as partly embodied in the National Goals and Directive Principles of the Preamble to the Constitution, the implications of relevant Constitutional Laws and statutes and prevailing customs and practices.76

Accordingly then, when the above factors are considered to determine the circumstantial applicability of the common law riparian rights doctrine, there appears to be no specific or particular hindrance. Hence, the common law riparian rights doctrine clearly pass the circumstantial applicability test.

E. Conclusion

It is my considered view that the common law riparian rights doctrine, as briefly set out above, greatly resembles customary water rights in Papua New Guinea in terms of the bases of these two concepts and the incidents they share. Both concepts are based on the ownership of riparian land, and some of the incidents which they have in common relate to the equal rights to the flow and use of water in its natural state, quality and, to some extent, quantity.

Statute law, namely the Water Resources Act Ch.205, has not extinguished the common law riparian rights doctrine in Papua New Guinea but has greatly impaired the extent of its

75 Ibid at pp.16-17.
application by restricting it to those uses known at common law as "ordinary uses," which generally include domestic and stock watering purposes. The main casualty of the impairment of the riparian rights doctrine in Papua New Guinea by statute law (i.e. the *Water Resources Act* Ch.205) is the demise of those purposes known at common law as "extraordinary uses," which generally include purposes associated with irrigation, manufacturing and damming of river for milling, etc.

When the extent of the applicability of the common law riparian rights doctrine is considered against the requirement of Schedule 2.2 of the *Constitution*, there are no impediments in terms of any inconsistencies, whether perceived or otherwise, neither at statute law, nor at custom, nor at customary law nor even by the circumstantial applicability test.

Hence, it can be quite safely concluded that the common law riparian rights doctrine, but without the impairment caused by the *Water Resources Act* Ch.205, as noted above, exists and applies in Papua New Guinea as part of that body of law known as the underlying law. It follows that any impairment of a riparian proprietor's (be he or she a lease/freeholder or customary owner of such land) "ordinary (water) use" rights can be protected either under the *Water Resources Act* Ch.205 or under the common law riparian rights doctrine.

76 For example, see *SCR No.4 of 1980; Re Petition of Somare* [1981] PNGLR 265.
PART II

The Water Resources Management Regime In Papua New Guinea

Introduction to Part II

This part states the statute law on water resources management in Papua New Guinea and go onto consider the impact (if any) of statute law on the exercise of customary water rights by the indigenous peoples of the country.
Chapter 6

Water Resource Management

A. Introduction

Owing to the fact that water is a primary natural resource necessary for the existence of most life forms on Earth, there are often competing and conflicting interests and demands for the resource, chiefly amongst the human race. Some of these aspects of the competition for water have been canvassed earlier at Chapter 2.1 Hence, it will suffice to note that the broad areas of these various conflicting interests and demands lie over extractive use, non-extractive use and the availability of the appropriate quantity and quality as and when needed.

1 See at pp. 10 - 23 supra. Engleman and LeRoy note that "[t]hroughout history, secure access to water has been essential to social and economic development and the stability of culture and civilisations", and as the world population grows, fresh water is becoming increasingly less available where and when it is needed.

Water resource management is the act of attempting to facilitate, allocate and regulate in accordance with the overall national objectives the conservation and utilization of water and water resources with a holistic and integrated approach.2

The intricacies of water resource management are aptly restated by Professor Douglas Fisher when he says:

“The dynamics of water management seek to achieve a number of objectives in the implementation of a single programme: for example, water supply, water conservation, navigation, public recreation, commercial fishing, pollution control. The junction of land and water is a particularly sensitive area susceptible to degradation and difficult to rehabilitate. The... riparian margins, moreover, are often the location of important resources that for economic and political reasons may require development.”3

Hence, in water resource management, all these factors and considerations come into play, and the management regime must be capable of responding to these challenges.4 In this chapter, Papua New Guinea’s environmental policy pertinent to water resources management is first examined. That is followed by an analysis of the water resources management regime: the administrative structure; the provisions dealing with State control over water use rights and the vesting provision; the water use control mechanisms; ground water; fishing; pollution control; and conservation and recreation.

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2 According to Goldfarb: "Water resource management is the maximization of as many of these variables as possible in response to demands, frequency, conflicting demands for water": Goldfarb W., Water Law (2nd edn.), Lewis Publishers, Michigan (1988) at p.8. With due respect, that definition is flawed because its use of terminology "the maximization of as many of these variables" places questions of conservation, in-stream flows and other non-extractive uses on the "back burner".


4 Wisdom notes that "the relationship between a water course and its catchment area, comprising the total extent of its natural drainage basin within which surface and subterranean water discharges, is of major importance. Increasingly, the law relating to water resource management and pollution control has linked the state of water courses with activities conducted on adjoining land, and sought to regulate land use in order to maintain water supplies for reasons of aquatic conservation" and "abstraction for domestic, industrial and agricultural supply, applications related to power generation or cooling, and other commercial and recreational activities such as navigation, fisheries and a range of other amenities which are provided by watercourses": Howarth W. ed., Wisdom’s Law of Watercourses (5th edn.) Shaw & Sons Ltd, Crayford, Kent (1992) at p. 1.
B. Environmental Policy Statement Pertinent to Water Resources Management

The Constitution\textsuperscript{5} of Papua New Guinea adopted at Independence in 1975 declares the Fourth National Goal to be our duty to conserve and use the nation's resources, including water,\textsuperscript{6} and the environment for the collective benefit of the nation and to replenish those resources for the benefit of future generations. The substantive text of the Fourth National Goal reads:

"(1) Wise use to be made of our natural resources and the environment in and on the land or seabed, in the sea, under the land, and in the air, in the interests of our development and in trust for future generations; and,

(2) the conservation and replenishment, for the benefit of ourselves and posterity, of the environment and its sacred, scenic and historical qualities; and

(3) all necessary steps to be taken to give adequate protection to all our valued birds, animals, fish, insects, plants and trees."

Subsequently, in 1977, this goal was adopted as Government policy when Parliament adopted it in the form of Environment and Conservation Policy: A Statement of Principles.\textsuperscript{7} That document laid down the pertinent policies to be, inter alia:

"... the natural resources of Papua New Guinea including the air, water, plant and wildlife, especially examples of the different kinds of plant and animal communities, must be protected for present and future generations by careful planning and management."

And that:

"Pollution of the land, air, water and seas in quantities which are likely to be dangerous to human health, to plants and to animals, and cause damage to the environment must be prevented."

\textsuperscript{5} Chapter 1, Revised Laws of PNG.
\textsuperscript{6} "The natural resources including land, forests, birds, animals, fish, water, sea, air and minerals should be used wisely in the interest of the integral development of all citizens throughout Papua New Guinea": Constitutional Planning Committee Final Report (Part 1) Chapter 2 p.3.
\textsuperscript{7} Office of Environment and Conservation, Environment and Conservation Policy - A Statement of Principles, Waigani (1976). Note that these policy statements and the National Goals and Directive Principles are non-justiciable, i.e., they cannot be enforced in a court of law, but the courts can only use them as guides to arrive at a decision: Section 25(1) and (2) Constitution and see Goldring J., The Constitution of Papua New Guinea, Law Book Co., Sydney (1978) at p. 31-38.
And further that:

“We will, as much as possible, follow the 'polluter pay' principle. This means that the people, including government, who use our natural resources for financial gain must pay the costs of environmental protection. Prevention is usually less costly than cure, so we also wish to identify and solve the problems before actual environmental damage occurs. Where damage has already occurred because of environmentally unwise practices in the past, the environment will be restored to the greatest extent possible within reasonable financial limitations.”

The policy document goes on to stress the point that development projects, whether based on agriculture, forestry, mining, industry, transport, water, tourism or human settlement, must also consider the impact on the environment, and it cautions that failure to do this may result in future social and economic costs.

As recently as November 1993, Perry Zeipi, M.P., then Minister for Environment and Conservation, released an Environment Statement, reaffirming the Government's commitment to its environment policy. He said that we should strive to develop environmental legislation which sets adequate environmental guidelines that comply with acceptable community standards, giving urgent attention to our soils, rivers and oceans to "clean up: from the neglect of the past and present human activities and to come up with ways and means to prevent such degradation and neglect in the future." The then Minister concluded with the observation that Papua New Guinea is a country with most of its diverse ecosystems undisturbed, that is our greatest resource and, therefore, we all must work together to ensure that we do not destroy it.

These statements suggest that the government of Papua New Guinea has attempted to adopt a good, ecologically sound environment policy in its efforts to manage its natural

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8 Supra n.7.
9 Ibid.
10 The policy statement was published in the national daily newspaper, Post-Courier 4 November 1993 at p.73. Such commitments were also made by the then Prime Minister, Paias Wingti, in the foreword to Report of the Post-United Nations Conference on Environment and Development (UNCED) Seminar for Sustainable Development in PNG (The PNG Response to Rio), Port Moresby (1992) at p.2.
11 Ibid. In this regard, the PNG Department of Environment and Conservation has recently published a two volume Conservation Needs Assessment report to identify the important areas of biological diversity in the country and the current legislative framework available for its management: see Beehler B. and J. Alcorn, (eds) Papua New Guinea Conservation Needs Assessment Volume I and II, Department of Environment and Conservation, Waigani (1993).
resources and the environment. One commentator has observed that "Papua New Guinea is one of the first and one of the few countries in which the protection of the environment is constitutionally anchored." However, reservations are also held regarding the extent to which the Government's environmental policies have been translated into ecologically sound legislation, regulations and guidelines to manage these resources and the environment. In the context of water resources management, the first example that comes to mind is the Government's decision on 28 September 1989 to allow the OK Tedi Mine (OTML) to continue to discharge raw tailings and other waste into the OK Tedi and Fly Rivers system, which has subsequently resulted in the extensive damage to the river system. This resulted in the now aborted $4 billion lawsuit by the customary landowners against the mining company and its shareholders and the subsequent enactment of the \textit{Mining (OK Tedi Restated Eighth Supplemental Agreement) Act 1995} to establish a compensation scheme for the people affected by the damages to the river system.

Papua New Guinea's environment and conservation policy is administered by the Ministry and Department of Environment and Conservation under the following legislation: \textit{Environmental Planning Act}; \textit{Environmental Contaminants Act}; \textit{Conservation Areas Act}; \textit{Fauna (Protection and Control) Act}; \textit{International Trade (Flora and Fauna) Act}; \textit{National Parks Act}; and, of course, the \textit{Water Resources Act}.

\textsuperscript{12} Dr Otto Kreye in Kreye O. and Castell, "Development and the Environment in PNG" (1991) 21 \textit{Catalyst} (Special Issue) at p.96; see also Hughes P. and M. Sullivan, "Environment Planning Legislation in Papua New Guinea: A Lesson for the Wider Pacific" (1989) 30 \textit{Pacific View Point} (Special Edition) 34. However, note that the policies are non-justiciable: supra n.7.

\textsuperscript{13} For example Ongwamuhana K., "Mining and Environmental Protection in Papua New Guinea" (1991) SE.P.L.J 133.

\textsuperscript{14} For a concise background to the decision and the immediate reaction to it then, see Kalinoe L., \textit{Environmental Impact Assessment in Developing Countries: The Papua New Guinea Experience} (unpublished) (1990) at pp.23-29 (Copies of the paper have been deposited in the New Guinea Collection of the U.P.N.G. Library).


\textsuperscript{16} See Chapter 3 at pp. Also see Kalinoe L. and M. J. Kuwimb, "Customary Landowners' Right to Sue for Compensation in Papua New Guinea and the Background to the \textit{Mining (OK Tedi Restated Eighth Supplemental Agreement) Act 1995}" (unpublished draft) 1996.

\textsuperscript{17} Chapter 370, Revised Laws of PNG.

\textsuperscript{18} Chapter 371, Revised Laws of PNG.

\textsuperscript{19} Chapter 362, Revised Laws of Papua New Guinea.

\textsuperscript{20} 1966.

\textsuperscript{21} 1979.

\textsuperscript{22} 1982.
also responsible under respective legislation, such as the Department of Health under the *Public Health Act;*\textsuperscript{24} the Department of Lands and Physical Planning under the *Physical Planning Act;*\textsuperscript{25} and the Water Board under the *National Water Supply and Sewerage Act 1986.*\textsuperscript{26} In so far as those statutes impact on the water resources management regime, they will be further considered below.

### C. The Water Resource Management Regime in Papua New Guinea

The *Water Resources Act*\textsuperscript{27} is the principal legislation that provides for the control and management of water resources, particularly water in rivers, streams, lakes and underground water, chiefly through the licensing process. Before I delve into these, a brief historical account of the evolution of the prevailing regime is given.

#### 1. Brief Historical Account

The first water resource management legislation to be enacted in Papua New Guinea was the *Water Resources Ordinance 1962,*\textsuperscript{28} which came into effect on 26 September 1963.\textsuperscript{29} Then as Papua and New Guinea, the former being a colony of Australia and the latter being an administrative Trust Territory of Australia under a United Nations Mandate, the two were administered by Australia under the *Papua New Guinea Act 1949-1962.* The *Water Resources Ordinance 1962* was enacted by the Legislative Council of the Territory of Papua and New Guinea under the above mentioned arrangements. It is owing to this background that Papua and New Guinea’s water resources management ordinance bears a resemblance to those in some of the Australian States legislation, in particular, the

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\textsuperscript{23} Chapter 205, *Revised Laws of PNG.* Note that the previous Ch. 205 legislation was repealed and replaced by Act No. 8 of 1982.

\textsuperscript{24} To the extent that s.56 of the Regulations provides for the attainment of minimum health standards of quality of water and prohibition from pollution of water supplies.

\textsuperscript{25} No. 32 of 1989, especially s. 5 and s. 44, where all physical development plans must give due consideration to their impact on the environment.

\textsuperscript{26} No. 68 of 1986. Section 34, particularly, deals with water quality standards. For a general overview of the natural resources management regime in Papua New Guinea, see: Kalinoe L. and M. J. Kuwimb, "Natural Resources Law and Policy in Papua New Guinea" (1996)3(1) *Australasian Journal of Natural Resources Law and Policy* 147.

\textsuperscript{27} Supra n. 23.

\textsuperscript{28} No. 62 of 1962.

\textsuperscript{29} The Governor General assented to it on 1 November 1962 and it was gazetted on the Territory Gazette on 26 September 1963.

An overview of the *Water Resources Ordinance 1962* (the 1962 Ordinance), reveals that a Water Resources Advisory Board and a Director of Water Resources were created to oversee the administration of the Ordinance. Under Part III of the Ordinance, the ownership of water resources was vested in the Crown for Papua and in the Administration for New Guinea,\(^{31}\) and it was an offence punishable with a fine of one hundred pounds for any person other than customary right holders to take, "use or divert water from, or obstruct, interfere with or pollute, a watercourse or lake."\(^{32}\) Under Part V, "Native Interests", or customary rights, were addressed. Sections 9 and 10 of the Ordinance provided for "customary rights to the use of water by natives in a specified area" to be terminated and be replaced with licences in specified instances. It is generally understood that this arrangement was enacted to facilitate the operations of water control districts under Part V. Nevertheless, for all other purposes, under section 11 of the Ordinance, the Administrator was expressly prohibited from issuing or granting a licence, permit, lease, or other approvals under the Ordinance if the effect of the grant or licence etc. would be "inconsistent with customary rights to the use of water by natives." Hence, there was an unambiguous acknowledgement and express recognition and protection accorded by the Ordinance to customary water rights. Part V of the Ordinance provided for the declaration of a Water Control District, which in today's term would be a catchment management area. Generally, water control districts were to be declared in catchment areas for dams and underground water areas. The effect of a certain catchment area being declared a water control district was a blanket prohibition,\(^{33}\) punishable with a fine of one hundred pounds, for a person to:

"(a) ring bark, cut down or destroy a tree;

(b) construct, alter, remove, repair, cleanse or scour a drain, trench or channel;"

\(^{30}\) An useful account of the evolution of the water resources management legislation in Australia, on a state by state comparative basis, is made by Clark S.D. and I.A. Renard, *The Framework of Australian Water Legislation and Private Rights* (Volume 1) and *Specific Water Management Problems* (Volume 2), Australian Water Resources Council, Melbourne (1972). Of course, much of this material is now dated.

\(^{31}\) Section 7 *Water Resources Ordinance 1962*.

\(^{32}\) Section 8(1) *id*.

\(^{33}\) A licence or grant to undertake any one or more of the prohibited activities, in an appropriate case, was obtainable from the Administrator under s.14(1) of the Ordinance and also under s.13(2) and (3).
(c) construct, alter or remove an embankment in such a way as to alter or be likely to alter the course, or in anyway impede or be likely to impede the flow or movement, of surface water;

(d) sink or construct a well or water bore; or

(e) burn off trees, shrubs, plants, grass or foliage."\(^{34}\)

As will be seen later, a water control district today would be "untenable" without a proper authorising legislation in view of certain constitutional provisions, including s.53 of the \textit{Constitution}, that restricts the unjust deprivation of property or interest in property.\(^{35}\)

Part VI provided for water use rights. Section 18 of the Ordinance allowed taking of water by any person for domestic or stock watering purposes but without placing any permanent installation for the taking of water. Section 19 allowed the exercise of riparian rights. Because this provision is significant to later discussion, s.19(1) and (4) are quoted:

"(1) Subject to this section, the owner or occupier of land abutting on the bank of a watercourse or lake:-

(a) may take water without charge from the watercourse or lake for the domestic purposes, and for watering the stock, of himself, of members of his family resident on the land and of his employees so resident; and

(b) shall have a right of access for himself, those members of his family and those employees and for his and their stock to the part of the bed and bank of the watercourse or lake adjoining the land of which he is the owner or occupier.

(2)....

(4) A person taking water from a watercourse or lake in pursuance of paragraph (a) of Subsection (1) of this section may place a permanent installation for taking water in, or on the land adjacent to the watercourse or lake but shall not build any works obstructing the flow of the watercourse or lake."

Without doubt, these provisions acknowledge riparian rights by express recognition and statutorily accord them protection. Hence, the argument raised by some commentators\(^{36}\) that statutes regulating water rights, in effect, extinguish riparian rights clearly would not

\(^{34}\) See infra at pp. n.42.


\(^{36}\) Sections 22-29 supra n.31.
hold. Water use rights other than riparian or customary rights were obtainable under either of the following:

(a) **licence**; authorised a person to construct, install and operate and maintain water works, mainly small scale hydro-electric power projects, small scale irrigation projects, drainage and removal of excess or surplus water from land or drainage of waste material into a water course or lake;\(^\text{37}\)

(b) **water resources investigation permit**; authorised a person to investigate water resources by carrying out pumping tests; test-drilling to collect soil or geological samples; installing, operating and maintaining gauges, instruments and appliances etc.;\(^\text{38}\) and

(c) **Lease**; mainly for large-scale hydro-electric power generation (power lease), large-scale water supply projects (water supply lease) or a large-scale irrigation and drainage project (irrigation and drainage lease).\(^\text{39}\)

Part VII laid down the measures to adopt in the event of a drought. Generally, in the event of a drought, all licences, permits and leases were to be suspended "to ensure that the water in the river system or lake or portion of the river system or lake is available for supplying the minimum essential needs of users in the following descending order of priority of purposes:-

(a) domestic purposes

(b) watering of stock

(c) irrigation of trees or plants

(d) industrial purposes or generation of hydro-electric power".\(^\text{40}\)

Provisions for compensation were made under Part VIII of the Ordinance. Generally, any owner or occupier of land who suffered loss or damage resulting from the exercise of powers or authorised activities of a licence holder, permit holder or a lessor was entitled to "compensation, from the licensee, the holder of the permit or the lease, as the case may be."\(^\text{41}\) Hence, compensation was not the responsibility of the Crown or the Administration but that of the users of statutorily acquired water rights: the licence, permit or lease holders.

\(^{37}\) Section 30-39 supra n.31.

\(^{38}\) Section 40-58 supra n.31.

\(^{39}\) Section 63(4) supra n.31.

\(^{40}\) Section 65 supra n.31.

\(^{41}\) Section 67(2) supra n.31.
It is interesting to note that petroleum prospecting and/or development licence, permit or lease holders authorised under the *Petroleum (Prospecting and Mining) Ordinance 1951-1961* were also entitled to compensation from statutory water rights users if the former's interests were injured by the activities of the latter. This was stipulated under s.66(1) of the Ordinance in these terms:

"The holder of a permit, licence or lease under the *Petroleum (Prospecting and Mining) Ordinance 1951-1961* is, subject to the terms and conditions of his permit, licence or lease, entitled to compensation from a licence, the holder of a permit or a lease under this Ordinance by reason of any operations or construction or works, or inundation resulting from those operations or that construction on land which at the date of commencement of those operations or that construction is being used by the first mentioned holder as a site for installations or drilling or mining operations or which is the site of a well or hole that has been drilled and sealed by him."

Compensation for loss of "customary rights to the use of water by natives" was also payable under s.67 of the *Ordinance*. This section provided that "[a] native who establishes that he has suffered loss or damage by virtue of the termination of his customary rights to the use of water" under ss. 9 and 10, as seen earlier under the discussion of Part III of the Ordinance, "or by virtue of disturbance resulting from resettlement consequential upon such a termination, may claim, and is entitled to, compensation for the loss or damage." If were customary rights where terminated under s.9 of the Ordinance, the compensation was to have been paid by the person to whom the lease was granted, but in any other case, the compensation was to have been paid by the Administration.42

Apart from minor amendments in 1966, 1967 and 1970, the administrative structure and arrangement of provisions and the general tenor of the 1962 Ordinance were maintained up to Independence in 1975. Soon after Independence, when all the pre-independence statutes were revised, the water resources Ordinance became *Water Resources Act 1982*, Provisions Revised

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46 Rearranged under the authority of *ibid*. The rearrangements effected by the revision are shown under this table:

<table>
<thead>
<tr>
<th>Water Resources Act 1982 Provisions</th>
<th>Revised Provisions under Ch. 205</th>
</tr>
</thead>
<tbody>
<tr>
<td>s.2 Application</td>
<td>s.3 Application</td>
</tr>
<tr>
<td>s.3 Exemption</td>
<td>s.4 Exemption</td>
</tr>
</tbody>
</table>
Resources Act Ch. 205 without any substantive changes. In 1982, the PNG Parliament enacted a new Water Resources Act, No. 8 of 1982, repealing and replacing the previous legislation. The 1982 legislation has since been slightly rearranged but remains as Chapter No. 205 in the Revised Law of Papua New Guinea.

Perhaps the significant changes brought about by the 1982 legislation were the deletion of Part III and Part IV of the previous legislation. As seen earlier, under Part III the "ownership of water resources" relating to the use, flow and control of water in a watercourse was vested in the State. The new legislation addresses this under a single section, s.5. Likewise, Part IV dealing with native interest or customary interests was removed and replaced a single provision, s.5(2), to scantily deal with it.

2. The Prevailing Management Regime: Introduction

In common with most of the early legislation for water resource management in many countries, the Water Resources Act Ch. 205 has a relatively narrow focus; its focus and concern being on the regulation of water extraction and the discharge and draining of water without concern for in-stream flowing. A useful introductory observation is made by Ward and Fordyce when they say:

"Water use management is regulated predominantly by a permit system. In conjunction with this system further controls of prosecution and suspension of rights are available. The water permit system is an ad hoc method that is reactive; that is, it comes into being as a response to an application. Although

s.4 Vesting of rights in the State
s.5 Acquisition of land
s.6 Notice to landholders
s.7 Interpretation

s.5 Vesting of rights in the State
s.6 Acquisition of land
s.7 Notice to land holders
s.2 Interpretations

In my view this was a regressive action the consequences of which are now witnessed on the OK Tedi and Fly River systems. See Kalinoe L., "Customary Water Rights In PNG: A Case Study of the Upper Sepik River" (1996) 2(1) Melanesian Journal of Land Studies 1.


Ibid.
it must take into account certain matters, it is a system that in practice allows for priority use of water to the first applicant. In the long term this may not be the best use of water."\(^{51}\)

Under the *Environmental Contaminants Act* Ch. 368,\(^{52}\) the Department of Environment and Conservation has broad powers pertaining to the control and regulation of water pollution. Under this Act, water is defined to include reservoirs, channels, drains\(^{53}\) and all waters within the definition of the *Water Resources Act* Ch. 205.\(^{54}\) Under section 72(1) of the *Environmental Contaminants Act*, the Department has powers to make regulations prohibiting and regulating discharge into watercourses,\(^{55}\) prescribing water quality standards and standards for matters to be safely discharged and also prescribing maximum permissible concentrations of discharges. Likewise, the *Public Health Act* and regulations\(^{56}\) made under it, in particular, s.34 of the Regulations, regulates water quality standards for the disposal of wastes, i.e., sewage and trade wastes. Most other statutes,\(^{57}\) including those referred to here, are either complementary or subordinate to the *Water Resources Act* in the management of water resources. The purpose of the *Water Resources Act* is "to make provision for the management of national water resources and the responsibility for that management."\(^{58}\) Hence, the Act is primarily intended to regulate the use of water resources by the public and to generally prevent contamination of water resources. One commentator has observed that "[t]he Act was not intended to, and does not, regulate the authorised discharge of contaminants into water ways (that is river systems

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\(^{51}\) As amended by *Environmental Contaminants (Amendment) Act 1994* (No. 16 of 1994).

\(^{52}\) The definition under s.2 of the Act reads: "water includes any sea, river, stream, water course, reservoir, well, bore, tank, dam, canal, lake, lagoon, swamp, open drain, coastal or underground water."

\(^{53}\) Under s.2 of the *Water Resources Act*, "water" is defined as "all water in the country, including lakes, rivers, streams, swamps, surface and underground waters, water sources, and coastal waters comprising the internal waters and territorial sea as those expressions are used in the National Seas Act."

\(^{54}\) Under s.2 of the *Water Resources Act*, a "water course" is defined to include "every river, stream, passage and channel on or under the ground, whether natural or not, through which water flows, whether continuously or intermittently."

\(^{55}\) See also *Public Health (Sanitation and General) Regulation*, which governs the control and monitoring of mosquitoes, and provides for the management of ponds, the draining and filling of swamps, and the clearing of vegetation.


\(^{57}\) Recital Clause (c) to the *Water Resources Act* Ch. 205.

\(^{58}\) Ongwamuhana, supra n.13 at p.140.
and ocean), a problem which arises from mining activities."59 This observation is not correct, because discharge of contaminants into watercourses is specifically regulated under s.28(1) of the Water Resources Act and s. 1(1)(b) of the Regulations to the Act.60 Unless a particular mining project is exempted from the operation of the Water Resources Act, as was the case with Bougainville Copper mine,61 the Water Resources Act would generally apply.

3. State Control Over Water Use

Since water is a mobile substance transcending provincial and national boundaries, it is at common law not practicable to claim ownership of water in rivers, lakes and streams.62 This principle is best articulated by Wisdom:

"... the general position is that there can be no ownership or right of property in the flowing water of a watercourse. Flowing water is public juris in the sense that all may reasonably use it who have a right of access to it, and none can have any property in the water itself, except in a particular portion that he may choose to abstract and take into his possession, and that this right extends only for the duration of possession. Once the abstraction or appropriation is abandoned the water again becomes public juris."63

Hence, rights to water use are claimed. Accordingly, s. 5(1) of the Water Resources Act Ch. 205 declares that the right to use and control of water is vested in the State. Section 5(2) go on to provide that customary rights of local people to use water in accordance with their custom are not affected. Furthermore, s. 5(3) provides that the use of water for domestic purposes, prescribed recreation uses and any other prescribed purposes are not affected. Further to the general allowances provided under s.5(2) and s.5(3), as cited above, s. 21 of the Act provides that:

"(1) A person may take water without charge for:-

a) domestic purposes; or

b) watering stock; or

59 A separate permit application is required under section 1(b) of the Regulations to discharge water or waste into a water course. The form is provided in Form 2 Application for Water Use Permit to Discharge Water of Waste.
60 Exempted under the Mining (Bougainville Copper Agreement) Act Ch. 196 Revised Laws of PNG.
61 Exempted under the Mining (OK Tedi Agreement) Act Ch. 363 Revised Law of PNG.
62 Embrey v. Owen (1851) 6 Ex. 353; Mason v. Hill, (1833) 5 B.& Ad.1; Williams v. Morland, (1824), 2B&C. 910
c) fire fighting,
from a watercourse or lake to which the public has free access by road or from
an area of land reserved for the use of the public.”

Under s.21(2), such person is prohibited from taking water by using a permanent
installation in or on the land adjacent to the water course or lake. Breach of this is an
offence punishable by a fine not exceeding K200.00 (about $200.00).

Section 22 of the Act allows an owner of land near or abutting a watercourse or lake to
take water for similar purposes, for themselves, family members and employees, but the
Director of Water Resources is empowered to specify the allowable maximum quantity of
water under these circumstances. The relevant provisions of s.22 are in these terms:

“(1) Subject to this section, the owner or occupier of land abutting on the bank
of a water course or lake:-
(a) may take water without charge from the water course or lake for:-
(i) the domestic purposes, and for watering the stock, of himself or
members of his family resident on the land and of his employees
so resident; and
(ii) fire fighting purposes; and
(b) shall have a right of access for himself, those members of his family
and those employees and for his and their stock to the part of the bed
and bank of the water course or lake adjoining the land of which he
is the owner or occupier.

(2) The Director may, by written notice given to an owner or occupier referred
to in Subsection (1), specify the maximum quantity of water that may be
taken by the owner or occupier under Subsection (1)(a) during a period
specified in the notice.”

During the period that the Director of Water Resources has issued a written notice
specifying the allowable maximum take of water, a riparian owner who takes water in
excess of the allowable limit is deemed to have committed an offence punishable with a
maximum penalty of K200.00 about ($200.00).64

In contrast to the allowance made under s.21 and the restrictions placed on the use of
permanent installations to exercise these rights for those allowable purposes under s. 22(4),

63 Howarth, supra n.4 at p.13.
64 Section 22(3) Supra n.23.
a riparian owner is allowed to "replace a permanent installation for taking water in, or on the land adjacent to, the water course or lake but must not build any works obstructing the flow of the water course or lake." For the purpose of the rights of use and access by other riparian owners, s. 22(6) provides that:

"A person who has a right to pass over land abutting on the bank of a water course or lake, that is owned or occupied by another person, for the purpose of access to the water course or lake shall have, for the purpose of this section, the same rights as that other person, but must not place a permanent installation for taking water in or on the land adjacent to, the water course or lake. Penalty: A fine not exceeding K200.00."

Under s. 22(5) of the Act, the rights of access accorded to a riparian owner under s.22(1)(b), as set out above, "are subject to any rights granted under this or any other Act." This provision clearly makes riparian rights subject to statutorily acquired or obtained water use rights.

4. Administrative Authority

The Water Resources Board established under s. 9 of the Water Resources Act Ch. 205 is the main regulatory body charged with all regulatory control and co-ordination functions pertinent to water use and conservation. Its powers and functions are spelled out under s. 15 of the Act:

"(1) The functions of the Board are:-

(a) to examine problems concerning and make plans in respect of:-
   (i) the allocation and quality of water; and
   (ii) the control
      (a) of erosion on the banks of rivers and shores of lakes and coastal shores; and
      (b) of flow and flooding in and from rivers and lakes; and
   (iii) the conservation of water; and
   (iv) the need of fisheries and wildlife and recreation of use of water; and

65 If such person contravenes the prohibition and builds water works obstructing the flow of the water course or lake, that person is liable to a penalty not exceeding K200.00 (about $200.00).
66 Such other rights obtainable under other legislation are those for a prospecting and mining tenement under the Mining Act 1992, the petroleum prospecting and development licence under the Petroleum Act Ch. 198, and those for the development of hydro-electric power generation under the Electricity Commission (Productive Use of Land) Act Ch. 181.
(b) to advise the Minister on any question relating to the administration of this Act; and

(c) to co-ordinate all matters relating to water so as to ensure that this national asset is available to meet as many demands as possible and is used to the best advantage of the country and region in which it exists; and

(d) to consider all applications under Section 28 [ie., applications for water use permits] and to carry out all duties as specified in this Act in connexion with such applications; and

(e) to control the damming, diversion, taking and use of water and discharge of anything into water so far as any such acts may affect the quality or availability of water for other purposes; and

(f) to guide and encourage research into matters relating to the investigation and use of water resources; and

(g) to demonstrate and encourage the development and use of efficient conservation of water resources; and

(h) to promote the best usage of water resources, including multiple users, and to allocate water resources between competing demands; and

(i) to consult with government bodies on maximum utilization of water resources in the national interest."

Clearly the Board has wide ranging powers and functions to enable it to co-ordinate the management, conservation and utilization of water resources in the overall national interest.\(^67\) The Director of Water Resources, created by s. 8 of the Act, is the chief executive officer in relation to water resources management and is accountable to the Board. The Bureau of Water Resources, which is, in effect, a division the Department of Environment and Conservation and headed by the Director of Water Resources, acts as the secretariat to the Board, providing all technical, scientific and professional functions.\(^68\) The Bureau of Water Resources (BWR) is, however, not specifically created by the Water

\(^{67}\) The composition of the Board was as stipulated under s. 9 of the Act: one person nominated by the Prime Minister; one person nominated by the Minister for Minerals and Energy; one person nominated by the Lands Minister; one person nominated by the Minister for Environment and Conservation; one person nominated by the Minister for Primary Industry; one person nominated by the Minister for Forests; one person nominated by the Minister for Health; one person nominated by the Minister for Works and Supply; one person nominated by the Minister for Provincial and Local-Level Governments; one person nominated by the Minister for Urban Development; one person nominated by the PNG Electricity Commission; and one person nominated by the Prime Minister to represent the interests of the private sector. All up, a total of 13 members. The quorum for a meeting is six members: s.13 (4).
Resources Act Ch. 205 or any other legislation and, therefore, cannot act independently of the Board: it merely acts for and on behalf of the Board and the Director of Water Resources. Hence, the following assertion by a former Director of Water Resources is wrong in that it has no basis in law:

"The Bureau Water Resources is given the legislative powers and the mandate under the Water Resources Act to control the allocation and utilization of water in the country, and at the same time ensuring protection and conservation of existing water quality and quantity from widespread adverse impacts from resources development operations." 69

Since the Bureau of Water Resources is not legislatively created and vested with appropriate powers, care must be taken to ensure that any activities it undertakes in relation to water resources management are done with proper authority from the Water Resources Board or the Director of Water Resources. Failure to take heed of that may bring into contention the propriety of its actions on grounds of lack of power. 70

5. Statutory Water Use Rights

One of the glaring deficiencies of the Water Resources Act Ch. 205 is that while it specifies the water uses which do not require a water use permit etc., 71 it does not specify the activities that require authorisation by way of permit etc. One is left to read the whole legislation to identify such instances. In this regard, Ward and Fordyce have made the following pertinent observations:

"The present Act does not specifically set out the activities that require authorisation. Interpretation of the various sections indicates that permits are required for the following activities:

- the damming of water
- the diverting of water
- taking of water

69 Ibid.
70 I have raised this in Kalinoe L., "Water Resources Management in Papua New Guinea: Law, Policy and Practice" (1994) 1(2) Australasian Journal of Natural Resources Law and Policy 195 at pp.199-200 and have argued at 221 for "the elevation of the Bureau of Water Resources to a statutory body, charged with the management of water resources and the enforcement of its management plans and objectives."
71 See ss. 5(2), 5(3), 21 and 22 Supra n.23.
discharging of water or wastes into water
the use of water which would affect the quality or availability of water.\textsuperscript{72}

The mechanisms employed by the Water Resources Act Ch.205 to issue water use rights for any person who wishes to conduct water works, extract water or to discharge wastes into water ways and for the overall management and utilisation of water in Papua New Guinea are:

through the declaration of water control districts under Part IV of the Act;
by issuing water use permits through the process set out under Parts V, VI and VII of the Act;
by issuing water investigation permits through the process set out under Part VIII of the Act; and
by providing for stricter control mechanisms in a drought situation as stipulated under Part IX of the Act.

Separate consideration of each of these follows. First, it must be pointed out that the Act does not provide separate regulatory mechanisms for the extraction and utilisation of ground water to that of surface water sources such as rivers, lakes and streams etc. This occurs from the all-embracing nature of the definition of a "water course"\textsuperscript{73} and "water source"\textsuperscript{74} under s. 2 of the Act to embrace and include all surface or underground water. Interestingly enough, under the Water Resources Act 1967,\textsuperscript{75} and as amended by the Water Resources (Amendment) Act 1970,\textsuperscript{76} which became the initial Water Resources Act Ch 205, when the pre-Independence statutes were revised, "underground water" was separately defined\textsuperscript{77} and any person who extracted underground water was required to obtain a specific water use permit pertinent to the extraction of underground water.\textsuperscript{78} I have argued that in view of the ecological, geological and geophysical considerations in the extraction and utilization of underground water, there must be specific regulatory and management

\textsuperscript{72} Supra n.49 at p.13.
\textsuperscript{73} "Water course" includes every river, stream, passage, and channel on or under the ground water natural or not, through which water flows, whether continuously or intermittently": s.2 supra n.71
\textsuperscript{74} "Water source" includes water course, lake and any other water sources, whether on the surface or underground: s.2 supra n23.
\textsuperscript{75} No. 29 of 1967.
\textsuperscript{76} No. 7 of 1971.
\textsuperscript{77} "Underground water" means any water below the surface of the ground": s.1(1) Water Resources Act Ch 205 (repealed).
\textsuperscript{78} Ibid., Part V Division 2, in particular s. 14(3).
mechanisms for underground water, distinct from those for surface water, to effectively and properly deal with it.79

The following is a review of the existing mechanisms adopted by the Water Resources Act Ch. 205 for the management and utilization of water, as alluded to above.

(i) Water Control District

A water control district may be declared by the relevant Minister, (at the time of writing, the Minister for Environment and Conservation),80 if an area is a catchment area of a river, lake, stream or underground water from which water is taken for sustaining the water supply for a particular community.81 When such an area is declared a Water Control District, the following activities are prohibited:

- cutting or destroying trees;
- constructing or altering a drain, trench or channel;
- constructing altering or removing an embankment against a watercourse or lake;
- constructing, altering or removing an embankment in order to alter, or cause to alter, the course of water;
- constructing, altering or removing an embankment in order to impede, or cause to impede, the flow or movement of surface water;
- constructing or sinking a well or water bore; and
- burning of trees, shrubs, plants, grass or foliage.

Any person found to be carrying on any of these prohibited activities is liable to a fine not exceeding K500.00.82

Furthermore, the Director of Water Resources may, by a written notice, require the owner or occupier of land within a water control district to: adopt, or refrain from using certain agricultural or pastoral methods or practices; to refrain from removing or clearing trees, shrubs, plants, grass or foliage, or to take such action for preventing the erosion, drift

79 Supra n.70 at 208.
80 In 1992-1994, it was the Minister for Energy Development, when the then Wingti Government created a new ministry and Department of Energy Development and transferred the Bureau of Water Resources to the new Department. Under Sir Julius Chan's Government, that ministry and department were abolished, and the Bureau of Water Resources reverted back to the Department of Environment and Conservation.
81 Section 23 supra n.23.
82 Section 24 supra n.23.
or movement of soil or water or both. Failure to comply with such a written notice is an
offence punishable with a penalty of up to K500.00.83

The Director of Water Resources may, however, by written approval, authorise any
person to undertake any of those prohibited activities in a water control district for a
specified period, in accordance with such conditions and restrictions specified in the written
approval.84

It appears that the water control district mechanism was carried over from the 1962
Ordinance (as reviewed above), where it was primarily designed to protect hydro dam
catchments and water supply catchment environments.85 Available records show that the
(Sirinumu) Laloki Catchment Area has been declared a water control district86 and
designated areas in the island of Daru (Western Province),87 Kwikila (Central Province)88
Lae (Morobe Province)89 and Rabaul (East New Britain Province)90 have been declared
underground water control areas under similar provisions of previous legislation, namely
the Water Resources Ordinance 1962,91 Water Resources Ordinance 196692 Water
Resources Ordinance 196793 and the Water Resources (Amendment) Act 197094, which
when revised95 at Independence became the initial Water Resources Act Ch. 205.96 The
current legislation neither provides for the annulment/repeal nor specifically provides for
the savings of these declared water control districts or underground water control areas.
Given that, and in accordance with the general rules of statutory interpretations,97 it is

83 Section 27 supra n.23.
84 Section 25 supra n.23.
85 For hydro power generation, such lands were leased to the PNG Electricity Commission as "water-
power lease" under the previous water resources management regimes and now subsists as such
under the Electricity Commission (Productive Use of Land) Act Ch. 181 of the Revised Laws of
PNG.
86 Water Resources Regulations s. 15 and, as specified under Schedule 2 supra n.77, generally being
all land within the vicinity of the Sirinumu Dam.
87 See subsidiary legislation, supra n.77.
and No. 49 of 3 September 1970 at p. 842.
902.
91 No. 62 of 1962.
92 No. 7 of 1967.
93 No. 29 of 1967.
94 No. 7 of 1971.
95 By virtue of the Statute Law Revision (Metric Conversion) Act 1974 (No. 49 of 1974).
96 Supra n.77.
97 See Pearce and Geddes, Statutory Interpretation In Australia (4th edn.) Butterworths, Sydney

124
submitted that the declared water control district of Sirinumu and the underground water
control areas at Daru, Kwikila, Lae and Rabaul as specified above, remain in force.

Since the current *Water Resources Act* Ch. 205 came into effect on 22 April 1982,98 the
Water Resources Board has not initiated a water control district on the ground that the
process and its implications are such that a declaration may amount to an unjust deprivation
of property or an interest or right over property and, consequently, in be conflict with s. 53
of the *Constitution*. Since the *Constitution* is entrenched and, hence, supreme,99 any
legislation that is inconsistent with it is to the extent of such inconsistency, invalid and in
effective.100 Generally, s. 53 of the *Constitution*101 guarantees protection from the unjust
deprivation of property either by:

98 See supra n.70 at 209.
99 See s. 11 of the *Constitution* supra n.5.
100 The Supreme Court of Papua New Guinea has not been reluctant in declaring such legislation or
101 Section 53 of the *Constitution* reads:

"(1) Subject to s. 54 ... and except as permitted by this section, possession may not be
compulsorily taken of any property, and no interest in or right over property may be
compulsorily acquired, except in accordance with an Organic Law or an Act of Parliament,
and unless:-

(a) the property is required for:-

(i) a public purpose; or

(ii) a reason that is reasonably justifiable in a democratic society that has a proper
   regard for the rights and dignity of mankind, that is so declared and so described,
   for the purposes of this section, in an Organic Law or an Act of Parliament; and

(b) the necessity for the taking of possession or acquisition for the attainment of that
   purpose or for that reason is such as to afford reasonable justification for the causing of
   any resultant hardship to any person affected.

(2) Subject to this section, just compensation must be made on just terms by the expropriating
authority, giving full weight to the National Goals and Directive Principles and having due
regard to the national interest and to the expression of that interest by the Parliament, as well
as to the person affected.

(3) For the purpose of Subsection (2), compensation shall not be deemed not to be just and on
just terms solely by reason of a fair provision for deferred payment, payment by installments
or compensation otherwise than in cash.

(4) In this section, a reference to the taking of possession of property, or the acquisition of an
interest in or right over property, includes a reference to:-

(a) the forfeiture; or

(b) the extinction or determination (otherwise than by way of a reasonable provision for the
   limitation of actions or a reasonable law in the nature of prescription or adverse
   possession), of any right or interest in property.

(5) Nothing in the proceeding provisions of this section prevents:-

(a) the taking of possession of property, or the acquisition of an interest in or right over
   property, that is authorised by any other provision of this Constitution; or

(b) any taking of possession or acquisition:-"
1. taking possession of any property compulsorily; or

2. acquiring and/or extinguishing an interest in, or right over property compulsorily without compensation on just terms. In *Frame v. Minister For Lands*, it was held that compensation on just terms meant "full and adequate compensation for the compulsory taking."\(^{102}\)

However, in my opinion, a water control district could be properly declared, provided the enabling legislation is specifically enacted for that purpose and complies with other constitutional requirements.\(^{103}\) This would bring it within the proviso to s.53(4) of the *Constitution* that compulsory acquisition or restriction on the use of property, or an interest in or right over property, can be made if such restriction is necessary for the preservation of the environment or the national cultural inheritance.\(^{104}\) Even then, it is conceded that, particularly with customarily owned land (i.e., land held under customary land tenure), it can be easier to declare a water control district than to physically and practically implement it because:

\(^{102}\) [1979] PNGLR 626. On appeal to the Supreme Court, it was held that just compensation in accordance with s.53 of the *Constitution* must be reasonable from the point of view of both parties when a balance is struck between their competing interests, and that evidence of what are just terms will require to be examined in the light of the National Goals and Directive Principles and the overall national interest: *Minister for Lands v. Frame* [1980] PNGLR 433.

\(^{103}\) For example, ss. 38 and 39 of the *Constitution*.

\(^{104}\) In its current form, a declaration of a water control district clearly contradicts the constitutionally guaranteed rights of land owners, either lease holders or customary landowners, to the use and enjoyment of their land under s.53 of the *Constitution*: See supra n.70 at p.201.
... the implementation problem of a water control district is clearly demonstrated by the fact that one cannot reasonably expect customary landowners to "simply walk away" from the use and enjoyment (gardening etc.) of their land by a mere declaration without any compensation whatsoever." 105

(ii) Water Use Permits

Any person who wants to use water for purposes other than domestic or customary purposes or for fire fighting 106 must obtain a water use permit. Equally, a permit must be obtained if a person wishes to discharge effluent or waste into any watercourse or to divert a normal flow of the watercourse.

An application for a water use permit must in the first instance be made to the Director of Water Resources in the prescribed form, 107 together with the prescribed fee. The Director will then submit the application to the Water Resources Board for its consideration 108 in accordance with ss. 29 109 and 30 of the Water Resources Act Ch. 205.

106 Sections 21 and 22 supra n.23.
107 There are separate application forms: one for the taking, damming and diversion of water and another for the discharge of water or wastes. These are respectively forms 1 and 2 and are found in Schedule 1 of the Act.
108 Section 28 supra n.23.
109 In particular, s.29 of the Act provides:
"(1) Where an application is submitted to the Board under Section 28 the Board shall advise the Minister responsible for environmental matters:--
(a) in accordance with section 7 of the Environmental Planning Act; or
(b) whether it considers that it is necessary to require an environmental plan under Section 4 of that Act.

(2) In dealing with:--
(a) an application under Section 28; or
(b) a decision of the National Executive Council under Section 33(1)(e); or
(c) a decision of the Board of Appeal under Section 39(1) (c), the Board shall consider the plan and programme for the water use including:--
(d) the environmental plan where a plan has been requisitioned under the Environmental Planning Act or voluntarily submitted under that Act; and
(e) the data and any related information available on the water and water source the subject of the application; and
(f) the projected utilization of the water and the water source; and
(g) the long term and short term objectives of the application; and
(h) the proposal or project, the subject of the application, generally and including alternative sites; and
(i) alternative methods for carrying out the proposal or project, the subject of the application, and recommendation of a particular method; and
(j) the adequacy of proposed water works for the purpose of the application; and
(k) the rights of prior holders or other users of water including any rights under:-
In its deliberations, the Board will, *inter alia*, consider whether an environmental plan under the *Environmental Planning Act* Ch. 370\textsuperscript{110} is required and then advise the Minister for Environmental and Conservation accordingly.\textsuperscript{111}

In dealing with the application, matters that the Board is required to particularly consider include: any environmental plan where one is submitted; the data and any related information available on the water and water source; projected utilisation of the water and water source; and the adequacy of proposed water or water course for the proposed water works, the subject of the application.\textsuperscript{112} The Board is also required to, *inter alia*, circulate notice of the application in the media and invite comments or submission from community and interest groups on the proposed water use permit.\textsuperscript{113} It is required to take such submissions into account in its decision.\textsuperscript{114} After careful consideration of the application, and all other matters brought to its notice by public hearing, the Board then recommends in writing to the Minister for Environment and Conservation the granting or refusal of the permit.\textsuperscript{115} The Minister then makes the decision.\textsuperscript{116} Where a permit is granted, it may be

\begin{itemize}
  \item[(i)] the *Mining Act*; and
  \item[(ii)] the *Petroleum Act*; and
  \item[(iii)] the *Forestry Act*; that may be affected; and
  \item[(l)] where land is to be inundated as a result of proposed water works:-
    \item[(i)] the extent of the inundation; and
    \item[(ii)] the ownership of land affected by the inundation; and
    \item[(iii)] whether the land that may be inundated is to be acquired by the applicant by purchase or lease; and
  \item[(m)] the costs and advantages that may accrue from the proposal or project, the subject of the application; and
  \item[(n)] the permanent changes in the physical, biological, social or cultural characteristics of the affected area that may occur as a result of the proposal or the project, the subject of the application; and
  \item[(o)] any recommendations of the Environmental Contaminants Advisory Council made under the *Environmental Contaminants Act*; and
  \item[(p)] whether the proposal or project, the subject of the application, is in the public interest; and
  \item[(q)] any alterations to a plan or programme during the period of the permit; and
  \item[(r)] any matters that are necessary or that, in the opinion of the Board, are relevant to the application."
\end{itemize}

\textsuperscript{110} *Revised Laws of PNG.*

\textsuperscript{111} Section 29(1) supra n.23. See supra n.109.

\textsuperscript{112} Section 29(2) supra n.23. See supra n.109, where all the necessary factors are set out.

\textsuperscript{113} Section 30 supra n.23.

\textsuperscript{114} Section 31 supra n.23.

\textsuperscript{115} Ibid. Note that special appeal procedures are provided for government bodies if they are aggrieved by the decision or recommendations of the Board and wish to appeal. These are stipulated under ss. 32-39 of the Act.

\textsuperscript{116} Section 40 supra n.23.
interim or final. A permit is for a specified period, and strict terms and conditions for the permit holder to observe are attached with it.

Under s. 42 of the Act, a water use permit confers either of the following rights on the permit holder (depending on the nature of the application and the purpose for which it was obtained): the exclusive right of construction or protection of such water works, subject only to the Director of Water Resources, right of entry for inspection; the right to construct and maintain such water works in accordance with the approved plan; the right to take water at the rate and for the purpose specified in the permit; the right to flood such areas of land as specified in the permit; and the right to discharge water or waste in accordance with prescribed conditions and standards.

In all instances, the holder of a water use permit is required to keep records of all activities pertinent to the permit use and to allow access to the Board, its servants or agents to carry out inspections and measurements. During a drought, the Director of Water Resources may restrict or suspend the exercise of the permit by a notice in the National Gazette in order to ensure water is available for supplying the essential needs of other water users during the period of drought. In relation to consumptive use, annual charges are levied on the basis of volume taken, multiplied by the basic charge, and further multiplied by the so-called use factor. The varying use factors and minimum annual charges are set out at Schedule 2 of the Act. As for non-consumptive use, i.e., the discharge of wastes, etc., into watercourses, the fees are stipulated under Schedule 3 of the Act.

Unfortunately, the Bureau of Water Resources has not maintained accurate records of the total number of water use permits issued to date. Hence, it has only been estimated that in excess of 800 water use permits have been granted/issued to date. The Report to the Special Committee on Review of Water Resources Act found that the permit process is complex and lengthy. Long delays in granting approvals are experienced due to the infrequent (quarterly) meetings of the Board. Hence, the Board itself finds the system largely inappropriate and, therefore, the Minister has in the majority of cases exempted

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117 Section 40(2) supra n.23. Under section 40(3) and 40(4) of the Act, an interim water use permit is granted for the purpose of permitting detailed investigation in a designated area or for the purpose of constructing certain water works in a designated area and for a certain duration: (s.40(4)).

118 See Part IX of the Act

119 Supra n.68 at p.4. See also supra n.70 at p.203.

120 Prepared by the New Zealand law firm, Brandon Brookfield (1988).

121 The relevant Minister is empowered under s.4 of the Act. Section 4(1), in particular, provides:
“(1) The Minister may, on the recommendation of the Board, exempt:-
(a) a person or class of persons; or
(b) an area; or
the Board from complying with the statutory procedures. In practice, water uses that involve major environmental issue are directed to proceed under the *Environmental Planning Act* Ch. 370. This means that an environmental plan must be prepared and submitted, as required under that Act.

A water use permit can be revoked for non-compliance with a prescribed condition\(^{122}\) or for non use.\(^{123}\) Upon the sale of land over which a water use permit has been granted, and remains in force, the permit is transferable to the transferee under s. 41 of the Act. However, the transferee is required to give written notification to the Board within 14 days of becoming the permit holder.\(^{124}\)

(iii) Water Investigation Permits

A water investigation permit must be obtained to:

- carry out investigations or surveys into water resources; or
- carry out pumping tests or to test drill to collect soil or geological samples; and
- install and inspect, operate and maintain gauges, instruments or appliances.\(^{125}\)

Such a permit is not necessary if a person is authorised in writing by the Director of Water Resources to carry out investigations into water resources in the area on behalf of the State.\(^{126}\) A water investigation permit "does not confer the right to authorize the doing of any act prejudicing any customary rights to the customary use of water."\(^{127}\)

To obtain a water investigation permit, a person must apply to the Director of Water Resources, in the prescribed form,\(^{128}\) together with the appropriate fee.\(^{129}\) The Director

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122 Section 45 supra n.23.
123 Section 46 supra n.23.
124 Failing to do so is an offence punishable with a fine not exceeding K100.00: s.41 (3) supra n.23.
125 See section 50 supra n.23.
126 Section 50(a) supra n.23.
127 Supra n.125.
128 The prescribed form is ‘Form 3’ at Schedule 1 of the Act, supra n.23.
129 See Schedules 2 and 3 of the Act. But for the correct and most up to date fee, one is advised to contact the Bureau of Water Resources, Central Government Building, Waigani, NCD. Note that recommendations were made in June 1993 for the increase of fees: See DEC, *Environmental Levies in Papua New Guinea: Review, Discussion and Recommendations*, Port Moresby (June 1994). For an economic evaluation of these, see Manoka B., "Economic Analysis of Environmental Laws: An Evaluation of the Proposed Environmental Levies in Papua New
may then grant the permit for a non-extendable period of one year, attaching specific and appropriate conditions. The permit may be revoked if the holder of the permit does not comply with such prescribed conditions or fails to comply with any other provisions or the Water Resources Act Ch. 205.

A water investigation permit is not assignable without the consent of the Director of Water Resources in writing. Within two months after the expiration or revocation of the permit, the former permit holder is required to furnish to the Director a report of the investigations of water resources carried out under the permit, giving details of the hydrological, geographical, geological and geophysical information collected.

(iv) Control Mechanisms in a Drought Situation

The Water Resources Act Ch. 205 does not define what may amount to a "drought situation." The Collins Reference Dictionary on Environmental Science defines "drought" as an extended and continuous period of very dry weather, or a period in which water supply is insufficient to meet usual domestic, agricultural and industrial demands.

Hence, when a drought situation is threatening, and the Water Resources Board meets and reports accordingly to the Director of Water Resources, and "and the Director considers that there has been or is likely to be" a reduction or alteration in the flow or supply of water in a water source, or, an alteration of a water course, he or she may, by notice in the National Gazette, declare that Part IX [relating to action in case of drought] shall apply in respect of the period and the water sources or part of the water source specified in the notice. After publishing the notice of the drought or the impending drought in the National Gazette, the Director may then give notice in writing to the holder of a water use permit in a specified area. The notice may require the holder to operate water works for a reduced period, or it may suspend the operation of the permit. During this period, the holder of the water use permit will only be allowed to use water for the "minimum essential needs" in the following descending order of priority of purposes: domestic purposes,

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130 See Section 49 supra n.23.
131 Section 53 supra n.23.
132 Section 51 supra n.23.
133 Section 54 supra n.23.
135 Section 55(1) supra n.23.
136 Section 55(2) supra n.23.
watering stock, irrigation and industrial purposes or for generation of hydro-electric power. Failure to comply with these conditions is an offence punishable with a fine of up to K500.00 for everyday on which the breach is allowed to continue.

(v) Catchment Management Areas

In addition to the four mechanisms to control and manage water resource provided in the Water Resources Act Ch. 205, as seen above, the Water Resources Board has also adopted Catchment Management Plans (CMP) in an attempt to provide for the best possible use or combination of uses of water and land resources to meet all foreseeable short and long term needs within a defined watershed. In this regard, the former Director of Water Resources aptly explains that:

"The basic objective in the formulation of catchment management plans is to provide the best use, or combination of uses, of water and water-land resources to meet all foreseeable short and long term needs within a defined watershed. In pursuit of this basic conservation objective, planning for management of catchments with competitive uses of water usually takes into consideration economic development objectives, whilst at the same time considering preservation and social issues of concern."

Under this management approach, the factors that are usually taken into consideration in planning for the management of the catchment are: the competitive uses of water within the particular catchment area; the overall economic development objectives; and any conservation or social issues of concern within the catchment area. Particularly in Papua New Guinea, customary water use right must be given serious consideration in the planning of a CMP.

Watersheds can be studied for specific resource management objectives, such as: to solve a problem caused by water (i.e., for flood control or water quality improvement); the locating of a dam site for hydro-power development, or to meet a demand for water supply such as for municipal and industries uses. Hence, Ward and Fordyce makes the following pertinent observations:

137 Section 55(3) supra n.23.
138 Section 55(4) supra n.23.
139 Supra n.68 at p.4
"On completion, a comprehensive catchment plan may address some or all of the following issues establishing policies and management practices where appropriate:

- Forest (jungle) clearing
- Soil conservation
- Water use control
- Land use control
- Protection and conservation
- Waste disposal
- Water supplies
- Natural hazards
- Sea level rise
- Non-point source pollution
- Navigation
- Water quality

From this list it can be seen that catchment management plans provide for all aspects of catchment management that would otherwise be covered by individual management responsibility in an ad hoc manner."140

So far, there have been two major catchment management studies carried out by the Bureau of Water Resources for the Board. These are of the Yonki and Upper Wahgi watersheds.141

This management approach (i.e., catchment management planning) is not specifically sanctioned by any relevant legislation and, therefore, lacks any legislative force. Hence, one is entitled to hold the view that any plans produced are only, and remain as, policy documents only. On the contrary, it is argued that this management approach can be adopted and properly implemented by the Water Resources Board as a management tool pursuant to the powers and functions given to it under s. 15(1) of the *Water Resources Act* Ch. 205, the pertinent text of which reads:

"(1) The functions of the Board are:

(a) to examine problems concerning and make plans in respect of:

(i) the allocation and quality of water..."

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140 Supra n.49 at 42. Ward and Fordyce go further to explain that:
"Two common components of a catchment management plan are a water allocation plan and a water body classification. Water classification is a planning device whereby standards are assigned to a body of water according to the use to be made of it and allowing changes or increases in use of the water up to the standard originally set. Classification reserves water specifically for recreational, commercial, food gathering and/or waste assimilation uses. Water classification is not well thought of as a management tool as it is not flexible and tends to encourage a reduction in existing standards of water."

141 Supra n.68 at p.5 and supra n.70 at p.205.
6. Compliance Monitoring and Enforcement

The Director of Water Resources is authorised under s. 17 of the Water Resources Act Ch. 205 to conduct official investigations, either personally or through employees, agents or such other persons, and enter any land to carry out such investigations concerning the taking and management of water resources, so as to adopt measures for:

(a) water conservation, regulating the flow of water and to prevent the contamination of water; or

(b) the protection of the bed and banks of any water course, or lake or shore and to remove any obstructions from the bed or banks; or

(c) removing or destroying any unauthorised works affecting the use, flow or control of water.142

The Director or any of his agents are also authorised "to enter on any land within a water control district and carry out such works relating to the use, flow and control of water"143 in a water control district. The hindrance or obstruction of the Director, his employees or agents during such official investigations is an offence punishable with a fine not exceeding K200.00.144

Furthermore, the Director of Water Resources is empowered under s. 18 of the Water Resources Act Ch. 205 to appoint inspectors for purposes of enforcement of the Act. Such inspectors, when appointed, are empowered to enter at reasonable times any land, buildings, waterworks and/or watercourse and:145

"examine and make inquiries in respect of:-

(i) the state and condition of any building and water works; and

(ii) the flow or control of water; and

(iii) the contamination of water; and

(iv) land use; and

(v) any prohibited act referred to in Section s 24..."146

142 Section 17 (1)(a) supra n.23.
143 Section 17(1)(b) supra n.23.
144 Section 17(2) supra n.23.
145 Section 19(b) supra n.23.
146 The relevant provision of s.24 is sub-section (1), which reads:-
"Subject to this section, in a water control district a person who:-
(a) ring-barks, cuts down or destroy trees; or
(b) constructs, alters, removes, repairs, cleanses or scour a drain, trench or channel; or
(c) constructs, alters or removes an embankment against a water course or lake; or
d) constructs, alters or removes an embankment in such a way as:-
Hindrance or obstruction of an inspector in the exercise of his or her duty in accordance with the Act is an offence punishable with a fine of up to K500.00.\textsuperscript{147}

On the topic of compliance monitoring visits to water use permit holders, the immediate past Director of Water Resources observes that:

"It is important to conduct regular compliance monitoring inspections of water users licenced to either take water or discharge wastes into natural watercourses. Compliance monitoring visits are conducted to ensure the permit holders comply with the terms and conditions of the permit, and the regulations and standards of the government. There are over 800 water users licenced throughout the country under the Water Resources Act. Due to severe manpower and financial constraints, it has been very difficult for the Bureau of Water Resources to visit every permit holder’s water abstraction or waste disposal location. Therefore, visits to forestry, mining and petroleum, agricultural and municipal waste disposal sites are conducted quarterly."\textsuperscript{148}

In terms of enforcement, s. 58 is an important provision that includes a general enforcement\textsuperscript{149} section. Owing to its significance, it is quoted in full:

"(1) A person who, being the holder of a permit, contravenes or fails to comply with a condition to which the permit is subject, is guilty of an offence.

(2) A person who, not being the holder of a permit:

(a) dams a river or stream; or
(b) diverts any water; or
(c) discharges water or waste into any water; or
(d) discharges water containing waste onto land or into the ground in circumstances that result in:

(i) the waste; or

\begin{itemize}
  \item[i)] to alter or likely to alter the course; or
  \item[ii)] to impede or be likely to impede the flow or movement or surface water; or
  \item[e)] sinks or constructs a well or water bore; or
  \item[f)] burns off trees, shrubs, plants, grass or foliage, is guilty of an offence. Penalty: A fine not exceeding K500.00."
\end{itemize}

\textsuperscript{147} Section 20 supra n.23.
\textsuperscript{148} Supra n.68 at 5.
\textsuperscript{149} Provision for a general penalty is made under s.59 of the Act in these terms: "A person who fails to comply with a requirement under this Act in respect of which a penalty is not provided is guilty of an offence. Penalty: A fine not exceeding K5000.00 for every day which the breach is permitted to continue."
(ii) other waste emanating as a result of processes from the waste, entering water; or

(e) being the occupier of land, causes or permits waste, emanating as a result of processes from matter previously placed on or discharge onto the land or into the ground, to enter water; or

(f) takes or uses water; or

(g) knowingly causes or permits any chemical, metallic or organic wastes or any unsightly or odorous litter or waste or refuse to enter any water, is guilty of an offence.

(3) A person who acts in contravention of, or fails to comply with, a provision of this Act, or a direction, notice, order or requirement given or made under this Act is guilty of an offence. Penalty: A fine not exceeding K5000.00 for every day for which the breach is permitted to continue.”

In the event, where a corporation is convicted of any offence under the Water Resources Act Ch. 205, and it is established that the offence was committed as a result of commission, omission or negligence of a director, manager, secretary or an agent of the corporation, the person concerned and the corporation can be made personally and severally liable for the offence.150

For purposes of meaningful public participation in the water resource management process, s. 56 of the Water Resources Act Ch. 205 is an important provision. It accords locus standi (i.e. gives standing) on any person, either personally or on behalf of a group or class of persons, to institute proceeding, either criminal or civil, for breaches of any of the provisions of the Act. Without restricting any other rights that a person or class of persons may have under any other law,151 s. 56(1) in particular provides:

"Subject to Subsection (2)152 a person may, on his own behalf or on behalf of a group or class of persons representing that group or class or the public as a whole, take proceedings:--

150 See s.60 supra n.23.
151 Section 56(5) supra n.23.
152 Section 56(2) reads:-
"Proceedings under Subsection (1) shall not be commenced:-
(a) where the State or a government body is proceeding in an action in a court for the same offence or failure to perform an act or duty; or
(b) in any other case before the expiry of 60 days from the service of written notice of the alleged offence or failure to perform an act or duty to:-
(i) the Minister; and
(a) where an alleged offence against this Act has occurred or is likely to occur; or
(b) where there is an alleged failure to perform an act or duty under this Act that is
not discretionary,
in court against:-
(c) the state; or
(d) a government body; or
(e) another person,
or all or any of them jointly."

In spite of the existence of these albeit admirable enforcement provisions and the alleged occurrence of possible breaches of provisions of the Water Resources Act Ch. 205, no person has been prosecuted, nor have civil proceedings been commenced under any of the provisions of the Act to date. This unfortunate situation has been attributed to "severe manpower and financial constraints."

D. Compensation

Section 16 of the Water Resources Act Ch. 205 imposes liability on the holder of a permit (be it a water use permit or a water investigation permit) to pay compensation to landowners (customary or freehold) or other occupiers of land in respect of the permit holder's entry on or occupation of the land. Compensation is to be paid for:

(a) the deprivation of the use and enjoyment of the surface of the land or any part of it,
or of rights to water customarily associated with the land. However, if there has

(ii) the Board; and
(iii) the party responsible for the alleged offence or failure to perform an act or duty."

Section 56(3) goes on to provide that where proceeding are commenced under s.56(2)(a), any person may intervene as a matter of right. Under s.56(4), the relevant court is empowered to make such awards with costs and an order requiring the lodging of a bond or equivalent security, as it thinks fit.

In October 1992, the then Director of the Bureau of Water Resources, Mr Jaru Bisa, said that he was aware of more than 164 illegal attempts made by government institutions and private companies to draw underground water by bores or wells, out of which more than 70 were successful. In view of this situation, he issued a notice in the national daily newspaper, the Post-Courier, saying: "It has come under the notice of the Bureau of Water Resources (BWR), that illegal bores and wells have been installed by various industries and institutions, due to the ongoing water shortage in the National Capital District," he then advised:..." the general public is advised that, it is a requirement under sections 28, 40 and 42 of the Water Resources Act (1982), that all non customary water users must obtain a water use permit, for taking/abstraction of water for domestic and industrial usage.": Post Courier (PNG) 10 November 1992.

Supra n.70 at p.209.

Supra n.68 at p.5.
been a reservation in favour of the State by the landowner of his/her rights to the use and enjoyment of the land in issue, then compensation may not be payable;

(b) damage to the surface of the land, any part of the land, any improvements on the land, or damage to any flora and fauna caused by the carrying on of operations under the permit;

(c) rights of any easements; and

(d) any damage consequential on the holder’s use or occupation of the land, or use or control of water or a water source on or in the land.

Landowners or other occupiers of private land adjoining or in the vicinity of land occupied by the permit holder on the basis of the permit so obtained are also entitled to compensation for any loss or damage sustained as a result of any operations carried on by or on behalf of the permit holder, or by reason of a right of way acquired by the permit holder. The procedure for ascertaining and obtaining the compensation payment is set out under s.16(4)-(14) of the Act. Generally, the parties can themselves agree on the amount of compensation and the manner and time of payment. If there is disagreement, then either party can apply to the Minister responsible for the Minister's decision on the amount of compensation and the manner and time of payment. Any person who is aggrieved by the Minister's decision can apply to the National Court by way of appeal. Under s.16(13), a person who fails to pay the compensation within the time determined by the Minister is liable to face criminal prosecution with a fine of up to K1000.00. Where the compensation is not paid as agreed or as determined by the Minister, the aggrieved person can also apply to the Water Board for it to cancel the permit holder's permit.

The Water Resources Act Ch. 205 does not provide for compensation for all landowners who are deprived of the use and enjoyment of their land when it has been declared a Water Control District, as discussed above. By not providing for just compensation, this part of the Act is clearly inconsistent with s.53 of the Constitution, which protects every citizen from the unjust deprivation of their right to their land and the use of it. To the extent of that inconsistency, the Constitutional Law provision prevails. Therefore, despite the lack of compensatory provisions, compensation must still be paid to those landowners (be it customary, freehold or leasehold) who are affected by the effect of the declaration of a Water Control District under s.23 of the Water Resources Act Ch. 205 where such landowners are deprived of the use and enjoyment of their land. The courts have not had the opportunity to interpret the operation and application of s.16 of the Act on this rather
positive intervention of people living higher up cannot lead to any liability.”

After making reference to the relevant cases on private nuisance at common law, his Honour continued:

“The water was natural, it was always on or coming onto the land by the work of nature, and the State was merely assisting its flow by digging better drains and ensuring the free flow of the river. This is where the water naturally accumulating is allowed to flow freely, in its natural state it would eventually flow down the rivers. There is nothing artificial or unnatural about the draining of a swamp or repairing the banks of a river to ensure a safer flow. People in the Highlands are always digging drains or barrats to drain their garden land. This drainage work cannot be an exception and actionable. Any damage done may just be one of the vicissitudes of life which people face who have land on the banks of a river...”

Mr. Justice Woods’ judgment is open to criticisms mainly for judicial lack of creativity in failing to be mindful of the existing legislative enactments on water resource law (i.e. s.16 of Water Resources Act) and developing an appropriate underlying law along those lines. In my view, the circumstance of the case requires and equity demands that the substantial loss of the plaintiff must be compensated. His Honour’s judgment suffers from inconsistency to the extent that at p. 97 he observed that unless there is no "positive intervention" by people living upstream to cause flooding and erosion, then there can be no liability in this case. The facts of the case clearly show that there was "positive intervention" by the actions of the officers of the defendants which caused the flooding and erosion of the plaintiff’s land and, therefore, the defendant should have been held liable.

His Honour’s observations that "there is nothing artificial or unnatural about the draining of swamps or repairing the banks of a river..." are clearly incorrect in law, since Parts V, VI and VII of the Water Resources Act Ch. 205 require water use permits to be obtained if a person wishes to discharge water into any watercourse or if such person wishes to divert a normal flow of the water sources.

157 Id at p.97.
158 Id at pp.98-99
Thirdly, the current management regime is haphazard and not fully integrated since no, or very little, consideration is given to the impact of other physical development projects\textsuperscript{161} on the water resource. This observation is made particularly on the basis that the \textit{Physical Planning Act 1989} gives no or very little consideration to the impact of construction projects on the ground water quality and on nearby streams. This is an alarming situation, because it is common knowledge that construction projects naturally increase surface run-off and thereby increase stream turbidity and sedimentation, eventually causing surface water and underground water pollution.

The impact of storm water on the water ways and swamps is yet another area that the \textit{Physical Planning Act 1989} has failed to provide adequate control mechanisms.

Given the above situation, it is my submission that the \textit{Physical Planning Act 1989} must be amended to provide for the above shortcomings.

The fourth observation is that most of the penalties provided under the Act for breach of the Act are too lenient. Currently, the maximum penalties range from K100.00 fine to K5,000.00 fine. Given the fact that majority of the consumers who use water at a large scale are business houses and other corporate entities and are many times the defaulters, the current maximum penalties should be doubled or trebled.

\textbf{F. Effect of Legislation on Riparian Rights and Customary Water Rights}

The \textit{Water Resources Act} Ch. 205, in essence, provides a legal and administrative system relating to the use and distribution of water resources and also provides the machinery to adjust likely conflicts between water users. Realising that water is not capable of ownership at common law:\textsuperscript{162}

\textsuperscript{161} Physical development projects are mainly land-based construction projects as carried out under the \textit{Physical Planning Act 1989}. Under Part VI of the Act, development plans may be prepared for physical development in a physical planning area. Under s.45 of the Act, a development plan is essentially a written and illustrated statement of policy and proposals in respect of the development plan area, providing for measures for the improvement of the physical environment and the management of traffic and the zoning of land. It is to be noted that there is no consideration given to the impact of these development projects on water sources.

\textsuperscript{162} Note that earlier legislation commencing from the pre-Independence \textit{Water Resources Ordinance 1962} up until the repealed \textit{Water Resources Act Ch. 205 (pre 1982 legislation)} in fact vested ownership rights on the State.
"The Water Resources Act does not refer to ownership of water, but, instead, provides for the vesting in the State of the right to the use, flow and control of water. The important point to note, then, is that the Water Resources Act does not, in anyway, affect the "ownership" of water, but is aimed at regulating the use of water."\(^{163}\)

With that in mind, the effect of the Water Resources Act Ch. 205 on riparian rights\(^{164}\) and customary water rights\(^{165}\) is briefly considered as follows.

### 1. Riparian Rights

When s. 5(1) of the Water Resources Act Ch. 205 vests the right to the use, flow and control of water on the State and regulates the right of riparian holders under s. 22 of the Act, it merely regulates such rights but does not in anyway extinguish riparian rights.\(^{166}\)

Under s. 22 of the Act, riparian rights are now restricted to taking water for domestic purposes, watering of stock for himself or any family member or employee resident on the land, fire fighting and access for himself, family members or employees resident on riparian land to part of the bank of a watercourse. Under s. 22(2), the Director of Water Resources may place restrictions on the quantity of water a riparian holder may use.

Since riparian rights have not been extinguished by the Act, it necessarily follows that:

"... even where licences have been issued, the common law right will survive to enjoin an upstream diverter from taking water in excess of his licence... In such a case, a riparian will also have a right to claim damages, based on his riparian right, for any injury caused by the excessive diversion."\(^{167}\)

Hence, as late as February 1995, the New South Wales Supreme Court in *Van Son v. Forestry Commission of New South Wales*\(^{168}\) awarded damages for pollution of a riparian owner's water supply by silt. In a commentary on the decision, Lipman notes:

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\(^{163}\) Supra n.49 at p.2.

\(^{164}\) This is considered in detail at Chapter 5.

\(^{165}\) This is considered in detail at Chapter 3.


\(^{167}\) Clark and Renaud ibid, at p.505.

"... Cohen J concluded on a claim for damages that the effect of the Water Act 1912 (NSW) (as amended) and the Water Administration Act 1986 (NSW) was that riparian owners retained their residual common law right to 'use and take water for domestic purposes without sensible alteration in its character or quality' Cohen J. also found for the plaintiff in private nuisance arising out of an unreasonable interference and enjoyment of land."169

2. Customary Water Rights

Section 5(2) of the Water Resources Act Ch.205 clearly provides: "This Act does not affect customary rights to the use of water by the citizens resident in the area in which customary rights are exercised." This, of course, means that customary rights are tacitly recognised and specifically preserved under this provision. The effect of a tacit recognition is to legitimise any notion, or rather concepts, of ownership of water and/or watercourses that may exist in the customary legal order. Such concepts of ownership at customary law are presented in Part III of this thesis. Since customary water rights are specifically preserved, it necessarily follows that customary water rights can co-exist with any water use rights which may be conferred by the statutory licensing process. In the event that there may be conflict or interference with the exercise of a customary water use rights, under s. 16(2)(a) of the Water Resources Act Ch. 205, compensation is payable to the customary rights holder. Even under s. 154 of the Mining Act 1992 and s. 81 of the Petroleum Act Ch. 198, compensation is payable to customary right holders.

G. Conclusion

Water resource management generally refers to the task of regulating water uses amongst competing and varied demands of users mainly through the licensing process. It has evolved through increasing competition for resources and the need to allocate them and maintain a record of what resources are being used, by whom, and for what purpose170 so that best management practices and approaches can be adopted.

169 Ibid. At p.220, Lipman makes the pertinent observation (which I concur with):
"The recognition of residual common law riparian rights of usage does not derogate from the ability of the Crown to appropriate water when it deems appropriate. There seems no substance in the claim that the integrity of the licensing system could be injured if down stream riparians were permitted to being actions."

170 Supra n.49 at p.8.
The Water Resources Act Ch. 205 essentially provides for the regulation and control of the taking, discharge and damming of water in Papua New Guinea for purposes other than those associated with domestic, fire fighting and customary uses. It does not, however, provide for the management and conservation of rivers and or lakes as entities; soil conservation and erosion control of such watercourses; acceptable levels of in-stream flow, and the utilization of other water resources, such as fishery. These are dealt with in the next chapter, Chapter 7.
A. Introduction

The immediately preceding chapter (Chapter 6), specifically addressed the water use rights management regime in Papua New Guinea i.e., the rights to the use and take of water as a resource *per se*. This chapter considers the exploitation, management and conservation regimes of other water resources. The regimes to be considered are: the articulated water supply regime; inland water fishery; inland watercourse (principally rivers and lakes) management; instream flows; and general recreation and conservation regime. These are separately considered.

B. Water Supply and Sewerage Service

The regime for articulated water supply and sewerage services is stipulated under the *National Water Supply and Sewerage Act* 1986.\(^{1}\) The *National Water Supply and Sewerage Act* 1986 (the 1986 Act) essentially establishes the Waterboard as a corporation\(^{2}\) and charges it to provide co-ordinated water supply and sewerage services throughout the country.\(^{3}\) Hence some of the pertinent objectives of the Waterboard include:

(a) to provide and promote water supply and sanitation services by:

(i) making water supply and sewerage services available on a commercial basis to many people in the urban areas; and

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1 This legislation also repeals and replaces the *National Water Supply and Sewerage Act* Ch No 393 and the *Water Supply (Papua) Act* Ch No 328 both of the Revised Laws of PNG.
3 Preamble ibid.
promoting water supply and sanitation with community participation on a self-help basis in the rural areas; and

(b) to keep abreast of and contribute to developments in the field of water supply and sanitation management, and to improve and extend water supply and sanitation services in the light of such developments bearing in mind the needs, goals and aspirations of the people, Governments and business enterprises.

In keeping with these objectives, some of the functions of the Water Board as provided under Section 5 of the Act are:

“(a) to provide water supply and sanitation services to meet the reasonable needs of the urban population, Governments and business enterprises; and

(b) to promote water supply and sanitation in rural areas and urban fringe areas through community participation on self-help bases and where necessary with the help of loans, grants or aid; and

(c) to maintain its assets in good order; and

(d) to exercise such control as the Waterboard may determine over persons and organizations providing water supply and sanitation services, or services relating to water supply and sanitation; and

(e) to set standards as the Waterboard may determine for materials and equipment used in water supply and sanitation; and

(f) to advise the National Executive Council on all matters relating to water supply and sanitation; and

(g) to engage in research related to water supply and sanitation activities:....”

Under Section 27 of the Act, the Waterboard recommends to the relevant Minister for a particular area to be declared a water supply district or a sewerage district. Upon

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4 Section 6(c) supra n. 2.
5 Section 6(f) supra n.2.
6 At the time of writing, it was the Minister for Works.
7 Under Section 3 of the Act, a “water supply district” is merely defined as “an area declared under Section 27 to be a water supply district.” This clearly refers to a given geographical location as specified in the instrument of declaration.
declaration by the Minister concerned by way of gazettal in the National Gazette,⁹ the
Waterboard acquires the exclusive right to operate and maintain water supply and sewerage
systems. Since the Act came into operation,¹⁰ and by invocation of this process, the
Waterboard has been responsible for all water supply and sewerage services in the
country¹¹ except the National Capital District (NCD). Until mid 1996, the National
Capital District Commission (NCDC), being the responsible urban city council, was
empowered under the National Capital District Commission Act to operate and maintain
water supply and sewerage services for a fee in the NCD.¹² Since then, the water supply
and sewerage functions have been taken over by a state owned company incorporated under
the Companies Act Ch 146 called Eda Ranu. Eda Ranu now provides all water and
sewerage services in the NCD.

The Waterboard is also responsible for formulating policy and setting standards for, and
to establish, and maintain a system of licencing and regulation of plumbers through the
country.¹³

Even in areas where the Waterboard does not operate water supply and sewerage
systems, it is the responsible authority to license and set licencing fees for the operation of
such systems by another person or authority.¹⁴

Section 26(4) of the Act then provides:

“A person who, without the prior approval of the Waterboard, constructs, operates
or manages any public water supply and sewerage system, is guilty of an
offence. Penalty: A fine not exceeding K10,000.”

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⁸ Under Section 3 of the Act, a “sewerage district” is defined as “an area declared under Section
27 to be a sewerage district.” Again this refers to a geographic location as specified in the
declaration.
⁹ Section 28 supra n. 2.
¹⁰ All provisions of the Act except Section 39(b) came into effect in January 1987. Section 39(b)
came into effect on 1 July 1987.
¹¹ To date, this has been mainly in the urban areas.
¹² There has been running tensions between the two organisations as to who should control the
water supply and sewerage services in NCD.
¹³ Section 26(1) supra n. 2.
¹⁴ Section 26(2) supra n.2. Note that under Section 26(3): “Any tariff set in respect of a water
supply or sewerage system not operated by the Waterboard shall be submitted to the Waterboard
and shall have no effect until approved by the Waterboard, except that any such tariff in effect
immediately before the coming into operation of this Act shall be deemed to have been
approved by the Waterboard until further advise by the Waterboard.”
In relation to water quality standards to be observed and enforced for the purposes of the Act, water quality standards set under the *Public Health Act* Ch No. 226 and the *Water Resources Act* Ch No. 205 are adopted.

1. **Riparian and Customary Rights to Extract Water For Domestic Use**

   The interaction and interplay between the water use rights provisions of the *Water Resources Act* Ch 205 and the *National Water Supply and Sewerage Act* 1986 is not exactly clear. Nevertheless, in relation to riparian rights and customary rights to take water for domestic purposes or stock watering purpose in a water supply district declared under the *National Water Supply and Sewerage Act* the following opinion is offered. First, under sections 21 and 22 of the *Water Resources Act* Ch 205, a riparian right holder is allowed to take water without charge from a watercourse for domestic or stock watering purpose for himself or members of his family resident on the land and for his/her employees so resident. To do so, the riparian right holder is allowed to “place a permanent installation for taking water in, or on the land adjacent to, the water course.” Viewed liberally, this may very well, in some instances, depending on the number of family members and employees resident on the riparian land, amount to a small to medium size water supply scheme. Could this then be in breach of Section 26(4) of the *National Water Supply and Sewerage Act* that renders such activity illegal? Depending on the scale and whether the riparian charges fees, the answer can go either way. If it is at a small scale and fees are not levied, the answer is no because the riparian right holder will be acting within rights accorded under another legislation or common law for a specified purpose. If otherwise and, in particular, where the riparian supplies water at a fee to other members of the public within his vicinity, it may well be so.

   Secondly, by operation of Section 5(2) of the *Water Resources Act* Ch 205 “customary rights to the use of water by the citizens resident in the area in which those customary rights are exercised” are not affected in any way by the regulatory regime of the Act.

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15 See s 56 of the Regulations which provide minimum water quality standards. These we discussed in the latter discussion on pollution in this Chapter.
16 Quality standards for water are provided under Schedule 4 of the Act. These are discussed later under the subject of pollution in this Chapter.
17 Section 22(1)(a) *Water Resources Act* Ch No 25 Revised PNG.
18 Section 22(4) ibid.
19 Customary rights are referred to a “customary rights to the use of water” and defined as “rights to the use of water - (a) that are authorised by custom; and
That of course means that customary right holders are at liberty to use water as they see fit in accordance with their custom. The question then is posed: could customary right holders organise themselves and set up articulated water supplies and provide such service to the other members of their community who are not necessarily members of their clan or village? Provided such an activity can be established to be “authorized by custom”, the question is answered in the negative. But undoubtedly, customary right holders are at liberty to obtain water through pipe installations for their domestic, agricultural and other associated usages even if this involves large organised communities because the extraction of water through mechanised installations merely improve the technique and technology of delivery but serves the same customary usage and purpose.

2. Application of the Water Resources Act to the Waterboard

The Waterboard is a corporation created by the National Water Supply and Sewerage Act 1986 for the exploitation of water by “co-ordinating planning, design, construction, management of, and charging for, water supply and sewerage services through the country.” Just as the other corporations are subject to the various regulatory regimes of their resource sectors, the Waterboard is subject to the water resource management and regulatory regime under the Water Resources Act Ch 205. This of course means that the Waterboard is required to obtain the necessary water use permits and observe all the other regulatory provisions pertinent to the exploitation and utilisation of water under the Water Resources Act Ch 205.

3. Public Health Act and the Waterboard

The following by-laws made under Section 141 of the Public Health Act Ch 226 are of significance and pertinence to the activities of the Waterboard:

(b) that are being availed of at the time in question or, in the normal course of land management, would be availed in a customary manner within a reasonable period after that time”: Section 2 supra n. 17.

Ibid.

Section 1 supra n. 2.

For example, the Mineral Resources Development Company (MRDC) a government owned company engaged in the mining and petroleum industries is subject to the Mining Act 1992 and Petroleum Act Ch No. 198 Revised Laws of PNG.

Unless exemption is granted under Section 4(1) of the Water Resources Act Ch 205 that says: “The Minister may, on the recommendation of the Board, exempt - (a) a person or class of persons; or (b) an area; or (c) a water use, from any provisions of this Act.”
(a) *Public Health (Sanitation and General) Regulation*;
(b) *Public Health (Septic Tanks) Regulation*;
(c) *Public Health (Sewerage) Regulation*; and
(d) *Public Health (Underground Water Tanks) Regulation*.

Regulation (a) provides the general regime for the provision and manner of discharge of sewerage and other refuse; Regulation (b) sets out the standards for septic tanks etc; Regulation (c) sets out the sewerage treatment standards and Regulation (d) sets out the guidelines and standards for the installment of underground water tanks. These by-laws are of equal application to any other person or entity who is engaged in the construction or provision or maintenance of septic tanks, sewerage treatment and disposal systems and underground water tanks.

C. Pollution Control and Water Quality Standards

In here, we must first of all be reminded that:

> "The enjoyment of river water exists either in its removal for public supply, industry, agriculture, etc., or its use within the channel for fishing navigation, recreation and so forth. A further benefit of a river is its potential as a dispository for effluents and waste water, provided that neither water pollution nor flooding is occasioned."24

The principal statutory provision that deals with unauthorised discharge of effluents into water and hence causing water pollution is Section 58(2) of the *Water Resources Act* Ch 205. That provision reads as follows:

> "A person who, not being the holder of a permit -

(c) discharges water or waste into any water; or

(d) discharges water containing waste on to land or into the ground in circumstances that result in -

(i) the waste; or

(ii) other waste emanating as a result of processes from the waste,

entering water; or ..."

---

(g) knowingly causes or permits any chemical, metallic or organic wastes or any unsightly or odorous litter or waste or refuse to enter any water, is guilty of an offence.”

The offence attracts a penalty of a fine not exceeding K5 000 for every day for which the pollution is unabated.25

Regulations made under the Public Health Act Ch 226 also provide for the prevention of the pollution of natural watercourses and the maintenance of the purity of water supply. Perhaps the most relevant regulation in this instance is the Public Health (Sanitation and General) Regulation. Under Section 55 of this Regulation, “water supply” is expansively defined to include “a river, spring, stream, water course, creek, swamp, waterhole, lake, pond, tank, dam or reservoir.” Then Section 58 of the Regulation provides:

“A person who deposits or permits to be deposited in any place any offensive matter or thing by which a water supply is liable to be polluted is guilty of an offence,

Penalty: a fine not exceeding K1000.00.”26

Apart from these statutory provisions, under common law, pollution of water that interferes with property rights attaching to rivers and water courses may give rise to a civil action for damages and/or injunction. The often cited authoritative statement for this proposition is that of Lord M’Naghten in John Young & Co v. Bankier Distiller Co where his Lordship said:

“Every riparian proprietor is thus entitled to the water of his stream, in its natural flow, without sensible alteration in its character or quality.”27

A civil action in such instance may generally be based on private nuisance and/or negligence.

These common law principles apply in Papua New Guinea as part of the underlying law.28

The effluents which may be lawfully discharged into a watercourse by obtaining a water use permit under the Water Resources Act Ch 205 fall under three categories: (a) sewage; (b) industrial wastes of the nature of agricultural and horticultural wastes, meat processing

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25 See also Sections 59 and 60 supra n. 17.
26 For effective punishment and deterrence, it would be adviceable to prosecute offenders under Section 58(2) of the Water Resources Act Ch 205.
27 [1893] AC 691 (HL).
and packaging industry wastes etc.; and (c) industrial wastes of agricultural and horticultural origins associated with coffee, oil palm, cocoa, sugar and food processing. The applicable fee charged under the Act for discharge of such wastes are set out under Schedule 3 of the Act. This is set out below as Figure 1.

**Figure 1: FEES FOR DISCHARGE OF WASTES**

1. **Sewage.**
   Basic charge — K0.05/m³/year.
   FORMULA:
   Annual charge — 0.05 x volume x treatment factor.
   \[
   (K/\text{year}) \times (K/m^3) \times (m^3/\text{year})
   \]
   
<table>
<thead>
<tr>
<th>Type of Sewage Treatment</th>
<th>Treatment Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>No treatment — this includes sewage that is screened and macerated</td>
<td>1.0</td>
</tr>
<tr>
<td>Primary treatment (screened and settled) providing the retention time in sedimentation tank is at least 45 minutes</td>
<td>0.6</td>
</tr>
<tr>
<td>Secondary treatment (trickling filters, activated sludge, oxidation ponds or lagoons), providing sewage loadings do not exceed manufacturers recommendations</td>
<td>0.3</td>
</tr>
<tr>
<td>Tertiary treatment (all forms of advanced sewage treatment)</td>
<td>0.01</td>
</tr>
</tbody>
</table>

2. **Industrial Wastes.**
   Basic charge K0.34/kg biochemical oxygen demand (5 day)/year.
   These include—
   (a) agricultural and horticultural wastes; and
   (b) meat processing and packaging industry wastes; and
   (c) wastes of a similar kind, consisting predominantly of organic wastes that contain substantial numbers of bacteria and viruses pathogenic to man.

3. **Industrial Wastes.**
   Basic charge K0.25/kg biochemical oxygen demand (5 day)/year.
   These include—
   (a) agricultural and horticultural wastes associated with—
   (i) Coffee; and
   (ii) oil palm; and
   (iii) cocoa; and
   (iv) sugar, industries; and
   (b) food processing wastes consisting predominantly of organic wastes that are free of bacteria and viruses pathogenic to man.

**SOURCE:** *Water Resources Act* Ch 205.

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28 See Schedule 2 of the Constitution.
Note that when an application is made for a water use permit to discharge waste or water into a water, among other things, the applicant is required to give details of the water course to which the discharge is to be made; the volume of water to be discharged and the nature and characteristics of the waste, in particular the biochemical oxygen demand and variation, pH and variation range, temperature and variation range, appearance, color, smell and variations, chemical nature including chemicals present and likely to be present etc.

In relation to water quality standards, section 7(2) of the Regulations of the Water Resources Act Ch 205 provides:

"Any discharges to, or use of, water must not cause a lowering of water quality below the prescribed standards, subject to the allowance for mixing of wastes with the receiving water."

Sub-sections (6) and (7) of Section 7 of the Regulation of the Act go onto say:

"(6) The water quality standards specify, unless stated otherwise, maximum permissible levels or limits of various substances and parameters unless the natural level is greater.

(7) A discharge into, or use of, water must not increase the level of any substance or parameter above that prescribed or above the maximum level to be found naturally.

Penalty: A fine not exceeding K5,000.00.

Default penalty: A fine not exceeding K2,000.00."

The appropriate water quality standards are as stipulated under Schedule 4. These are set out below as Figure 2:

**Figure 2: QUALITY STANDARDS FOR WATER**

**TABLE 1**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Fresh water.</th>
<th>Sea water.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia-nitrogen</td>
<td>Dependent on pH and temperature (See accompanying Table 2.)</td>
<td></td>
</tr>
<tr>
<td>Arsenic</td>
<td>0.05</td>
<td>0.05</td>
</tr>
<tr>
<td>Barium</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Boron</td>
<td>1.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Cadmium</td>
<td>0.01</td>
<td>0.001</td>
</tr>
<tr>
<td>Chlorine (total residual)</td>
<td>0.005 at pH6</td>
<td>0.005</td>
</tr>
<tr>
<td>Chromium (as hexavalent form)</td>
<td>0.05</td>
<td>0.01</td>
</tr>
<tr>
<td>Chlorine (total residual)</td>
<td>0.005 at pH6</td>
<td>0.005</td>
</tr>
<tr>
<td>Chromium (as hexavalent form)</td>
<td>0.05</td>
<td>0.01</td>
</tr>
</tbody>
</table>

---

29 See Section 28(1) and Form 2 “APPLICATION FOR WATER USE PERMIT TO DISCHARGE WATER OR WASTES” supra n. 17.
Colour
Cobalt
Copper
Cyanide (as HCN)
Faecal coliform bacteria
(See Note 1.)
Fats
Fluoride
Grease
Insoluble residues
Iron (in solution)
Lead
Manganese (in solution)
Mercury
Nickel
Nitrate (as $\text{NO}_3^- + \text{NO}_2^-$)
Odour

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Fresh water</th>
<th>Sea water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Oxygen</td>
<td>Not less than 6.0</td>
<td>Not less than 5.0</td>
</tr>
<tr>
<td>Pesticides</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>pH</td>
<td>No alteration to natural pH</td>
<td></td>
</tr>
<tr>
<td>Phenols</td>
<td>0.002</td>
<td>0.002</td>
</tr>
<tr>
<td>Potassium</td>
<td>5.0</td>
<td>450</td>
</tr>
<tr>
<td>Radioactivity</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Selenium</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Silver</td>
<td>0.05</td>
<td>0.05</td>
</tr>
<tr>
<td>Sulphate (as $\text{SO}_4^{2-}$)</td>
<td>400.0</td>
<td>–</td>
</tr>
<tr>
<td>Sulphide (HS⁻)</td>
<td>0.002</td>
<td>0.002</td>
</tr>
<tr>
<td>Tars</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Taste</td>
<td>No alteration to natural taste</td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>No alteration greater than (2°C)</td>
<td></td>
</tr>
<tr>
<td>Tin</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Toxicants, miscellaneous</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Turbidity</td>
<td>No alteration greater than 25 N.T.U.</td>
<td></td>
</tr>
<tr>
<td>Zinc</td>
<td>5.0</td>
<td>5.0</td>
</tr>
</tbody>
</table>

**TABLE 2**

*Maximum Permitted Concentrations of Ammonia-nitrogen*

<table>
<thead>
<tr>
<th>Temperature</th>
<th>-0</th>
<th>8.0</th>
<th>9.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>16.1</td>
<td>1.6</td>
<td>0.2</td>
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**NOTE 1.** - Faecal Coliform Bacteria Standards.
Based on no fewer than five samples taken over not more than a 30 day period, the median value of the faecal coliform bacteria content of the waters must not exceed 200 per 100 ml.

In the event that reliable scientific data indicates that these standards are not appropriate for particular specified waters or for the use of those such waters, the standards are to be modified by the Water Resources Board constituted under Section 9 of the Water Resources Act Ch 205 to meet the requirements pertaining specifically to those such waters and their uses.\textsuperscript{30}

The water quality standards as set out above at Figure 2 are only subject to change when scientific advances necessitates their modification.\textsuperscript{31}

D. Inland Water Fishery

Macrory pertinently observes that at common law:

"The right to fish or 'fishery', has been treated as a profit of the land over which water flows and there is a general presumption that the owner of the bed of a non-tidal river possesses the exclusive right to fish in that water. In tidal waters, however, where the Crown generally owns the soil underneath the waters, the public will have a common right of fishing subject to some limited exceptions."\textsuperscript{32}

By way of Schedule 2 of the Constitution, these common law principles apply in Papua New Guinea as part of the underlying law but provided these principles are neither inconsistent with a statute law, nor customary law. And further more that these principles pass the general circumstantial applicability test. These principles are clearly in accord with customary law\textsuperscript{33} and hence would be generally applicable to the circumstances of Papua New Guinea. A point of contention is whether these principles are consistent with statute, namely the Fisheries Act 1994.\textsuperscript{34} Section 3(1) of the Fisheries Act 1994 quite clearly provides that subject to Section 3(2),\textsuperscript{35} this Act applies to all persons and boats that

\textsuperscript{30} Section 7(4) Water Resources Regulations Ch 205.
\textsuperscript{31} Section 7(5) ibid.
\textsuperscript{33} See Chapter 3 supra.
\textsuperscript{34} No 21 of 1994.
\textsuperscript{35} And Section 3(4) that exempts the area to which the Fisheries (Torres Strait Protected Zone) Act Chapter No. 411 of the Revised Laws of PNG.
engage in fishing in Papua New Guinea waters. The proviso under Section 3(2) is in these terms:

“Unless otherwise specified by or under this Act, the provisions of this Act do not apply to or in relation to the taking of fish -

(a) for consumption, and not for sale or trading or for manufacturing purposes; or
(b) for sport or pleasure; or
(c) by traditional fishing; or
(d) by artisanal fishing.”

Hence provided a raparian, fish for consumption only; or for pleasure or sports; or traditionally or artisanally; the regulatory regime of the *Fisheries Act* 1994 will apply. This therefore means any person who wish “to engage in fishing or related activity” except as otherwise stipulated under Section 3(2) of the Act, must obtain a licence from the National Fisheries Board under Section 53 of the *Fisheries Act* 1994.

The position in relation to customary water right holders under customary law who exercise “traditional fishing” rights is quite different to the above. “Traditional fishing” rights are defined under Section 2(1) of the Act as “fishing by indigenous inhabitants, in waters where they are entitled by custom to fish where -

(a) the fish are taken in a manner that, as regards the boat, the equipment and the method used, is substantially in accordance with their customary traditions; and
(b) the fish are taken for domestic consumption or customary, social or ceremonial purposes.”

Then, Section 36 of the *Fisheries Act* 1994 in turn expressly recognises and allow for the rights of customary owners of fisheries resources. The text of Section 36 thus reads:

“The rights of the customary owners of fisheries resources and fishing rights shall be fully recognized and respected in all transactions affecting the resources or the area in which the right operates, and owners of resources and rights shall not be deprived of their traditional fishing rights.”

Hence, traditional fishing rights of customary water rights holders and users are not affected by the *Fisheries Act* 1994.
1. Prohibited Fishing and Related Activities

Despite the exemption from the regulatory regime of the *Fisheries Act* 1994 accorded under Section 3(2) of the Act for consumptive fishing, game fishing, traditional fishing, artisanal fishing etc., Section 52 of the Act provides certain prohibitions which apply to all forms of fishing and related activities. Hence, the restrictions set out under s 52(3) not only applies to commercial fishing but also to artisanal, traditional and game fishing. Thus, the following activities are prohibited:36

(a) the taking from a specified area of water during specific period of time or at all times:
   (i) fish or fish included in a specified class of fish; and
   (ii) in the case of specific class of crustaceans, females having eggs or spawn attached to them; or
(b) processing on a boat in a specified area of water during a specified period of time or at all times such fish in the prohibited class of fish; or
(c) the taking of fish included in a specified class of fish from any area of waters that:
   (i) are less than a size specified; or
   (ii) are greater than a size specified; or
   (iii) have a dimension less or greater than a dimension specified; or
   (iv) have a part with a dimension less or greater than a dimension specified in relation to that part; or
(d) the taking of fish or of fish included in a specified class of fish from any area of waters:
   (i) by a specified method or equipment; or
   (ii) by person other than a specified class of persons; or
   (iii) by boats other than a specified class of boats;
(e) the landing, sale, receiving or possession of fish or of fish included in a specified class of fish; or
(f) a person having in his possession or in his charge in a boat, in any area of waters, equipment of a specified kind of taking fish unless the equipment is stowed and secure; or

36 S.52(3) (a)-(i) supra n.34.
(g) a person from using, or having in his possession or in charge in a boat, in any area of water, a quantity of equipment of a specified kind for taking fish that is a quantity in excess of a specified quantity; or

(h) a person from using or having in his possession or in his charge in a boat, in any area of waters prohibited equipment unless such equipment is registered or licensed; or

(i) the conduct of a specified type of related activity;
   (i) absolutely; or
   (ii) by persons other than a specified class of persons; or
   (iii) in a specified manner.

The specified prohibition notices are issued by the Minister from time to time upon the recommendations of the NFA. Where appropriate, the notices may contain appropriate exemption. The duration of the exemption shall be for a period not exceeding three months.

With the exception of artisanal fishing, fishing without a licence is an offence under s 55 of the Act. It is also an offence to breach any of the fishing prohibitions under s 56 of the Act. The penalties for both offences are: in the case of a crew member, a fine not exceeding K2,000; in the case of any other natural person, a fine not exceeding K25,000; and in the case of a corporation, a fine not exceeding K50,000. Certain methods of fishing, such as the use of explosives or other noxious substances are outlawed under s 58. Penalties under this provision range from a fine of up to K500.00 and K5,000 to imprisonment for terms not exceeding two years.

E. Inland Watercourse Management

As yet there is no specific legislation dealing with the management and use of rivers and lakes or such other watercourses in Papua New Guinea. Indirectly though, a number of other nature conservation legislations and the activities conducted under these legislations do impact on the management of rivers, lakes and other watercourse. These are in the

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37 S.52(3) (a) supra n.34.
38 S.52(4) supra n.34.
39 S.52(5) supra n.34.
40 For the extent of enforcement powers of the fisheries officers, see ss.61-69 of the Act. For an earlier case dealing with powers of search and entry of fisheries officers under the Fisheries Act Ch.214, see Application of Chai Sheng [1993] PNGLR 105.
main, the *Conservation Areas Act* Ch 362 and the *National Parks Act* Ch 157. To some extent, the *Water Resources Act* Ch 205 does impact on the management of watercourses. These will be separately considered.

1. **Conservation Areas Act** Ch 362 (Revised Law of PNG)

   The *Conservation Areas Act* Ch 362 is the primary legislation that provides for the protection, preservation and management of "sites and areas having particular biological, topographical, geological, historic, scientific or social importance." A National Conservation Council is created under s 4 of the Act to advise the Minister responsible for the environment and conservation on all matters relating to conservation and management of conservation areas under the Act.

   A conservation area is declared upon the recommendation of the Minister to Cabinet and by the Head of State acting with and in accordance with the advice of Cabinet. A conservation area can be declared over either a state land, private land or customary land. Hence under s 10(2) of the Act, any person, persons or authority can request by writing to the Minister for any area to be declared a conservation area. Once an area is declared a conservation area:

   a) Conservation Area Management Committees are established to draw up a management plan and to manage the particular conservation area in accordance with such plan and to advise and recommend to the Minister on the rules and regulations of the particular conservation area. Any person who is found to be in breach of any of the rules and regulations of a particular conservation area is liable to a fine not exceeding K500.00 or in default, K200.00; and

   b) Development in conservation areas is restricted except in accordance with terms of a management plan of the area or in accordance with written

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41 Preamble to the *Conservation Areas Act* Ch.No.362 of the Revised Laws.
42 See s.9 of the Act.
43 See s.12-14 of the Act.
44 S.15-16 of the Act.
45 S.17 of the Act.
46 S.25. Under s.25(3) of the Act: "Membership of the Committee shall reflect the interests of - (a) the ownership of the land within the conservation area; and (b) the provincial government or provincial government body, Local Government Council or Local Government Authority in the province or areas within which the conservation area is situated."
47 S.27 of the Act.
48 S.28 of the Act.
approval from the Minister. Any grant of development approval in here does not relieve a proponent from compliance with the requirements of other relevant law. Note that under s 35 of the Act, any person who develops or permits development or alters or permits alteration of the existing land use in a conservation area except within a management plan or a written approval of the Minister, is liable to prosecution. The offence attracts a fine not exceeding K40,000.00 or in default, a fine not exceeding K4,000.00.

Hence, if the area declared a conservation area has in its territory a river, lake or a water course or parts of such, that effectively provides a site specific management regime for the conservation and management of that particular river, lake or watercourse.

2. The National Parks Act Ch 157 (Revised Laws of PNG).

This legislation provides for the establishment/development, control and management of parks and reserves out of/in areas of outstanding scenic, historic and scientific value. A National Parks Board is established under Section 3 of the Act to implement and manage the parks and reserves established under the Act.

While in a park or reserve, a person is not allowed to, inter alia:

(a) leave any litter, rubbish or any noxious, offensive or polluting substance; or
(b) foul the water in a river, lake or other watercourse on or flowing through the reserve; or
(c) dig, cut, collect, remove or interfere with any sand, soil, clay, gravel, rock, mineral, shell, fossil, timber, humus or other natural substance or object whether on or under water, except with the consent of the National Parks Board; or

49 S.31 of the Act. The process of obtaining such approval from the Minister is set out under ss.32-34 of the Act.
50 S.42 of the Act.
51 Note that under s.35(3) of the Act: “It shall not be a defence to an action for an offence under this section that the development or alteration to the existing use of land did not adversely affect the environment.”
52 See Sections 11 and 12 National Parks Act Ch. No. 157 Revised Laws of PNG.
53 For a full account of the prohibited activities, see Section 7 National Parks By-laws Ch. No 157 Revised Laws of PNG.
54 Section 7(1)(a) ibid.
55 Section 7(1)(e) ibid.
56 Section 7(1)(d) ibid.
d) damage, deface or interfere with -
   (i) a rockface or other natural object or feature; or
   (ii) a walk, drive, reservoir, dam, tank, bank, drain or other work,
except with the consent of the National Parks Board; or

e) fish without a permit obtained from the National Parks Board.

Any person found to be in contravention of these restrictions is liable for a fine not exceeding K100.00. In my view, the punishment is too lenient and therefore may not serve as an effective deterrent and consequently expose the parks and reserves to a higher danger of abuse. Nevertheless, where a river, lake or other watercourse or part of it is within a park or reserve, that offers it some protection and is subject to the parks and reserves management regime. In fact some rivers and watercourses have been managed under this regime. These are the Jimi River in the Jimi Valley National Park in the Western Highlands Province, and a tributary of the Wau River in the McAdam National Park in the Morobe Province.

3. The Water Resources Act Ch 205

Under this legislation, in particular under Section 15(1)(a), the Water Resources Board is empowered:

"(a) to examine problems concerning, and make plans in respect of -
   (i) the allocation and quality of water; and
   (ii) the control -
   (A) of erosion on the banks of rivers and shores of lakes and coastal shores; and
   (B) of flow and flooding in and from rivers and lakes; and
   (iii) the conservation of water; and

57 Section 7(1)(g) ibid.
58 Section 7(1)(d) ibid. Under Section 11(1) of the National Parks By-laws Ch. 157, the National Parks Board "may issue permits to authorize fishing in a reserve or a specified part of a reserve, generally or for a particular kind of fish, and may specify a minimum size for all or any of the fish to which the permit relates." Then Section 11(2) go on to say:
   "An application for a fishing permit shall specify -
   (a) the name and address of the applicant; and
   (b) the description of the equipment that he intends to use; and
   (c) the name of the reserve."
Hence, a permit issued will be of local application only to the particular reserve concerned.
59 Section 7(4) supra n. 53.
It is my contention that the Water Resources Board through the Bureau of Water Resources (BWR) should develop and put in place guidelines for the conservation, development and management of rivers, lakes and other watercourses. To date no such guidelines exist. However, the comprehensive catchment management planning (CCMP) programme recently adopted by the Board through the BWR offers some promise to rivers and lakes and their catchment for their management through co-ordinated land use and water use planning.

4. Summary Offences Act Ch 264

The Summary Offences Act Ch 264 contain useful provisions which can be utilized to enforce and preserve watercourses and the water in the watercourses. Section 35 of the Act makes it a criminal offence punishable with a fine not exceeding K100.00 for any person to leave or cause to leave a dead animal either in or near any watercourse. With the same penalty, s. 36 further provides:

“A person who throws or drops any filth or rubbish into or otherwise pollutes any river, creek, canal, watercourse, well, water-tank or water storage is guilty of an offence.”

Under s. 37(1) of the Act, it is an offence punishable with a penalty of K100, if a person obstructs a watercourse without any reasonable excuse. It is however a defence under s. 37(2) of the Act to the charge under s. 37(1) if the person charged proves:

“(a) that he is a member of a customary group or community; and

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61 CMP is a system that attempts comprehensive water resource management by controlling water use and land use and regulating such “uses based on the understanding of the whole catchment and the formulation of clear objectives and policies for multipurpose use of the catchment. It therefore has two fundamental components:
(a) a regulatory system whereby use of water and land resources is recorded and monitored and in some cases licensed;

62 At least two catchment management plans have been carried in Yonki for the Yonki dam watershed and the Upper Waghi Watershed of the Waghi River.
(b) that it is traditional for members of that customary group or community group to obstruct that creek or other watercourse for the purpose of catching fish.”

It is conceded that the penalties for these offences are near to negligable and therefore as they currently are, do not sufficiently deter people from either polluting or obstructing watercourses. The relevant governmental agencies such as the BWR should now take steps to cause an amendment through the legislature to increase the penalties so that potential offenders can be truly deterred.

F. Instream Flows

In this regard, the following observations by Ward and Fordyce are apt:

“With the increasing awareness of cultural and wildlife conservation areas has become a widespread understanding of the need for minimum flows to be maintained in waterways. The setting of minimum flows is an allocation mechanism setting lower limits on flows left in a waterway (after consumptive uses have been taken into account) to provide for instream users including customary users, wildlife (including fisheries), cultural and spiritual values, recreation and navigation.”

It is indeed being increasingly recognised the world over that the maintenance of certain minimum flows in river, lakes and other watercourses to sustain instream use and aquatic life and to sustain an ecological balance is as important as extractive consumption. Particularly in a country like Papua New Guinea where majority of the people like subsistence-hunter-gatherer-fishing life for their daily sustenance, the need is real and more pressing.

Generally though, one cannot hide the fact that there is growing demand in many communities for recreation and outdoor use and enjoyment of rivers, lakes and other water courses. Some perhaps may simply want to enjoy the aesthetic pleasures of a beautiful

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63 Supra n.61 at 34.
river or lake. Instream flows are also crucial for the preservation and maintenance of wildlife habitat, particularly for aquatic wildlife and many other forms of fauna and flora.

With regard to pollution control, instream flows are also important. This is perhaps best captured by Hauffman in these terms:

"The effort to control water pollution has also led to a new demand for leaving water in the rivers and streams. The concentration of pollutants is directly related to the volume of streamflows. Although environmental pursuits object to dilution as a strategy for pollution control, it is an effective means of compliance with water pollution laws."65

It is therefore necessary that where extractive water use results in or threatens to result in significantly diminished instream flows, the government should regulate by way of legislation to limit withdrawals. To this day in Papua New Guinea, there is no such legislation or statutory provision. It is however submitted that the Water Resources Board under its wide water resource management functions as stipulated under Section 15 of the Water Resources Act Ch 205 may lawfully issue regulations to set acceptable and appropriate instream flows in the rivers, lakes and other watercourses of Papua New Guinea.

G. Conclusion

At the end of this chapter, one now realises that there are indeed other management regimes that impact on the overall water resources management apart from the Water Resources Act Ch 205. In fact, it now becomes more apparent that the Water Resources Act is primarily concerned with the allocation of water use rights but has little to do with conservation and management of the watercourses as sources of the water resource and for instream demands. This chapter has shed some light on the available legal instruments and mechanisms which could be utilised to develop holistic watercourse management regime.

65 Supra n.64 at
PART III

Case Studies Of Ownership Claims To Watercourses And Water Use Rights At Customary Law In Papua New Guinea

Introduction to Part III

Despite the fact that custom is adopted under Schedule 2.2 of the Constitution and hence applies in Papua New Guinea as part of the underlying law, custom is however treated as a matter of fact and not law and therefore is to be pleaded and proved as fact before it is accepted and applied as law. Section 5 of the Customs Recognition Act accordingly provides that "questions of the existence and the nature of native custom in relation to a matter, and its application in or relevance to any particular circumstances, shall be ascertained as though they were matters of fact."

It is in pursuance of meeting this requirement that these case studies are presented to assist (although indirectly) towards proving custom in relation to customary water rights as they exist in the considered areas of Papua New Guinea so that in future they may be accepted as customary law pertinent to water rights.

The methodology employed in obtaining these case study data has been described in the introduction chapter to this thesis, Chapter 1. Again as mentioned there, a standard questionnaire (copy of which is appended as "Annexure 1") was prepared and the questions contained in the questionnaire were systematically put to all the identified informants, who by and large were themselves elders of the villages I visited. I personally asked the questions and recorded their answers verbatim.
Chapter 8

Incidents Of The Practice Of Customary Water Rights In the Upper Sepik River Area

A. Introduction

The Sepik River is Papua New Guinea’s second largest navigable river (after the Fly River in the Western Province that runs 1,200 kilometres)¹ in terms of length and the volume of water flow. It is 1,100 km long and drains a 77,700 square km area of the West Sepik Province, East Sepik Province, Enga Province, Madang Province and Irian Jaya, the Indonesian Province more popularly known as Dutch New Guinea.² Of the 1,100 km of its length, it is navigable all year round for up to 904 km.

In terms of the common law classification of rivers, as briefly introduced above in Chapter 2 of this thesis, the Sepik River is clearly a navigable tidal river. And by borrowing the late A.S. Wisdom’s words:

“A tidal navigable river means a river which is subject to the vertical flow and reflow of the ordinary tides and navigable as such. It includes the navigable parts of the river where fresh water is arrested by the horizontal flow of the tide. Parts of a river which are affected are not part of the navigable river.”³

The common law also imports a particular meaning into the word "navigable" when it is used with reference to a river as in the circumstances of this instance: "The word 'navigable' in the legal sense, as applied to a river in which the soil prima facie belongs to

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³ Wisdom, The Law of Rivers and Watercourses (2nd ed.) Shaw & Sons Ltd, London (1970) at pp.56-57. A more recent edition of this text is revised by Holdsworth W. (ed.), Wisdom on Water Law (5th ed.) Shaw & Sons Ltd, London (1992) but I prefer to site the original work where there is no change to it in the revised edition, which is the situation in this instance.
the Crown and fishing to the public, imports that the river is one in which the tide ebbs and flows." This common law position must however be kept in perspective that it is subject to the adoption regime of Schedule 2.2 of the Constitution where it is subjected to any statute law to the contrary, custom and customary laws and the circumstantial applicability rule. When the questions were drafted for the standard questionnaire to put to the subjects covered in the field work, the common law position in relation to navigable tidal rivers was kept in mind and also pursued, ie., general discussion particularly to assess the subjects' reaction and in the end to assess the common law position in terms of Sch 2.2 Constitution, particularly whether that will be contrary to custom or whether it will be acceptable to circumstances of Papua New Guinea viewed through the eyes of the subjects in this field work.

The fieldwork for the purpose of this Chapter was restricted to the Upper Sepik region and covered most villages on the banks of the Sepik River from Iamombi down to Avatip; most of those villages found on the bank of the May River from Wanamoi to Painu; the Wag and Igai villages on Lake Kapuwai (but more commonly known as Wasui Lagoon); the villages of Yarekai and Garamambu who have claim to Bimba Lagoon (but commonly known to locals as Bimbal Lake); and the villages of Aibom, Wombun, Yindengi, Kirimbit and Timbunmeri on the Chambri Lakes:- all in the Ambunti District of the East Sepik Province of Papua New Guinea. This field work site was selected mainly for two reasons. First, it is anticipated that within the next five years, there will be two major resource development projects in the vicinity of the field work area, which are a gold and copper mine and a logging operation and therefore it was considered necessary to study the perceptions and/or attitudes of the holders of customary lands adjacent to rivers and other watercourses in order to understand the customary regime and the perceptions of the holders of customary water rights. Without doubt, if and when the proposed major resource development projects come on stream, the issue of customary water use rights will become significant. Hence, it is important that we make attempts in studies such as this to better

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4 Ibid.
5 It is the Freda/Nena gold/copper mine which currently Highlands Gold Ltd, the exploring company with 75.16 per cent interest has already completed a pre-feasibility study that gave promising results: Se Report, "Highlands Making Most of Golden Opportunities", (January-March 1995) PNG Resources 25 and Report, "Nena Could Be Operating By 1998", (April-June 1995) PNG Resources 41.
6 This timer project is known as the April-Salome Concession. To date a developer hasn't been agreed upon by the traditional resource owners and the relevant government agencies to develop the project.
understand those issues. The second reason was to do with logistics which become obvious when it is known that I am a local from the village of Avatip.

The methodology employed in gathering the information was that questions from the prepared standard questionnaire were put in many, if not all, instances to elders and other members of a particular village. In all instances, I personally asked the questions and the language of communication was Pidgin English but I recorded the answers in English. Before I recorded the answers, I had to thrash out any possible ambiguities so as to be sure of the answer to record. In few instances, particularly in the village of Imombui, when some of the elders did not properly understand the questions I asked in Pidgin English, I then got the younger members of the village who gathered to translate those questions into their own languages and their answers were related to me by the reverse route. In all instances, the village elders and those other younger people present at our gathering were given ample time to digest the question(s) and to respond adequately. In nearly all the villages I visited, we either gathered at the village Haus Tambaran (a men's only meeting and ceremonial house of spiritual significance) or other public gathering place so as to allow for the maximum number of people to be involved in the information gathering process. It was my view that in this way, proper checks and balances were instituted to ensure that the answers given were not misleading or self-serving.

B. Presentation of Data

For purposes of a coherent presentation of the data so obtained, I have divided the villages into six categories in terms of all those villages located on the banks of the Sepik River; those located on the banks of the May River, which is a tributary of the Sepik; and those located on banks of lakes but presented separately under each lake as a separate category. I now proceed to present the data separately under each category.


The villages covered in here are the villages of Imombui, Mowi, Iniok, Tauri, Oum No.1, Oum No.2, Chenapian, Kubkain, Suagap, Yesen No.2, Maio, Yamban, Malu and the Avatip village of Yentchenggai. All these villages are located on the banks of the Sepik

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7 Pre-World War II, the village was a single village. Since then, the village has been divided into three, Yentchenggai, Lavangai and Yau-ambak. In 1979-80, the village of Lavangai was vacated and it joined Yentchenggai: See Harrison S.J., *Stealing People's Names: History and Politics in a Sepik River Cosmology*, Cambridge University Press, Cambridge (1990).
River. Although they are so located, to a large extent they depend on the oxbow lakes which are located near or around these villages for fishing. The Sepik river itself is largely used for all domestic purposes, transportation, crocodile hunting and the harvesting of shrimps and prawns. Some people however do use the Sepik river for fishing too.

Questions asked related to five themes: those relating to land use (because customary water rights derive from ownership of land and land use); those relating to river/lake or other watercourse use; water resources use; territorial claims; and those relating to any magico-religious beliefs and practices.

(a) Land Use

In all instances it was agreed that individual ownership of land wasn't recognised or practised but communal land ownership through the corporate entity of the clan was recognised and practised. In other words, no individual can own land but all land is owned by the clan and the individual acquires land use rights from the clan. These communities were patrilineal and therefore land was acquired through the father's side. As it will become apparent later, the implications of this is that generally no individual can lay claims to customary water rights but only through the clan or tribe structure.

(b) River/Lake/Watercourse Use Rights

When the question as to what were the bases upon which water use rights were claimed were put to the people visited in the villages visited in this sector, the following answers were recorded:

(a) the ownership of riparian land was the primary basis;

(b) in some instances, particularly in the villages of Suagap, Yambun, Malu and Avatip, it was stated that the fact of first discovery and usage of a lake or watercourse by a particular tribe or clan, even if the lake or watercourse was located in another clan's or tribe's land, was a valid basis to claim water use rights;\(^8\)

(c) the loss of an ancestor or a clan member in defending the particular watercourse against enemy tribes was also mentioned, particularly in the villages of Avatip, Malu and Yambon, as a basis for claiming water use rights in a particular watercourse.

\(^8\) It is on this basis that the Makem and Yimal clans both assert ownership rights to Walmau Lake in Avatip. For related discussions on this aspect, see Harrison ibid at p.137.
The next related questions asked where: "Does the village, tribe or a clan assert ownership claims over a river, lake, etc. or to parts of such rivers, lakes and watercourses?" and if so, "Do these claims include ownership of a river, lake or watercourse bed?" The answers to those questions were a resounding "yes" in all the villages visited. Most of the elders I spoke with explained that since a river, lake or stream ran through their land, they owned those parts of the river, lake or stream. Particularly in the village of Iniok, an elder went to the extent of asking me whether the river (or part of the river), lake or stream were hanging from thin air? When I replied no, he explained that the land holds the water and determines its course and direction of flow. And that land through which the river, lake or stream flows is of course owned by a clan or tribe and therefore by virtue of the ownership of the land, that clan or tribe owns that particular watercourse.

It is perhaps interesting to note that when these ownership claims at the customary legal order are considered in terms of the received common law, they are indeed very much similar. Common law has of course recognised and accepted rights to use water and other water resources as akin to property rights through the doctrine of riparian rights. The riparian rights doctrine is premised on exactly the same basis as that at customary law: the ownership of land abutting a watercourse. As it is with the common law riparian rights doctrine, the basis of ownership claims to watercourses at customary law in Papua New Guinea is primarily the ownership of land abutting a watercourse.

When the next question as to whether such river(s), lakes or watercourses or parts of them were capable of individual ownership was put, the response was negative. The reasoning was that "ownership" of these river(s), lake(s) or other watercourse(s) remained at all times with the clan or tribe but individual members of these clans or tribes merely exercised these rights through the authority of the clan or tribe. Specific and express authority was however not necessary. The fact of belonging to the particular clan or tribe was all that was necessary.


It was generally conceded and in many instances consensus reached that larger watercourses like the Sepik river itself, May river, Freida river or the Chambri lakes were not capable of ownership by a single clan or tribe. Those tribes or clans who owned riparian land on these large watercourses merely owned parts only of the watercourse concerned to the extent of their ownership of the riparian land itself. In other words, there were geographical restrictions as determined by the riparian land they hold. It was also agreed that other peoples' rights of navigation only on these large rivers, etc. was accepted and respected. It was emphasised that this right was only restricted to navigation only—meaning that fishing and hunting of crocodiles in these areas or parts of these larger watercourses which they (i.e. navigators) did not "own" was generally restricted. To illustrate this point in no uncertain terms whatsoever, the Suagap people related to me the following, rather horrific incident involving a luluai called Munglapimali and his tutul, Swatnawi, who encroached on the Suagap territory. Those two men were from Bruknowi village. They and their wives were captured by Suagap villagers after they found them fishing and hunting crocodiles in one of their lakes. These Bruknowi people had travelled a distance of about more than 50 kilometres upstream of the Sepik river past the village of Maio, Yesen No.1, Yesen No.2 and the Baku and then into Suagap territory. The two men were beheaded at the point of capture but their wives were taken to Suagap village and kept in the Haus Tambaran for two days during which time they were pack raped and eventually killed. Some Bruknowi people who escaped the Suagap raid then reported the matter to the Kiap, Mr John Corrigan, at Ambunti. Mr Corrigan then sent a government patrol team with armed policemen to go and investigate the matter and to bring those responsible to justice. The Suagap people were however prepared for a confrontation with the government patrol team. They were armed with bows and arrows. The Suagap combatants were advised that when the government patrol team shot at them with their

11 A "luluai" was a person of authority who performed the role of a village councilor and a village constable during the colonial period in German New Guinea initially under the German rule and then adopted by the Australians.

12 A "tutul" was the luluai's assistant.


14 A "haus tambaran" is a men's only meeting house with cultural and spiritual significance where ritual rites are performed. Haus tambarans are particularly found in the Ambunti, Angoram and Maprik Districts of the East Sepik Province of Papua New Guinea.

15 A "kiap" was an administrative official of considerable authority who was responsible for overseeing the peace, order and good governance of a particular district in the Australian colonial occupation of Papua New Guinea. Generally "kiaps" were also known as patrol officers.
guns, they must jump into the river to avoid pellets hitting them. That advice was well heeded and in the ensuing fierce battle no one was seriously hurt or killed and the government patrol team returned to Ambunti without meting out their punitive justice.

After a month lapsed, the Kiap, Mr Corrigan, then went back to Suagap and investigated the matter. Having found that the Bruknowi people had been wrongfully using the Suagap people's fishing and crocodile hunting ground, he dismissed the matter and consequently no charges were laid against the Suagap villagers. Mr Corrigan then told the Suagap people that they had good/justifiable reasons for what they did. These events occurred in late 1958 and persisted through to early 1959.\(^\text{16}\)

Of course the lessons to be learnt from this rather horrific incident are quite telling. This story demonstrates the seriousness and the extent to which indigenous riparian customary landowners are prepared to defend and protect their fishing grounds from outside encroachers. This story marks the high water mark of the defence and protection of an indigenous riparian community's customary water rights.

When the question as to what kinds of rights were claimed and exercised by the people to the parts of the rivers, lakes or watercourses to which they claimed "ownership", the following emerged:

- domestic use;
- fishing;
- extraction of a certain quality of clay from the river or watercourse bed for making clay pots and pans;
- the right to collect a certain kind of straw to make all kinds of hand baskets;
- crocodile hunting;
- the right to assert and attach and therefore designate certain parts of the river, lake or other watercourse for traditional ceremonial and

\(^{16}\) Although no official records of this incident were located at the Ambunti District Office, judging from the clarity of the recollections related to me by the Suagap villagers, I have no reasons to doubt the veracity of the events described. Lawrence Bragge, who was also a patrol officer in the Ambunti District at around about the same time with John Corrigan records that: "The final Bruknowi list of dead contains five names: two men and three women killed at Lake Swokawit upstream of Yessan ...": See supra n.13 at p.46. I suspect that this may well be a reference to this event the Suagap related to me.
spiritual use or observation. This therefore means that other people
must not encroach on these sites. 

It was reasoned that since navigational rights were universally available and recognised, such rights were not specifically claimed. It was emphasised that the concession for navigational rights did not however include any right to fishing or the other specific rights as set out above.

(c) Resource Use

The next group of questions asked related to the use of water resources; particularly whether some form of management practices were adopted, and if so, who would be the appropriate authorities to impose and oversee such practices.

Fish, shrimps, prawns, turtles and crocodile figured as the most sought after and exploited resources largely for domestic consumption and the sale of surplus for cash in the local market either at Ambunti, Pagwi, Maprik or even Wewak. Any large scale commercial exploitation of these resources, even by members of a riparian land owning and hence watercourse owning clan, were generally not viewed kindly and hence openly discouraged. The reason for this attitude was that it was considered "unfair" for a single member or some members only of a clan or a tribe to benefit at the expense of the rest of the clan or tribe.

On the issue of management practices, it was agreed in all the villages surveyed that at certain times or where certain resources were perceived to be over-exploited, appropriate restrictions were placed. In this regard, the following specific examples are cited:

- in the village of Mowi, a representative of the people gathered (Mr Thomas Nahok) said that during the dry season, people were not allowed to catch small crocodiles under 10 inches, etc.;
- in the village of Iniok, a representative of the people gathered (Mr James Asusu) said that when necessary, particularly where there were signs of over-exploitation and during the dry season, restrictions were placed whereby the people were told not to go fishing or hunting crocodiles for a specific period of time and/or at a certain location; and

17 Particularly in the villages of Avatip, Malu and Yambon, such sites are reserved for initiation into the yam harvesting cult: See Harrison S.J., "Yams and Symbolic Representation of Time in a
in the village of Kubkain, it was related that particularly during the dry season, the "owners of lakes" told other people not to go and fish for periods ranging from a week to months until the situation improves.

In all the instances or the villages under survey, the people who issued the restrictions were usually the elders of the clan or tribe who "owned" these watercourses or parts of them. Since such clan's or tribe's rights of ownership were generally known and accepted by the other members of the village community, the clan or tribal elders authority were rarely questioned. Enforcement of such restriction orders was ensured through the State sanctioned village councillor and the councillor's committee. In all the villages surveyed, there were no village courts and therefore the village councillor and his committee held courts in villages to oversee the enforcement of any restrictions, etc.

(d) Territorial Claims

One of the questions posed under this category was "Does the village, tribe or clan make any claim to exclusivity over: (a) river, lake or watercourse or parts of such?; (b) the fisheries in the river, lake, watercourse or parts of those?; (c) the non-living resources therein?" In all the villages surveyed in this category, all aspects of the questions were answered positively. When the next question relating to the geographical extent of these claims was put, in many instances perhaps self-serving territorial claims were made whereby this resulted in numerous cases of overlapping. I therefore decided not to pursue in detail the answers to this particular question in here because that itself warrants a case by case detailed evaluation before a relevant competent tribunal.\(^{18}\) The only one single lesson to be learnt here is that the territorial claims to date are not clearly and definitively determined. Hence they remain a real source of conflict among neighbouring villages and/or tribes or clans in those villages.

Members of a distant clan or tribe or even more so those people from another village were generally not allowed access into watercourses which were "owned" by a different clan or tribe. In the event of violation, people were inclined to seek compensation either through traditional dispute settlement mechanisms or even through the State court system. If compensation was sought through the informal/traditional system, payment by way of pigs, betelnut, live chicken or shell money was generally considered sufficient. But if

\(^{175}\) The Lands Title Commission is the relevant competent authority which can conclusively determine these issues but the process is incredibly long.

dispute settlement was sought through the formal court system, in most instances, monetary compensation was perceived to be the acceptable mode of compensation.

However, if "outsiders", ie. those people who do not belong to the riparian land owning clan or tribe including those people who are from a different village, obtain prior express permission from the "owners" of a watercourse or that part of the watercourse, they are generally allowed access to the resources of the particular watercourse.

(e) Magico-Religious Considerations

In all the villages under survey in here, it was found that certain areas or parts of a watercourse were revered as areas of significant magico-religious significance. Such areas were reserved for initiation rites, genealogical significance, the performance of rituals to pay homage to the spirits and various other modes of traditional magico-religious ceremonies and practices. The following examples are selected to serve as examples:

- in Imombu, the area at which the May river meets the Sepik river is considered to be a sacred site and the locals believe that a mermaid lives there. So if the people want a good catch in fishing or crocodile hunting or event to successfully rescue a floating log, they offer sacrifices by throwing a big bunch of betelnuts into the area and ask for the spirit's help and good will;
- in Suagap, if people happen to embark on the sago starch extraction process in the vicinity of a place of some spiritual significance, they have to call out to the spirits and ask permission to use the water to wash the sago fibres. In many instances, the consequences of not doing that has been that the sago starch did not settle well and has been too watery;
- in Avatip, the area at which the Screw river meets the Sepik is reserved for initiation purposes where men are initiated into the yam cult;
- at a midway point between Avatip and Japandai village on the Sepik river, there is a certain location at which an ancestor of the Nawik clan, Sapayawi, was ambushed by enemy tribes and he fell into the water and was drowned there. His body was never recovered. That

19 See also supra n.19.
location is of significant genealogical significance to the Nawik clan of Avatip.

The point that needs to be made about these observances and practices is that irrespective of whether these observances and beliefs can be considered proper or otherwise in the Christian biblical sense, they serve a real purpose by keeping social order and harmony in society since they impact the communities on what people should do and likewise should not do in the subsistence way of life. Furthermore, these beliefs and practices play a significant role in the preservation and conservation of water resources since these sacred locations are reserved and therefore hardly disturbed by people, and hence in turn serve as sanctuaries and refuge places for many water resources.

2. Customary Water Rights Practices in the May River Villages

The villages surveyed here are Painu, Auni, Abagasui, Pekwe and Wanamoi. These villages are located on the banks of the May river. It is interesting to note that the original name of the river as it has always been known to the locals is Tunap. The colonial administration officials (patrol team) first travelled up the river in the months of May so the patrol team named the river May River. The government station which is on the banks of the river also bear the same name. Some local people whom I spoke with preferred to call their river Tunap, its original name. The small mountain land on which the May River Government Station is located is known as mountain Tiawi. This mountain is of great spiritual significance to the Pekwe and Abagasui people since they believe that their ancestral spirits live there.

(a) Land Use

In all the villages under survey here, it was related to me that individual land ownership is not recognised and that all land is held by clans. The individual members of the clan use land through the clan. They are a patrilineal society and therefore land rights are acquired through the father's side.

(b) River/Lake/Watercourse Use Rights

The basis upon which watercourse use rights were acquired were generally:

(a) the ownership of the riparian land;
(b) in instances where a certain watercourse was clogged with weeds, etc. when members of another clan helped in cleaning out the watercourse, such people acquire rights to use that particular watercourse concerned: and

(c) the loss of an ancestor in defending the territorial boundaries of the watercourse concerned.

In instances where a particular clan owned riparian land, that clan was generally considered and accepted by the other members of the community as "owning" that watercourse. In the case of the main May river, no particular clan "owned" the river but each riparian land owning clans were accepted as "owning" that part of the May river that flowed through their land. As is the case with land, individual "ownership" of watercourse was generally not recognised. An exception to this general rule was made in relation to smaller watercourses of the likes of smaller lakes or billabongs where it was agreed that individual families did own some. Such an example of this is in the village of Auni where Anton Namiep and his family own a small lake called Tumui.

The water use rights which the people surveyed here claim and exercise relate to:

- fishing;
- the right to place fish traps and hand woven baskets to catch shrimps, prawns, and eels;
- hunting crocodiles;
- extract day for making clay pots;
- extract sand and gravel; and
- the right to designate and reserve certain parts of the river for traditional ceremonial purposes.

General navigational rights of all purposes are recognised and allowed but of course excluding the above stated water use rights which are reserved to the water rights holders.

(c) Resource Use

The water resources which the people exploit and utilise for their daily sustenance and any surplus for sale are fish, eels, turtles, prawns, shrimps, freshwater mussels, crocodile and wild ducks and other bird life which live in their watercourses. At certain times, particularly in the dry season, some restrictions are placed on harvesting of these resources. The authority who impose these restrictions are the leaders of the watercourse "owning" clan and the village councillor. Any violation of such restriction orders are enforced
through the village council’s court. The village councillor is also at liberty to refer the matter to the relevant government authorities either at May river or down at Ambunti in the event where the matter hasn't been resolved at the village level.

(d) Territorial Claim

Territorial or geographical claims are exerted by the various watercourse owning clans or tribes. The geographical extent of these claims, particularly to the parts of the May river sometimes overlapped. To that extent, that remain potential for conflict.

Restrictions to the extent of outright prohibition are usually placed by the riparian land owning and hence watercourse owning clans or tribes for any outsiders, ie. a distant clan or tribe to a complete stranger from outside the society, to exploit the water resources. If however prior consent has been obtained, such people will generally be allowed into the territorial watercourse and harvest resources found therein. In the event of any unlawful or unauthorised entry and harvest of the resources located therein, compensation in the form of money and pigs are usually demanded.

(e) Magico-Religious Considerations

Certain designated and identified areas of the May river are of spiritual significance to the people. The following two examples only are cited to illustrate:

(a) in Auni, there is a certain deep bay below the village where it is believed that water spirits live. People are not allowed to wash within the vicinity of the area or throw stones or such other objects in;

(b) similarly in Painiu, at a certain location below the village where there are big stones, the area is perceived to have water spirits and therefore, restrictions are placed on washing or fishing in and around the vicinity of the area.

It is interesting to note that these places play a vital role in the conservation of water resources by acting as refuges from further exploitation by human beings.


The Wagu and Igei villages are located on Lake Wasui. The commonly used name is rather Lake Wagu. The local people themselves call the lake, Kapuwai. Actually the Igai

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20 For a concise background as to the circumstances surrounding the current establishment sites of these villages and the general ways of life of these people, see Wayne Dye T., "Economic Development at the Grass Roots: Wagu Village 1963-83", (1990) Lutkehaus et. al. ed., Sepik
people do not live on the banks of the lake today. They moved away from the banks of the lake in the 1950s and are now located on the banks of the waterway that links the Wagu Lake with the Sepik. Some people from Yambon village also live on the banks of this particular waterway too.

(a) Land Use

Land is owned by a clan and individuals use the land through the clan. Up to now, land owning clans have not been assertive and there appears to be a liberal attitude towards land use by other members of the village and the neighbouring villages of their language group.21

(b) River/Lake/Watercourse Use Rights

The ownership of riparian land is the main basis upon which water use rights are acquired. Water use rights can also be acquired through maintenance work done on the watercourse such as clearing overgrown weeds and reeds, etc. Despite the fact that the Wapudebi and Piowuu clans are generally accredited as "owning" Wagu Lake, all the people who live in and around the lake and those others who come from as far away as Yambon, Apan and Malu villages are generally allowed access to the lake and the resources therein. A plausible explanation can be offered for this rather liberal access allowed to outsiders. That is that the Bahinemo people of which the Wagu and Igei villages are part of, were initially mountain people where they inhabited the Hustein Mountain and only came into settle by the lakeshore on current sites in the early 1960s22 and therefore they did not depend heavily on water resources for their daily sustenance, as they were dependent on hunting and other land-based subsistence resources.23 Hence the practice developed to this day where the people are liberal and accommodating to other people.

(c) Resource Use

The talapia fish (locally known as makau) is the most abundant resource that this lake offers. This has therefore attracted people as far away as Yambon, Apan and Malu to come

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21 The language is Bahinemo: see ibid 221.
22 Supra n.20 at pp.223-224.
23 In this regard Wayne Dye, who spent a total of 10 years spread over 21 years since 1964 doing linguistic work with these people pertinently observes: "Traditionally these people ate sago, forest greens, fish, game (principally pigs), and garden foods, in approximately that order of importance." supra n.20 p.221.
and establish temporary residence specifically to harvest the talapia fish mainly for sale at local market.

The second most popular resource that Wagu Lake and the surrounding watercourses offer is crocodile. Crocodile is hunted mainly for the valuable skin which attracts a comparatively good sale price and the meat for local consumption.

Generally during the dry season, restrictions are placed on the use of gill nets to catch fish and crocodile hunting. Such restrictions are not specifically imposed by elders of the riparian land owning clans but are mooted generally by elders of the village and imposed by the village councillor and his committee. These restrictions have generally been adhered to in the past. If however there are any breaches, these are dealt with by the village councillor an his committee at their courts which they hold from time to time or when the situation warrants.

(d) Territorial Claim

Despite the fact that the riparian land owning clans of Wagu Lake, Wapudebi and Piowuu do assert ownership claims to the lake, there are generally no exclusivity claims to the lake itself or the resources of the lake.

The Wagu people and the Suagap of the main Sepik river share common ancestral ties and therefore they do to this day, recognise and accept any traditional rights which the Suagap may have to the use of Wagu Lake.

(e) Magico-Religious Considerations

There are certain locations on the lake which the people accord some magico-spiritual significance to but they don't have any traditional ceremonies connected with river spirits, etc. As indicated earlier, these people are really "land based" and therefore much of their activities, including traditional ceremonies of spiritual significance, are land based.


The Yerikai and Garamambu people claim ownership rights to Bimba Lake, commonly known to the local people as Bimbal Lake. Of the two villages, Yerakai is the only village located around Bimbal lagoon. In actual fact, the Garamambu people rarely use Bimbal

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24 The old Gahum village up on the mountain range is the village which the Wagu and Suagap people originated from.
25 They share a certain insect cult ceremony with the Suagap people.
lake since they are situated inland on a mountain top, Mt. Garamambu. Since the two villages share common ancestral ties and hence have relatives living in each villages, they are generally referred to as coming from and sharing the same territorial boundaries. The Garamambu people are living in close proximity to the Chambri Lakes and therefore they depend on that lake to a larger extent.

(a) Land Use

Land is held by a clan or tribe and individual members of the clan or tribe use land from the clan or tribe. However, no express permission is required from elders of the clan or even other members of the clan for an individual member to use the clan land. The society is a patrilineal society and therefore land use rights are acquired through the father's side. If however an outsider gets married to a village girl, that person and his children will acquire land use rights through the wife's clan.26

(b) River/Lake/Watercourse Use Rights

Water use rights are generally attained on the basis of: (a) ownership of riparian land; (b) the loss of an ancestor or a clan or family member in defending the territorial boundaries of the watercourse; and (c) through maintenance work done on the watercourse, eg. by clearing water weeds, etc. Out of these instances, category (a) is the most senior and most authoritative basis. Category (c) does not accord the person any "ownership" right but only usufructuary rights. The Gainambul clan owns Bimbal lake and the lake bed but generally allow other members of the village and some people from Malu to have access to the lake and the resources therein.

(c) Resource Use

The most abundant resource which this lake offers are the talapia fishery and crocodiles. Accordingly to my informant, Maiban,27 there are generally no restrictions on fishing the talapia fishery but crocodile hunting on the lake is restricted to the particular people who have water use rights.

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26 I am grateful to my informant, the village elder and councillor, Maiban, for making this fine distinction on his own without any prompting from me.

27 Ibid.
(d) Territorial Claim

The territorial claim of the relevant clan to Lake Bimbal extend to part of the waterway that links the lake to the main Sepik river just around a place referred to as "the farm". Beyond that point is generally considered to be Malu territory.

When I put the question: "Does the clan or village recognise any traditional rights of outsiders to use the lake and the resources therein?", my informant, Maiban, answered in the affirmative and explained that they do have clan ties with people from Malu and Yau-ambak villages and therefore, they do recognise the peoples' right to have access to the lake and its resources.

(e) Magico-Religious Considerations

A total of four locations on the lake were identified as of some cultural and spiritual significance. These being: (a) at the tip of the only peninsula on the lake where the spirits, Wayapi and Tambali live; (b) at the entrance to the lake from the waterway that connects it to the Sepik river where the female spirit, Mandaibas lives; (c) at the eastern end of the lake where there is a large stone and the spirit, Kambali lives; and finally (e) near the location which the villagers use as a jetty, the spirit Wambon lives.


The only village situated on the shores of this rather beautiful lake is Yau-ambak village which also happens to be my home village. Actually Yau-ambak is one of those three Avatip villages that comprise the big Avatip village.28 Hence people take up residence in any of these three villages, namely Yentchenggai, Yau-ambak and Lavangai.

(a) Land Use

Land is held by a clan or a tribe (ie., a group of clans) and members of these clans or tribes use land from the clan or tribe. No permission is however required from the elders or other members of the clan before one uses land. The society is patrilineal and therefore, land is acquired through the father's side. If a village girl marries a man from outside the Avatip village and decides to settle at Avatip, the husband will normally be adopted by a clan other than the wife's and that family will then acquire land use rights from the husband's adopted clan. In this regard, this differs from the practice in Yerikai/Garamambu.
where the husband is merely adopted into the wife's clan and therefore acquires land use rights from the wife's clan.

(b) River/Lake/Watercourse Use Rights

In this society, i.e., Avatip as a whole, water use rights are acquired through the following means stated in their order of significance:

(a) through the ownership of riparian land;
(b) where an ancestor was lost in tribal warfare over the defence of the watercourse or its territorial boundaries;
(c) through relations and alliances formed by inter-marriage where the mother and her children only (excluding grandchildren, etc.) are allowed during their lifetime to have access to their mother's clan's watercourses; and
(d) through work done for the upkeep and proper maintenance of the watercourse.

Apart from category (a), the other categories (i.e., (b), (c) and (d)) do not confer proprietary interest but only usufructuary interest.

The clans who are acknowledged as owning Walmau Lake are Wapanamb, Imal and Makem all from the Gla'aung tribe. These clans also own another watercourse that connects Walmau Lake with the Chambri Lakes, called Baljimb. Another clan related to these three clans, Ngambak owns the other large watercourse that drains the swamps around the foothills of mountain into Walmau, called Kapugawi. Although these clans are generally acknowledged with ownership rights to these watercourses, all the people of Avatip are allowed access to these watercourses and the resources therein.

(c) Resource Use

The talapia fishery and the other native fresh water fishery are the most sought after resources that this lake offers. Lately crocodile has been scarce mainly due to over-hunting.

The water of Lake Walmau and Kapugawi (the watercourse that flows into Walmau) are largely utilised by the people of Yau-ambak for all domestic purposes including drinking,

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28 For a detailed account on the evolution of these three Avatip villages and the social structure and history, see Harrison S., Stealing Peoples Names: History and Politics in a Sepik River Cosmology, Cambridge University Press, Cambridge (1990).

29 In this regard, note the observations made by Harrison:
"Similarly, myth states that all the main fishing-lagoons of Avatip were the handiwork of Makem ancestors; but these figures only outlined the lakes, and it was the ancestors of the junior subclan Yimal who actually dug them out and filled them with water. It is on this basis of that myth that the magical power over lakes' fertility is now held mainly by Yimal." ibid at p.137.
washing and all other household use. In fact the lake has become so central and integral to
to all the village people that all of them feel that they all have equal rights to it as the lake
owning clans of Wapanamb, Imal and Makem.

(d) Territorial Claims

The watercourse owning clans do not assert exclusive territorial claims to the lake and
the surrounding watercourses. Particularly the people of Yau-ambak village are allowed
free and equal access to the lake. This perhaps reflects the fact that the lake is so central to
the lives of the people of Yau-ambak. The other reason as related to me by my main
informant, Wasawul Yalamai,\textsuperscript{30} is that in the old days when there were enemy tribal
attacks, particularly from the Yerikai/Garamambu people, the whole village defended the
territorial boundaries of the lake and therefore since then it was generally accepted that all
the village people should have equal rights of access to the lake and its resources.

The lake owning clans and the Yau-ambak village as a whole to this day recognise and
accept the traditional usufructuary rights of people from outside Avatip to have access to
Walmau Lake and the resources therein. These are based on traditional customary ties
which the people have, particularly with those in Malu, Yambon and Yerikai.

(e) Magico-Religious Considerations

There are a number of locations in the lake that are revered to be of considerable cultural
and spiritual value. Not all of these areas were disclosed to me by my informants because
some of those information was considered too sacred where such information is only
obtained after offering a sacrifice of a mature size pig to the spirits. I wasn't able to offer
such a sacrifice. Besides, such information is only restricted to men who have been
initiated into the top level initiation stage which I have not attained yet. Therefore such
information were not to have been made available to me.

The following areas of cultural and spiritual significance only were made available to
me:

(a) at one of the biggest bays on the lake on the side bordering the mountain, there is a
    place called Wi'ngyung. It is believed that when people from the Sarak clan die,

\textsuperscript{30} At the time of fieldwork (January-March 1996) Wasawul Yalamai was not only a respected Yau-
ambak village elder but a committee of the village councillor. Coincidentally a photograph of
Wasawul engaging in the debate of the ownership to the name Kirakendawai (which he called one
of his daughters and the opposing clan objected) in Malu village in April 1978 is found at the
bottom left of p.xiv of supra n.28.
their spirits go there first and travel inland to a place called Pyaansangul and rest there. Therefore, this place is of considerable spiritual significance to the Sarak clan of Avatip;

(b) between the peninsula before turning into the village and the areas where people leave their canoes to go up to the mountain, there is considered to be the great lake spirit, Kambakinu. People are not allowed to fish there by using gill nets as that will upset the spirit and may bring bad fortune. In any case, that place is perhaps the deepest area in the lake and therefore it is generally viewed with suspicion and fear; and

(c) at the far northern end of the lake left to the waterway that connects the lake with the Sepik, a water spirit called Kulanu is considered to live there. It is generally believed that if a bad spirit is travelling with a person in his canoe, this spirit Kulanu usually appears in the form of a very big log or crocodile and immediately sinks back into the lake.

As it was noted earlier on in the discussion on big Avatip village of Yeutchenge on the main Sepik river, the yam ceremony initiations are held together out on the main Sepik river location as earlier stated.


The villages which make up the Chambri Lakes community and are located on the shores of this great lake are Aibom, Wombun, Yindengei, Krimbit and Timbunmeri. The original inhabitants of the Chambri Lakes are the villagers of Aibom, Wombun, Yindigai and Krimbit. Timbunmeri is a village made of settlers who are mainly from the Middle Sepik river villages of Kandegei and Nyaurenge. Timbunmeri was founded in 1939 when two Garamambu village men, Akata and Ganika, gave the migrants their customary land to found the village. Other settlements located on the shores and islands of the Chambri Lakes, mainly for exploiting the talapia fishery, are Ruruk, Ariumjaun and Sambukindau.


See In the Matter of an Application by John Wasi Under s.15 of the Land Titles Commission Ordinance 1962-1969 No.1970/692. I am grateful to my main informant, village councillor, Mr Bamabas Kaiban, and all those men who were at the gathering with me for supplying me a copy of this cited obscure Land Titles Commission record/document.
Artisinal fishing is the major attraction and engagement for all the people of the Chambri Lakes.

(a) Land Use

Land is held by the clan on the father's side. Members of the clan use land from the clan. Express permission from clan elders, etc., is however not required before using the clan land.

(b) River/Lake/Watercourse Use Rights

The main basis upon which water use rights are acquired are:

(a) on the basis of ownership of riparian land;
(b) on the basis of the loss of an ancestor in defending the territorial boundaries of the watercourse from enemy tribal attacks in the days before European contact and hence civilisation through the teachings of the Christian churches;
(c) on the basis of long-term usage. This basis is very similar to the common law concept of prescriptive water use rights, i.e., where water use rights are acquired by prescription; and
(d) in more recent times, through maintenance work done on the watercourse; for example, work such as clearing water weeds from clogging the watercourse, etc.

Out of these, categories (c) and (d) do not confer proprietary interests. Category (b) confer only limited proprietary interests less than those conferred by (a). Hence, the ownership of riparian land is the main basis upon which proprietary interests are conferred. The Chambri Lakes are a vast expanse of water system and therefore many different clans of the villages of Aibom, Wombun, Yindigei and Krimbit are said to own various parts of the lake where the watercourse abuts their customary land. For example, in Aibom it was related to me that the Nyamei and Nyuru clans own the following parts of the lake: Nambiagwabi, Avuluku, Kinlupu and Mawbuku. The clan who owns these parts of the lake do also claim ownership of the lake bed.

Watercourses and/or the lake or parts thereof, are owned by the clan and cannot be owned individually as is the case with land. Therefore water use rights are acquired through the clan but of course without any requirement of prior permission from the elders

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33 Tonny Wheeler and Jon Murray in *Papua New Guinea: a travel survival kit* (5th ed.), Lonly Planet Publications, Hawthorn, Australia (1993), pertinently observe at p.296: "The Chambri Lakes are a vast and beautiful expanse of shallow water (they partially dry up in the dry season, making things pretty smelly and the water unfit for drinking untreated)."
of the clan or other members of the clan. There can however be exceptions to this general rule that no individual can own a watercourse; particularly to those up on the mountains of Aibom and Wombun/Yindengai where the people use them solely for fetching drinking and cooking water. In this regard, my main informant at Aibom, a one Godfried Damiengawi, explained that various families owned drinking water springs up on the Aibom mountain and that those families' consent were to be obtained if other members of the clan or village were to collect water from those mountain springs.

(c) Resources Use

The Chambri Lakes are arguably among the best fresh water fishing and crocodile hunting grounds that the East Sepik Province has to offer. That is the reason why there is a high volume of settlements activity on the lake by people from the neighbouring Sepik river latmul villages of Japanaut, Kandigei and Nyauragene. The Chambri Lakes, particularly the village of Aibom, is ofcourse well known for its pottery - particularly clay pots and pans of all sizes. That is the reasons why clay is considered to be premium resource in Chambri. Other than using the clay for pottery, some variety of clay is also used for the treatment of fresh wounds/cuts and eating!, mainly for medicinal purposes.

(d) Territorial Claims

There are generally no clear demarcations of boundaries of the various clan’s customary land and therefore clearly remains a source of conflict. At a village by village scale, the villages of Aibom, Wombun, Yendigei and Krimbit appear to have or rather, make some territorial claims often conflicting with the settler villages of Timbunmeri and the other smaller settlements. Since most of such claims are self-serving, I have subsequently decided not to record them here because to do so would be erroneous and irresponsible on my part.

When the question as to whether the clans or the villages as a whole recognised any form of traditional rights of outsiders to have access to the lake and the resources therein was put, the answer was negative. A qualification was added to this that if any person with recognised traditional rights for example through ancestral links wished to come to use the lake, that person will have to come through a relative resident in any of the Chambri Lakes villages. Increase in population and the consequential pressures that are placed on the water resources appears to be the explanation for this attitude.
(e) Magico-Religious Considerations

There were definitely no shortage of places of magico-religious and spiritual significance related to me by my informants. I will relate only the following four related to me at Aibom, the Chambri village I first visited:

(a) at the peninsula down the waterway (called Dangimat) outside the village and into the lake, a water spirit called Tipmayaman lives there. No one goes fishing there because if they do, big rain and thunderstorm will occur;

(b) at the waterway (Dangimat) outside the village and down onto the lake where there are large methomorphic rocks, a water spirit called Angagunjawa lives there. Out of fear of angering the spirit, the people don't wash there;

(c) further down from that point described above in (b), at a place called Wiyaugina, a water spirit called Moundiyapan lives there. He is considered to be "good" water spirit because he is believed to supply water during the dry season. My informants explained that this place never dries up even in the worst dry season because this water spirit supplies water to them; and

(d) further down from the point described above in (c), a "bad" water spirit called Maimbout lives there. He is considered to be the meanest and therefore "boss" of all the water spirits there. It was related to me that during their ancestors' time, a man called Yalapiduma and his dog were killed by this water spirit and the dog was devoured by the spirit because they trespassed onto the spirit's territory. Therefore, today no one goes there.

As was alluded to above, the question as to whether or not these beliefs and observances are true in the Judeo-Christian sense is not the point pursued here. Rather the point pursued is that these are the beliefs and observances of the customary water rights holders and therefore such practices must be respected and taken into consideration in the exploitation of natural resources by resource developers. Failure to do so will be to clearly upset the social structures and order in these villages. An even more important point too from the conservation viewpoint is that these areas are revered as spirits places, and therefore are reserved. Consequently these places act as sanctuaries for many living water resources and therefore contributes to the conservation and sustainability of living water resources.
C. Summary and Conclusion

Issues concerning the perceptions of owners of customary land adjacent to rivers and lakes about their rights over water and watercourses are becoming of ever increasing importance as seen in the introduction to this thesis at Chapter 1.34 At common law, water in its natural state is a substance not capable of ownership given its mobile transcending nature. Hence it is impracticable to attach ownership claims to water in rivers, lakes or streams, etc. The customary water rights holders in the Upper Sepik and Chambri Lakes areas covered in this field work agree that water as a substance cannot be owned by any body but watercourses, ie., rivers, lakes, creeks, etc., can be and are indeed owned by land-owning clans and tribes where such watercourses flow through their land.35

Such things as population growth, diversification of uses and increasing mining and forestry activities are creating new pressures on watercourses and water resources. It is therefore becoming apparently more important that we understand the customary regime and the perceptions of the holders of customary water use rights. It is hoped that this work makes a contribution towards that goal.

The recurring themes which emerge from the case studies presented above can be summaries as follows:

1. Riparian land and river/lake watercourse use patterns indicate that:

   (a) land is owned by the clan and all individual members of the clan merely exercise land use rights emanating from the clan;

   (b) likewise, clans own watercourses or parts thereof and clan members exercise water use rights from the clan. The clan ownership rights are generally accepted by other members of the communities within the village or language groups which may comprise two or more villages. Other members of the community, ie., villagers, are generally allowed to use the lakes and watercourses for subsistence living but not for any large scale commercial activity. It is generally considered and some consensus reached that larger watercourses like the Sepik, May river, Freida river and Chambri Lakes are not capable of ownership by a single clan and that other peoples' right to navigation is generally accepted and

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34 See supra at pp.2-6. Without doubt, the now aborted land suit by the riparian land owners of Ok Tedi and Fly River systems against the mining company BHP and OTML really brought the issue into national and international prominence. This is presented as a particular case study at Chapter 12 infra. at p. 225.

35 See also supra n.9.
respected. Particularly in the villages of Imombui, Iniok and Suagap on the main upper Sepik, Auni on the May river and the Chambri Lakes villages of Aibom, Wombun, Yendigei and Krimbit, it was agreed that individual families (as opposed to the clan) were capable of owning smaller watercourses;

(c) water use rights were acquired through the following means:

(i) ownership of riparian land. This is universally accepted in the villages surveyed as conferring proprietary interests;

(ii) first discovery and use of a particular watercourse. This is also considered as conferring proprietary interests;

(iii) the loss of an ancestor in defending a watercourse against enemy tribal attack;

(iv) on the basis of long-term usage of a particular watercourse or part of such watercourse; and

(v) through doing watercourse clearing and other maintenance work.

Categories (iii) to (v) are generally considered as not conferring any proprietary interests but merely usufructuary rights only and therefore subject to the rights acquired under category (i) and (ii). The implications of this distinction are that in times of scarcity of resources like during the dry season, etc., those who have proprietary interest usually moot restrictions or bans and then through the village councilor, impose the restrictions or bans. Furthermore, the people or clan members with proprietary interest only are allowed to engage in commercial harvesting of resources (whereas those others are not) and that in the event of negotiations with outside authorities, etc., as for example with major natural resource developers, those clans with proprietary interest only are considered to be the proper people to engage in the negotiations.

2. Resource Use: It became apparent to me that ownership claims to watercourses are in essence over the right to water resources rather than to the watercourse per se. Some of the main resources from the watercourse which the people utilise of course include all freshwater fish with talapia being the most sought after, crayfish and prawns, freshwater shellfish (mussels, etc.), crocodiles, freshwater turtles and other non-living water resources such as clay (for pot making and eating! and for other ceremonial purposes), sand and gravel. Spring water from mountain springs on the Aibom and Chambri villages of Krimbit, Indegei and Wombun, Yarakai and Garamambu and Wagu and Igei are also considered as important resources. Therefore, in this instance, the watercourse itself is considered as a resource.
Certain restrictions are placed on the utilisation of certain water resources during different seasons or periods of the year. For example, during the dry seasons which normally run in the middle to the end of the year, the clans who "own" certain lakes and other smaller watercourses place some form of a ban on fishing with nets and crocodile hunting. Such bans are in the majority of instances, generally respected and accepted by other members of the community.

In all the communities visited, it was emphasised that people from outside the community or tribe were generally not welcome to go into the fishing and crocodile hunting grounds of the other communities or tribes/language groups without express permission. In the event of violation, compensation and/or court action either in the local or the village court were in order. In most instances this is a cause of major conflict between the communities which can result in fights and even cost limbs and/or lives. The story of the Suagap raid of the Brukunowi people caught fishing and hunting crocodile in their fishing and crocodile hunting grounds as recorded above illustrates this.

3. Magico-Religious Considerations and Practices: There are widespread beliefs and observances of parts of rivers and lakes for traditional ceremonial and spiritual purposes. All the villages I visited gave numerous examples of such observances and practices. The point to note about these beliefs and observances is that irrespective of whether these observances and practices are true or not true in the Judeo-Christian biblical sense, they serve a real purpose and have a role to play in the communities since they impact the communities in what they do and should not do in their subsistence way of life. These beliefs play a significant role in the preservation and conservation of water resources as they serve as sanctuaries and refuge places for many water resources.

It is interesting to observe that the English common law doctrine of riparian rights which Papua New Guinea has adopted as part of the underlying law is also based on the ownership of land abutting watercourses. Watercourse use by river people (ie., the people who depend on rivers and lakes to a very large extent for their subsistence way of life rather than for the drawing of water for domestic consumption and limited instream use only) is of considerable significance. This is because these peoples' lives and their way of living is characterised, influenced, shaped and is dependent on the use of the watercourses around them. This is particularly true of the Sepik River, Chambri Lakes and Ramu River people and it is suggested equally so for the Fly and Purari Rivers people.
Watercourse use by these people (i.e., "river people") can be safely distinguished from the use of smaller watercourse (e.g., streams and underground water) by other inland water users who do not depend on the watercourse for their entire subsistence way of life but rather on subsistence agriculture and merely use the smaller watercourses for drawing water for domestic consumption and occasional fishing, etc. It is suggested that this difference must not be lost sight of and that necessary considerations with the necessary weight must be given to each situation rather more so in the former than the latter.
Map 3: The Ramu River, Madang Province
Chapter 9

Incidents Of The Practice Of Customary Water Rights In
The Lower Ramu River Area

A. Introduction

The Ramu River is about 720 km long and is the fifth biggest river in Papua New Guinea in terms of volume of flow.1 Rannells pertinently observes that the lower 538 km of the river, mostly in the Madang Province "are flat enough for use by canoes. Swamps surround this lower section. The Ramu empties into the Bismarck Sea close to the mouth of the Sepik. The people along these two rivers have similar, artistically rich cultures."2 (emphasis mine). The field work for this Chapter was conducted in March 1996 only in the lower Ramu river villages. The villages surveyed are all located on the banks of the lower Ramu. These villages from up stream down are Banapala, Gwaia, Wunganam, Jeriken No.1, Jeriken No.2, Asau, Arumbri, Kumkum No.1, Kumkum No.2, Daidam and Bosumun. Perhaps the highlight of the field work in this areas was discovering in Gwaia village that land is acquired through the mother's clan, ie. matrilineal. The surrounding villages of Banapala, Wunganam or Jeriken whom all speak the same language, the Abu language, did not have a matrilineal system but patrilineal.

The methodology used was the same as that employed in the field work conducted in Chapter 8. The same standard questionnaires were also used.

The main reason why this site was selected for this study is that Highlands Gold Ltd3 has now completed major exploration work for nickel and cobalt mine in the Middle Ramu4 and hence it was necessary to conduct a survey like this to properly gauge the perceptions

1 Rannells J., PNG: A fact book on modern Papua New Guinea (2nd ed.) Oxford University Press, Melbourne (1995) at p.149. (For comparison of the other major rivers, see at p.152).
2 Ibid.
3 The funding provided by this company towards this research is acknowledged.
of customary water rights user and holders because in the event that a nickel and cobalt mine does get off the ground, that will create pressures on the water and water resources on which these customary water rights holders depend for their daily sustenance. It was therefore considered necessary that attempts be made now to understand the customary regime and the perceptions of the holders of customary water rights.

B. Presentation of Data

Customary water use rights are by and large determined on the basis of land ownership and land use patterns. It is therefore necessary that the discussions begin with land use patterns.

1. Land Use

Land is always owned by a clan. Members of the clan or in some cases, other people from related clans, etc., use the land from the clan. In the case of the rights of other members of the clan to use land, permission from clan elders or other members of the clan is not necessary. But if people from outside the clan wish to use the land, permission from clan elders is necessary. As it will be seen later, these land use patterns are also reflected in water use.

With the exception of the situation in Gwaia village, land is acquired through the father's side. In Gwaia, land is acquired through the mother's side. Therefore in Gwaia, when a man marries a woman, he then acquires land use rights from the wife's clan but when unmarried, men acquire land use rights from their mother's clan. My informants explained that it is for this reason that in Gwaia, a man's relationship with his maternal uncles are very strong and of great importance than those on the father's side.

2. River/Lake/Watercourse Use Rights

The basis upon which water use rights are acquired are similar to those found on the Upper Sepik and Chambri Lakes areas as seen above in Chapter 8. These are as follows:

(i) the ownership of riparian land. This gives proprietary interest to the owners of riparian land and therefore are considered as "owners" of the watercourse or parts of such watercourse;

(ii) the fact of first discovery of a watercourse;
(iii) the loss of an ancestor in defending territorial boundaries of a watercourse; and
(iv) particularly in recent times, when a person does work to maintain a watercourse like for example, removing overgrown water grass or other water weed to maintain the watercourse.

Whilst categories (ii) and (iii) are considered as conferring limited proprietary interest but subject to those conferred under (i), category (iv) does not confer any proprietary interests but mere usufructuary rights.

In all the villages I visited, the elders and other people I spoke with did assert some form of ownership claims to parts of the Ramu River and small lakes abutting their customary land. This was eloquently related to me by my main informant in Daidam village, Mr James Koies in these terms:

"The Ramu is not owned by any one clan. But lakes are certainly owned by clans. For example, Wanwan lake is owned by the Clan Dupur."5

In the villages of Gwaia, Wunganan, Jeriken No.1 and Jeriken No.2, it was pointed out that the major land owning and thus watercourse owning clan in their communities was the Agur clan. Particularly in the Jeriken villages, the Agur clan was considered to be the most dominant since it "owned" land and watercourse - including parts of the Ramu river which flowed through this clan's customary land. Former village councillor and now elder of the Jeriken villages, Mr Hosea Blue, explained this in these terms:

"Indeed, the part of the Ramu River we live in is owned by the Agur clan. My clan, Kwai comes under them. Rivers and lakes are owned by the clan. For example, Agur clan owns Iramkin lake and we use it from them."6

Just as with land use rights, generally customary water rights are not individually held but are held by the clan particularly in cases where the clan is accepted as "owning" a watercourse, either by virtue of the ownership of riparian land, the fact of first discovery or through the loss of an ancestor in defending the territorial boundaries of the watercourse.

Individual members of these clan(s) merely exercise these rights from the clan(s). Express or prior permission either from clan elders or other members of the clan is not required for a clan member to exercise water use rights. But if a person from outside the clan wishes to have access to the clan's watercourse, prior permission is necessarily required.

3. Resource Use

Artisanal crocodile hunting is the main economic activity which these river people engage in. Hence crocodiles are considered to be the most important water resource of economic value to them. Talapia (fresh water fish) fishery is also prominent and many people also engage in the talapia fishery both for their daily sustenance and for selling of surpluses at local markets for cash. It is quite interesting to note that some of the mature talapia fish these people catch in and around the Ramu are much bigger/larger in size than those that occur in the Sepik River and Chambri Lakes areas.

Crayfish, prawns, turtles, eels and other native fresh water fishery are some of the other water resources which the people depend on to a large extent for daily sustenance and to sell surpluses for cash at local markets or in some instances to local traders who buy from these people for on selling purposes to their trading partners, mainly corporate entities in Madang.

Any form of large scale commercial harvesting of water resources by people other than those who are considered to be "owners" of watercourses or parts thereof (mainly by virtue of their ownership of riparian land, the fact of first discovery of a watercourse or the loss of an ancestor in defending the territorial boundaries of a watercourse), is generally not allowed.

In Gwaia villages, I came across some well-developed concepts and practices of water resources conservation and management where in that village alone, three lakes, namely Kerf, Sinok, and Iniora were placed under restrictions or banned from access and use mainly to allow for the crocodile stock in these lakes to increase as previously there has been over-hunting of crocodiles resulting in the near depletion of the resource. The clans who "own" these lakes placed bans. Under these bans, no one, including the owners themselves, are allowed to go fishing or hunting crocodiles in these lakes for the following periods:

- Lake Kerf, for a period of eight (8) years;

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6 Mr Blue related this conservation to me in Pidgin and I subsequently translated that into English.
• Lake Sinok, for a period of four (4) years; and
• Lake Iniora, for a period of five (5) years.

Generally all the other members of a village who used these lakes prior to the bans have accepted the bans and have since then, respected the bans. In the event of any breach, compensation is payable to the lake owning clans. Compensation can be in the form of money, traditional shell money, pigs or food stuff. But in the case of any serious and repetitious violations, such instance will be referred to local or district court by the village councillor. Apparently, the local government councils support and sanctions these bans and that has consequently given some recognition and stature in terms of enforcement of these bans.

4. Territorial Claims

When the question: "Does the clan, tribe or village make any claim to exclusivity over:

(a) river, lake or watercourse or parts of such?
(b) the fish in the river, lake, watercourse or parts of such?
(c) the non-living resource therein?"

was put to my informants in the villages visited, the reply was always a "yes" but with the usual qualification that "since we have relatives around us, we generally allow these people to come." 7

When questioned as to the geographical extent of these territorial claims, often the answers were self-serving and therefore conflicting. Hence my deciding here to refrain from recording their answers because for me to do otherwise would have been grossly unfair and highly prejudicial. Nevertheless, without doubt the current situation of often overlapping and therefore conflicting boundaries or rather extent of territorial claims remains a real source of conflict. It is hoped that the relevant authorities properly address this situation with some urgency.

5. Magico-Religious Considerations

Generally there is widespread belief and observance of certain locations of the river where magico-religious or spiritual values are attached to. For example, about two kilometres downstream from Gwaia village and on the same wide on which the village is located, that spot is revered and respected as the home of a river spirit. My informants...
decided not to disclose its name to me because that aspect was considered sacred and if they had done so, they would have been in breach of those values and customs. Of course people did not go there fishing with gill nets or to wash. Particularly small children are not taken there because of the fear that the water spirit may visit the child in the night and the child might cry all night long.

The point that needs to be made here as made earlier in Chapter 8 on this aspect, is that whether or not such beliefs and observances are true or not true in the Judeo-Christian biblical sense is not and should never be of any concern to outsiders like myself. What is of importance is that these beliefs and observances form an integral part of the interaction and co-existence of the larger order of the society in which they are known and accepted and therefore necessarily impact on the ordering and fabrics of these societies.

C. Summary and Conclusion

The main points for our purpose which emerge from the above data can be summarised as follows:

(a) land is owned by the clan and all individual members of the clan merely exercise land use rights emanating from the clan but without having to obtain some form of permission from elders of the clan or the other clan members;

(b) likewise, clans or tribes own watercourses or parts of such watercourses and members of the clan or tribe merely exercise water use rights emanating from the clan or tribe without having to obtain prior approval, etc. from elders of the clan/tribe or other members of the clan/tribe;

(c) water use rights are acquired through the following means:

   (i) by the ownership of the riparian land;  
   (ii) by the fact of first discovery and continued usage of the particular watercourse;  
   (iii) through the loss of an ancestor in defending the territorial boundaries of the particular watercourse concerned; and 
   (iv) in more recent times, a practice has evolved that if people (ie. other people as excluding those mentioned in the above three categories) participate in work parties to clear and maintain the watercourses, those people will by virtue of their work, acquire water use rights.

Category (i) is the primary category that confers proprietary interest on those holders of this basis of water use rights. This category (ie. (i)) is generally
considered to be superior than all the other categories. Categories (ii) and (iii) normally confer limited proprietary interests subject only to category (i). Category (iv) does not confer any proprietary interest but mere usufructuary rights.

(d) There are widespread belief, practices and observances of parts of watercourses which are considered as having magico-religious or spiritual significance. These beliefs and practices form part of the fabric of the society and therefore helps to reinforce the order and structures of clans/tribes and in turn the land and watercourse "owning" and use patterns existing in the society.
A. Introduction

The Kairuku-Hiri area is in fact the west coast of Port Moresby up to Bereina. The field work for this Chapter was however restricted to those villages situated on the banks of various watercourses but with close proximity to the Hiritano Highway. The field work was conducted in April 1996. The watercourses covered in this field work are the Angabanga river that flows into the sea at around Bereina; the Aroa river in the Gabadi area of Kairuku and the Vanapa river about 60 km west of Port Moresby. In fact the Vanapa and the Angabanga are among Papua New Guinea's biggest rivers\(^1\) where in terms of the volume of flow, they are ranked 12th and 13th respectively.\(^2\)

Particularly in the case of the Angabanga river, it was necessary to conduct a field survey of this kind and to understand the perspectives of customary water rights holders because the Tolukuma gold mine has commenced gold production in the head waters of the Angabanga and it was perceived that that will put pressure on the river itself and the river ecology which will in turn affect the customary water use right patterns of the holders of customary water rights and the villagers in general. It was therefore considered necessary that attempts be made through a field survey of this kind to understand the customary water rights regime.

The methodology employed in the field work was briefly that prepared questions from a standard questionnaire were personally administered (ie., put to the subjects by myself) to a gathering of village elders (and other members) and their answers and related observations were personally recorded verbatim. Surprisingly for me, most of my informers spoke

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excellent English and that reduced the need for translation and the inherent dangers in the act of translation itself whereby if care is not taken, answers may be distorted. The standard questionnaire used in all the field survey was used in here too.\textsuperscript{3} When the data obtained is presented below, it will done so separately on the basis of the three different river communities covered in this field survey.

B. Presentation of Data

The field survey commenced from Angabanga, then on to Aroa and Vanapa. I will proceed in that sequence.


The lower Angabanga river area is of course Mekeo country. Not many Mekeo villages are actually located on the banks of the river. The only village so located is Inaoae but other villages such as Veifa'a are located within the catchment area and therefore do sometime rely on the river and the water resources therein but not as heavily as those people of Inaoae.

(a) Land Use

Land is always held by the clan. Individual members of the clan merely exercise land use rights emanating from the clan. Individual membership of land is not recognised. Land use rights are acquired through the father's side. If however a man from outside the villages marries a girl from the village and settles there, that person and his children will acquire land use rights from wife's or in case of the children, their mother's clan. Water use rights also operate on similar terms.

(b) River/Lake/Watercourse Use Rights

Just as it is with land use rights, individual ownership of watercourses and hence water use rights are not recognised. Watercourse "ownership" and the water use rights emanating from such claims to ownership are held by clans or possibly tribes as larger groups of related clans.

In this area of the field survey, water use rights are said to be acquired through the following means:

\textsuperscript{2} Ibid at p.152.
\textsuperscript{3} See Annexure 1.
(a) primarily and predominantly by the ownership of riparian land;

(b) uninterrupted long term usage of or access to a particular area of a watercourse or the harvesting of a particular water resource;⁴ and

(c) through doing work for the maintenance of the watercourse like clearing water weeds or cutting and removing fallen trees clogging up the watercourse.

Categories (b) and (c) do not confer any form of proprietary interests. Proprietary interest is only acquired and reserved to or bestowed upon category (a) water right holders.

When asked: "Does the clan, tribe or village assert ownership claims over a river, lake, etc., or to parts of such rivers, lakes or watercourses?", the answer in all instances was a resounding "yes". Particularly in the village of Inaoae, my informants explained that "the clan that owns land on the banks of the river does own that part of the river."⁵ The ownership claims also include the river bed. This is quite clear from the following response "certainly, the clan that owns the land on which the water flows owns the river bed too."⁶

Navigational rights on the Angabanga river were generally not viewed with considerable acceptance but with great suspicions. When I probed into what may be the possible explanations for these suspicions, it became apparent that since the watercourse was not big enough in terms of width and its capacity to accommodate river transportation, people who travelled by (outboard) motorised canoes in particular were suspected as possibly encroaching onto their territory to "steal" their water resources or to "poison" them by way of black magic. Navigational rights of the people of the Inaoae village in particular were however accepted without reservations. If outsiders, ie. people not from Inaoae village or other neighbouring villages such as Veifa'a, informed the Inaoae people in advance that they will be travelling on the river to do certain things [ie. but must be specifically disclosed], then this navigational activity was accepted without suspicions.

Rights to use underground water (usually known as ground water) also came into prominence in this area of field survey. Ground water was greatly utilised for drinking, washing and cooking. It was quite clearly related to me that any ground water resource

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⁴ A particular example given here has been the harvesting of crayfish during the crayfish season.
⁵ To this day, the Mekeo people have a well-structured and functioning chieftain system where the chiefs are in effects heads of their clans. In my gathering with the people of Inaoae, there were nine village elders including Mr Peter Mage, who is President of the Mekeo Local Government Council. My main informants there were councilor Mage and No.3 chief of the Oae-Fuange clan, Mr Charles Aisa. These gentlemen are the source of these quoted words which were recorded verbatim.
⁶ Ibid.
found on a particular clan's land belong to that clan. In other words, that clan "owns" that ground water by virtue of its ownership of the land. However, particularly in Inaoae, it was reasoned that "anybody in the village can use the underground water [but] for non-commercial use only." If there was to be any commercial use of the ground water, that was reserved to the members of the land owning clan. If outsiders, ie. people not from Inaoae village, wanted to utilise the ground water resource, they would have to obtain permission and be particularly authorised by the clan upon whose land the ground water was located.

(c) Resource Use

Apart from the use of the water itself from the river for all domestic purposes, the people also rely on the river for fishing, transportation and in more recent times, the extraction of sand and gravel. The particular fishery of great significance to these people on the Angabanga river is crayfish and river bass. Eels and other fresh water fish are also significant.

During the dry season when there is no rainfall, the people use the water from the river to irrigate their gardens and other tree crops, such as betel nuts and fruit trees. In this regard, my informants at Inaoae village explained: "We depend on the river because all our food gardens are on the banks of the river" so that during the dry season we can water our crops with the river water. Irrigation is generally conducted by fetching water from the river with spray cans or buckets and directly watering the crops rather than mechanised spray irrigation of the garden as a whole.

(d) Territorial Claims

As against the other members of the villages, the watercourse owning clans do not claim or exert any claim of exclusivity over river or parts of the river, neither the fishery nor the non-living resources such as sand and gravel. Outsiders are generally not allowed access to those parts of the river which are "owned". If outsiders are caught fishing, etc. on those parts of the river owned by the relevant clans, in the first instance they are normally warned and if such warning is unheeded, then they are taken to the relevant village court. Compensation will generally be sought at the village court by the watercourse owning clan(s).

7 Supra n.5.
8 Communication with Peter Mage and Charles Aisa supra n.5.
Relatives of those holders of water use rights who have since left the village and gone elsewhere are "warmly" welcomed back to have access to the water of the river Angabanga and the resources therein.

(e) Magico-Religious Considerations

Certain locations of the river are accorded magico-spiritual significance. For example in Inaœae, a water spirit called Lofol lives at a place called Keveake located upstream from the village. This spirit normally appears to the people in the form of a large snake or a crocodile. Out of reverence and fear for this water spirit, the people do not wash there.

My informants also told me that there are also other water spirits but they are not permanently located at a certain site. They move from one place to another.

2. Customary Water Rights Practices in and Around the Aroa River Area

The Aroa river is a fast flowing river similar to Angabanga river in terms of its width but is shallow at some areas and therefore unnavigable in some of its parts upstream from Keveona. The river runs in the Gabadi area of Kairuku. The villages located on the banks or within close proximity to the river are Keveona, Ukaukana and Mava. Pinu village is not exactly located on the banks of the river but is within the catchment area of the river and the people (of Pinu) do have water use rights to the lower end of the Aroa river, particularly for fishing and washing. All these villages were covered in this field survey. The people in this area of field survey speak the same language (Gabadi) and have similar and related clan structures.

(a) Land Use

Land is owned by a clan or tribe as groups of related clans. No individual member of a clan can own land. An individual merely exercises land use rights emanating from the clan that individual so belongs to.

Except in the village of Keveona, in all the other Gabadi villages covered in this field survey, land is acquired through the father’s side. However if a man from outside the village marries into the village, that person and his children will acquire land from the mother’s clan. In Keveona, my main informant, Mr Vincent Sai9 was of the view that land

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9 Together with Mr Sai, there were seven other village elders at the two meetings I had with those people from that village. All questions asked were usually discussed by all present and a consensus was reached on the answer and then that answer was recorded.
can be acquired either through the father's side or the mother's side. In other words, on both sides of a person's parentage.

(b) River/Lake/Watercourse Use Rights

Water use rights are acquired on the basis of the following:

(a) the ownership of riparian land. This is primary basis upon which water use rights are acquired;

(b) through long-term uninterrupted usage, eg., where a particular family may have been fishing or setting fish traps, etc., at a certain location and over long-term usage that family may acquire water use rights despite the fact that its clan does not own riparian land. This category is identical to the common law rule of prescriptive water use rights; and

(c) through doing maintenance work on the watercourse, eg., removing floating debris and water weeds, etc.

Categories (b) and (c) do not accord proprietary interest in the watercourse but only mere usufructuary rights. Only water use right holders under category (a) have proprietary interest in the watercourse.

When asked: "Does the clan, tribe or a village assert ownership claims over a river, lake, etc., or to parts of such rivers, lakes and watercourses?", my informants resoundingly answered "yes" with passion. They explained that the particular clan or tribe that owns land through which the river flows accordingly own that part of the river. Particularly in Pinu village, my main informants\textsuperscript{10} offered the example that the Ivey Arapan sub-clan of the main Ivey clan owns the following small shallow lakes, Ourabaga, Adiva and No'o, since these are situated on their customary land. The Ivey clan almost exclusively fish in these small (rather swamp-like) lakes.

Ownership of that particular part of the river that flows through the land of the clan that "owns" that part of the river also confers on the clan the ownership of the river bed. If two different clans own riparian land on opposing sides of the river, then the clans own the river bed up to the middle of the watercourse. This pattern of customary ownership is of course strikingly similar to that of the common land doctrine of \textit{ad medium filum aquae} which

\textsuperscript{10} My main informants there were Boi Naime, Naime Naime and Kere Naime. I am grateful to Mr Boi Naime and his sons, Tai and Bu'e for providing me accommodation and for acting as field assistants in the entire Kairuku leg of the fieldwork.
appropriates ownership of the river bed of a non-tidal river to the riparian land owners *ad medium filum*.

As is the case with land, an individual cannot in that capacity own a watercourse or parts of such watercourse. Ownership always is by the clan or tribe and individuals merely exercise water use rights emanating from the clan. The particular types of water use rights which were of some significance in this area of field survey were fishing rights, rights associated with the extraction of water for irrigation of gardens during the dry seasons and rights relating to the extraction of sand and gravel.

Particularly in Pinu, the extraction and utilisation of ground water is widespread and popular. Hence water use rights relating to ground water are of considerable significance. Ground water is considered to be "owned" by the clan on whose land the ground water resource is located. That therefore means one cannot go and sink a well on another clan's land to extract ground water.

(c) Resource Use

Crayfish during the crayfish season particularly in and around the mouth of the river is the most sought after water resource on the Aroa river. Other fresh water fish are also caught all year around on the river, particularly around Mava village where the watercourse is deep and navigable all year around. Exploitation of these resources by any member of the particular village (not necessarily those with water use rights only) for subsistence purposes and the selling of surpluses at the local markets for cash is generally allowed. However exploitation of these resources at any larger scale for commercial purposes is only restricted to those people with water use rights.

The use of the Aroa river for any domestic purposes is generally unrestricted. Navigational rights are also unrestricted, even extending to people outside the Gabadi area such as the Hisiu and Roro people. However to avoid suspicions by the water rights holders of Gabadi, outsiders would be well advised to convey to their contacts at Gabadi their navigational intentions well in advance.

The extraction of sand and gravel from the river for house building in any of the Gabadi villages is generally unrestricted. To avoid ill feelings amongst themselves, the riparian land owners are generally notified well in advance. Extraction of sand and gravel for any large scale projects of commercial nature is strictly prohibited and restricted to the owners of riparian customary land.
(d) Territorial Claims

Up to April 1996, the time the fieldwork was conducted, the riparian land owning clans or tribes have not made strong claims to exclusivity particularly over their parts of the Aroa river. They have generally allowed all other members of their village communities to access the river and its resources. There was however concern raised that perhaps in the future, particularly as a consequence of population increase and the diversification of water use requirements, the riparian land owning and hence watercourse owning clans will without doubt exert rights of exclusivity over the parts of the river they "own" and the resources (both living and non-living) therein.

Particularly in Pinu village, members of the Ivey clan who own the shallow fishing lakes of Ourabaga, Adiva and No'o make and assert exclusive rights over these lakes. Other members of the village accept and recognise these claims. Any act of violation of these rights is dealt with before the village court.

Any person who has ancestral ties with these Gabadi villages is only allowed access to the watercourses and other resources therein with prior express permission of the riparian land owning clans who are also known as the owners of the watercourse or parts of such watercourse in the case of the Aroa river.

(e) Magico-Religious Considerations

Magico-religious or spiritual values and practices with reference to water spirits are not prevalent in this area of field survey. Hence no specific parts of the river were identified as having spiritual significance.


The Vanapa village is the main village that is on the banks of the Vanapa river. Hence fieldwork was only done in this village. Many other people also settle by way of squatting on the Vanapa people's customary land on or along the Vanapa river. Because such people are squatters, I did not consider it necessary to speak to them.

(a) Land Use

Land is owned by clans. Individual members of the clan do not own land but merely exercise land use rights emanating from the clan. Permission to use land by members of the clan from the clan elders or other members of the clan is not required before one uses land. Land use rights are acquired through the father's side only.
(b) River/Lake/Watercourse Use Rights

Water use rights are only acquired through the ownership of riparian land. However claims of ownership rights to the river or parts thereof are not strong and therefore all the people of Vanapa village appear to claim equal rights. Accordingly, any person from the village, including those squatting on customary land are entitled to use the river and the resources therein without any restrictions.

(c) Resource Use

The river is extensively relied upon for the provision of all domestic purposes, ie., drinking, cooking, washing utensils, bathing, etc., transportation, small-scale irrigation for garden crops, and of course fishing. Talapia and river bass are the dominant fishery where surpluses are usually sold for cash in the markets in Port Moresby.

There are no restrictions as to who is allowed and not allowed access to the resources of the river. All Vanapa village people and the settlers have equal rights.

(d) Territorial Claims

With allowance made for those settlers amongst them, the village of Vanapa collectively does make claim and assert exclusivity rights to the river and the resources therein. Hence outsiders, ie., people from outside their community, are generally not allowed access to the river and the resources therein.

(e) Magico-Religious Considerations

The people of Vanapa do hold beliefs in the existence of river spirits in their river. There are certain locations on the river which they consider to be inhabited by river spirits and therefore they are not allowed to throw stones into these areas for they believe that if they do, then flooding will be caused.

C. Summary and Conclusions

The recurring themes which emerge from these case studies can be summarised as follows:

1) Land, in particular riparian land, is never owned by an individual but by a clan or tribe (being as a collection of clans). Individuals merely exercise land use rights;
2) Similarly watercourses or parts of such watercourses and ground water are owned by those clans on whose land watercourses run through or are located; and

3) Except in Vanapa village on the Vanapa river, there are elaborate rules regarding acquisition of water use rights. Water use rights are acquired by way of:

(a) ownership of riparian land;

(b) through long-term continued usage; and

(c) by doing watercourse maintenance work.

Categories (b) and (c) do not accord proprietary interest on the holders of water use rights on these basis but merely confer usufructuary rights. Proprietary rights in the watercourse are only conferred under category (a). Any form of large scale commercial exploitation of water resources is restricted to category (a) of water rights holders. Equally when negotiating concessions for natural resource development projects, category (a) rights holders are normally accepted as the proper people to negotiate with since they are considered to be the legitimate owners of riparian customary land under the existing customary land tenure system and therefore the owners of the watercourse or parts thereof.

4) There are widespread beliefs and practices associated with accepting and respecting certain parts of watercourses as being occupied by water spirits. The point to be emphasised here is that these observances play a significant role in keeping order and the social fabrics of society together in the societies which they are observed. Equally also, these particular areas of watercourses which are respected as being areas of magico-spiritual significance play an important role as being sanctuaries for living water resources to seek refuge from human over-exploitation.

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11 For recorded claims of such "ownership" rights in other parts of Papua New Guinea, see Haines A.K., "Traditional Concepts and Practices and Inland Fisheries management" Morauta et. al. ed., 
Traditional Conservation in Papua New Guinea: Implications for Today, IASER Monograph No.16, Port Moresby (1982) 279 where the author notes at p.282:

"The ownership of fishing rights or waterways by individuals, groups or villages is the most deeply held traditional concept affecting the fisheries manager. Groups and individuals lay claim to ownership of waterways and the fish in them, sometimes to the exclusion of all outsiders or tolerating them only under certain conditions."

For traditional perceptions on the right of access to sources and ownership of water in the Moripi society which is further west from the Mekeos, see Haiveta C., "Freshwater Supplies, Past and Present, in Lese Oalai, a Gulf Province Village", Morauta et. al. ed., Traditional Conservation in Papua New Guinea: Implications for Today, IASER Monograph No.16, Port Moresby (1982) at p.273.
Chapter 11

Incidents of the Practice of Customary Water Use Rights in Selected Inland Water Areas of the Gulf Province

A. Introduction

The Gulf Province accounts for more watercourses in Papua New Guinea second only to the Western Province. It is particularly in the West Kerema districts of Ihu, Baimuru and Kikori that many of the large navigable rivers like the Vailala, Purari, Era, Pie (pronounced, “Pi-e’e”), and the Kikori are situated. Field work for this was, for logistical reasons, restricted to selected villages, in and around the Vailala river in the Ihu District; and Purari, Pie, and Era rivers all in the Baimuru District.

It is interesting to note at the outset that the people encountered in this field survey share many similarities with those people of the Sepik river and Ramu river areas as discussed in Chapters 8 and 9 respectively of this thesis, particularly in terms of the food they eat; the food gathering and preparation processes; and the segmentary structures of their traditional societies where they are organised in the ascending units of lineage, sub-clans, clans, and clan phraties. A plausible explanation for this appear to be that since all these people live in similar natural environments, they have by necessity developed similar skills and lifestyles to survive in such environments. Hence, the similarities.

The methodology employed in this sector of the field survey is same as that used for Chapters 8, 9, and 10 of this thesis. Prepared questions from a standard questionnaire\(^1\) were put to village elders and other members gathered with me and these people then discussed the questions and gave a collective response which was then recorded verbatim. This approach was necessary: first; to ensure that individual members did not give any self-

\(^1\) See “Annexure 1” at p 296.
serving responses; and, secondly to ensure that the answers are verified by the other members of the village present so that qualitative reliability is enhanced.

B. Presentation of Data

In the interest of coherency and clarity, the analysis of the data obtained in this sector of the field survey will be presented under three categories representing the different inland water communities of the Vailala river; the Pie, Ela, Poima and Purari; and that of the Era River. The Pie, Ela, Poima and the Purari are considered together for the main reason that they are within close proximity and therefore share common boundaries. Ideally, the Purari would have been considered separately if I had covered more villages than the single village of Mapaio that I was able to cover.


The Vailala river is a tidal navigable river. The township of Ihu is located on the banks of this river. Aggressive logging activities have been conducted by different logging companies in the Upper Vailala around Bonafa since the mid-1980s. Today, logging activities are conducted at a comparatively reduced scale. Large ocean going vessels still go up the Vailala to transport the logs. This has caused severe strain on the watercourse and the water resources therein. Consequently, this has adversely affected the lives of the indigenous peoples who live on the banks of this river and depend on it for their subsistence way of life. In direct response to this threat, the people from the middle to the lower Vailala have formed a pressure group, called the Vailala Waterway Committee to collectively pursue their interests.

The villages covered in this field survey are; Belepa, Hiroi, Lepokera, Karokaro, Vailala East No.2, and Vailala West. All these villages are situated either on the banks of the river or within close proximity to the river. Nevertheless, people from all these villages depend on the Vailala river for good gathering, all domestic purposes, transportation and such other purposes associated with their traditional way of life.

Questions put to the people related to five main themes. These being: (a) land use; (b) water use rights; (c) resource use; (d) exclusivity of territorial claims; and (e) magic-religious practices. The analysis will now proceed under this themes.
(a) Land Use

In all the villages under survey, the clan or sub-clan owned land and other valuable commodities which occurred on their land such as timber. Individual members of a clan or sub-clan did not own land but exercised land use rights which emenated from the clan or sub-clan which they belonged to. Clan membership was usually by agnatic descent. Non-agnates, mainly by adoption, also acquired membership in a clan. Hence, the societies being patrilineal, land use rights were mainly acquired through the father’s side. A mother’s children were allowed usufructuary rights only to the mother’s clan land.

(b) River/Watercourse Use Rights

Water use rights are usually acquired in these communities under survey by the following means: (a) on the basis of riparian land ownership by the clan to which the people belong; and, (b) on the basis of long term usage of a particular watercourse or specific parts of such watercourse, particularly stretching some generations back. The latter category was usually associated with lineages or sub-clans rather than the whole clan. In Hiroi village, category (b) acquired rights were referred to in Pidgin English as “kanu wara”, literally meaning “canoe water”. This meant that when a certain person or a family regularly and consistently used a given part of a watercourse as visually represented by the presence of that person’s or a canoe belonging to a family member of that person in that location, that part of the watercourse was generally acknowledged by the other members of the community as being reserved for the use of that particular person or his or her family members.

In all the six villages under survey, it was agreed that whilst during their ancestor’s time claims to exclusive territorial water use rights may have been strictly observed and enforced, these days, in the words of Mr. Ken Ori, an elder of Vailala East No.2 village, “we openly share the use of our waterways.”2 These days water use rights were not as strongly asserted as land use rights are. But it was nevertheless impressed upon me that where water use rights were claimed, such rights were not claimed by individuals but by the clan. Owners of riparian land have the strongest claims in the nature of proprietary “ownership” interests than those who claim and exercise water use rights on the basis of long term usage. Hence by the operations of a logging company, members of the riparian

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2 Mr. Ori spoke these words in Tok Pisin and I translated and recorded these words verbatim at the field work site.
land owning clan or clans as "owners" of the watercourse, are expected to take a lead in seeking remedial action.

When specifically asked as to whether the clan that have water use right can assert "ownership" of the watercourse or parts of such watercourse, the response was resolutely affirmative in all the villages under survey. For example, in Vailala East No.2 village, an elder, Mr. Ken Ori, responded as:

"Definitely yes. For example, my clan Huruvu Aheavavu owns parts of the land immediately down stream from Ihu station so we do assert ownership rights over that part of the river".3

When asked as to whether the ownership claims also included the river bed, the response was positive in all the villages under survey in this sector. Again Ken Ori explained:

“Our ownership rights also include the land upon which the river flows. Whatever clan that have ownership over the part of the river, also own the river bed because that river bed is a continuation of the part of their riparian land.”4

It is interesting to note that this response or rather explanation, bears close similarities to that offered by an elder in the Upper Sepik river village of Iniok as recorded in Chapter 8 of this thesis5 and subsequently recorded elsewhere6 where the village elder explained that since the clan owns the land that the river flows on and the clan land holds or sustain the river, it necessarily follows that that land owning clan must also own the river or those parts of the river which flow on their land.

It is quite clear from explanations like these that land ownership is the determining factor either in acquiring water use rights or "ownership" over watercourses and water beds or parts thereof. These same explanations, or rather principles, are applied to underground

3 Ibid.
4 Ibid.
5 See at p 167 particularly at pp. 169-176.
6 See Kalinoe L., “Customary Water Rights and Water Law in PNG. A case study of the Upper Sepik River Area” (1996) 2 (1) Melanesian Journal of Land Studies 1 at p 9. In this Vailala East No.2 village, a 55 years old man 1942 - 1997 Mr. Heako Kaikara, also spoke very eloquently and passionately on the subject thus:

“Everything that lives under the water, the water and water bed belongs to us. Any thing that is under the water bed or sea bed belongs to us. Before when the government did not come everything belonged to us. Now the government is coming and trying to take away everything from us. When our mothers gave birth to us, they wash us in that water, we drink that water, wash in that water, even wash sago in that water. So everything belongs to us.”

Mr. Kaikara spoke these words in Tok Pisin and I translated these words verbatim at the site of interview and recorded them in writing.
water with the consequence that the clan that owns the land under which ground water is found is considered to be the owner of the ground water too.

Just as land use rights are held by a clan rather than an individual member of the clan, water use rights or even more so, watercourse “ownership” rights are held by the clan or sub-clan rather than an individual person. But in the case of a small watercourse, it is possible that a lineage rather than the clan may have “ownership” over such a watercourse.

In relation to ground water, it was agreed in all the villages under survey that the clan that owns the land under which ground water is located may claim ownership right over the ground water resource. But, it is usually the case that after a well is eventually sunk and water is drawn, everyone in the village may be allowed access. Those other people who come and draw water from the well fully acknowledge the ownership rights of the clan upon whose land the ground water is located and extracted.

The specific water use rights which these people under survey claim and utilised relate to all domestic use, fishing, crocodile hunting and the extraction of sand and gravel. Depending on the purpose for engaging in fishing, fishing rights may be subject to restrictions. There are no restrictions against all members of the village community to fish for domestic consumption or feasting. There would however be restrictions if one is to engage in a large scale artisan fishing for commercial purpose to the extend that such activity is only restricted to members from the watercourse “owning” clan. Likewise, crocodile hunting and the extraction of sand and gravel is only restricted to members from the clan that “owns” the watercourse. The rationale behind these restrictions appear to be that where it is considered that an economic gain is to be made from the exercise of a specific water use right, the exercise of those rights to attain those gain should only be enjoyed by people who have “proprietary interest” in the watercourse to the exclusion of everyone else.

As there are no restrictions against fishing for domestic consumption, there also are no restrictions against other members of the village community or inter village communities to use the water and watercourse for all domestic purposes. In fact, transportation right over the entire Vailala is considered to be a universal right available to all people of Papua New Guinea.
(c) Resource Use

Fish, particularly barramundi and bass together with turtles, eels and prawns were the popularly sought after and exploited resources both for domestic consumption and the sale of surpluses at the local markets in Ihu, Kerema or even Port Moresby for cash.

In this part of the field survey, I was not able to record any instances where the watercourse “owning” clans would issue restrictions over use of a watercourse or parts of such watercourse if over exploitation of resources is perceived or when water levels were low during dry season and therefore threatening the habitats of the exploited water resources. By contrast, it will be recalled from the discussions on the Upper Sepik and Ramu river areas in Chapters 8 and 9 respectively that this was a prominent feature where watercourse (mainly lakes) or parts thereof during dry seasons or when certain water resources were perceived to be dwindling in numbers, access to these watercourses was either restricted or banned.

(d) Territorial Claims

When asked as to whether the watercourse owning clan could make claim of exclusivity over the watercourse or parts thereof, there was a general “yes” but accompanied with the qualification that nowadays access to water resources for domestic consumption is liberally allowed to the extent that territorial exclusivity claims are now almost non existent.

(e) Magico Religious Considerations

In all the villages under survey here, certain areas of the watercourse where considered to be of magico-religious/spiritual significance. Some of these beliefs and practices clearly impact on the social ordering of the societies in which they are observed and therefore play an important part in the social order of society.

Having said that, it now becomes clear as to why people in these societies appear to have a profound respect for their “Vailala River” and therefore felt that their lives are so intertwined with the river itself so that it caters for their lives both physically and spiritually.

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7 See at pp. 167-193.
8 See at pp. 194-200.
9 In this regard, I was briefly told of an incident which is referred to as the “Vailala Madness” where sometime in the early 1900s or thereabouts God revealed himself to two men and those two men became healers and were able to interpret dreams and interpret and predict future events.
2. Customary Water Rights in the Pie, Ela, Poima and Purari River areas.

These rivers flow down to the sea westward from the Vailala river (Ihu township) and eastward from the Baimuru township, i.e., they are located between Ihu and Baimuru. These rivers are considered together for the reason that they all have a same source and are very close in geographical proximity to each other. The people in this sector of the field work have two languages only: the Koriki language for those on the Pie, Ela and Poima rivers and lare language for those on the Purari. These language speaking people prefer to be identified on the basis of the languages they speak where the Koriki speakers prefer to be referred to as Korikis and likewise the lare speakers prefer to be called the lares. However there are substantial signs of integration between these two peoples largely through inter-marriage and trading.

The villages covered in this field survey are Karurua on the Pie river, Koravake, Orari and Akialavi on the Ela river; Marivepea, Awamu, Larinava, Abigahe, Kiwaumai, Mirimairau and Owmau on the Poima river up towards the Purari and the big village of Mapaio on the Purari. The villages on the Poima are comparatively smaller villages and within close proximity to each other.

(a) Land Use

In all these villages under consideration, individual ownership of land is not recognised. Land is always owned by a clan and individual members of the clan merely exercised usufructuary rights. Acquisition of land use rights are held through the father’s clan as all these societies are patrilineal.

(b) River/Lake/Watercourse Use Rights

As is the case with land use rights, water use rights are held by the clan and individual members of the clan exercise such rights emanating from the clan. Water use rights are acquired by a particular clan mainly on the basis of the ownership of riparian land. Long term use of a particular part of the watercourse, particularly tracing back to ancestral use, also gives water use rights near to “ownership” to a particular clan.

Specific water use rights asserted and exercised by these people relate to all forms of domestic use, fishing and crocodile hunting rights. Fishing rights are the most dominant because the people engage in small-scale commercial fishing. In fact until the early 1990s,
there was a fish processing plant build by the Gulf Provincial Government in Baimuru and the local people were supplied free ice as on incentive for them to go fishing and to sell their catch to the plant. The fish processing plant has gone out of operation but local fishermen nowadays catch fish to sell to fishing trawlers which fish in the Purari delta fisheries.

When asked as to whether riparian land owning clans asserted ownership rights to rivers/watercourses or parts thereof, in all instances, the people answered in the affirmative. For example Mr. Evui Po’o of Karuru village on the Pie river responded:

“Absolutely yes. For example, my big clan, Kamainairu own this part of the river Pie from the Baimuru Station down to the sea.”

All the other people gathered during the (public) interview agreed with Mr. Po’o’s claim.

When further asked as to whether the “ownership” claims included river beds, that was also answered in the affirmative. When responding to this question, Mr. Benson Avau of Koravake village at the junction of the Ela and Poima rivers explained:

“Definitely yes. These claims also include land under the river and lakes because our land holds these rivers or lakes.”

When asked whether ground water would belong to anyone, the response was that the clan that owns the land in which ground water occurs, would, by virtue of ownership of land, own the ground water too. This is a reasonable and logical explanation because in the normal course of events, it is usually members of a land owning clan who would dig a hole upon their land to look for ground water. It would not be proper for someone from a different clan to enter upon another clan’s land and dig a hole to look for ground water.

Once ground water was located and a water well established, such well was however usually liberally used where members of another clan who are related one way or another (by marriage etc.) were allowed access to the water well.

(c) Resource Use

This area of the Gulf Province that takes in the Purari delta is without doubt, one of Papua New Guinea’s rich fishing grounds. This particular fishing ground boast a

10 Mr. Po’o spoke in Tok Pisin and I translated and recorded these words verbatim at site of interview.
barramundi fishery, Papuan black bass fishery, prawns and lobster fishery, and mud crabs in abundance.

As indicated earlier, many people in this area of survey therefore engage in fishing for consumption and also for commercial profit. Hence, this fishery resource is the most single valuable water resource that these people have and they appear to jealously guard it from outside encroachers. Needless to say, fishing rights are therefore treated seriously.

Hence, it was generally agreed to in all these villages, particularly during the dry season when the water levels are low, that, the elders of the watercourse (or parts thereof) owning clans would usually place restrictions on the method of exploitation of the fishery resource, for example by prohibiting the dragging of nets or placing restrictions on the length of nets etc... Any breaches of such restrictions would normally be enforced in the local courts.

(d) Territorial Claims

In all the villages covered in this study, the watercourse “owning” clans or in some instances, the village as a whole, did make some claims of exclusivity over parts of the watercourses which they considered to be “owned” by them. Such claims of exclusivity were however not strictly enforced at the village level. But rather there was liberal use. The other people in the village however do readily acknowledge that certain parts of the watercourse are in fact owned by some other clans but that they are allowed access only. Such liberal access is however not readily made to people from other distant villages.

It must also be mentioned that geographical territorial claims made by clans in one village do overlap with those made by other clans in another neighbouring village. In that regard, there remain a potential source of conflict. Personally, I was mindful of this and did not pursue any self serving and often conflicting territorial claims.

(e) Magico Religious Considerations

In all the villages under survey, some parts of watercourses were considered to be of magico religious or spiritual significance. Such beliefs and practices instill a sense of respect and duty on the part of these people and therefore to value and protect their rivers, lake and creeks. Hence it is also reasonable to suggest that such concepts of respect and duty gives credence to the claims of ownership to parts of these watercourses by the people through their clan entities.

11 Mr. Avau spoke in Tok Pisin and I translated and recorded these words verbatim at site of interview.

The Era river flows into the sea between Baimuru and Kikori. In fact the delta area is connected by waterways to Kikori and locals use the deltas to travel to Kikori rather than through the sea. I took this route too. The people in this part of the field survey are known as the Urama people. The villages covered in this survey are Ikinairu, Koivinairu, Avanairu, Marikari, Pakemanea, Arema, Marianairu No.1, Marianairu No.2 Aumao, Kamainairu No.1, Kamainairu No.2 and Oreimia. In fact the villages of Kamainairu No.1, Kamainairu No.2 and Oreimia are located on a waterway that is regarded as part of the Pie river because this waterway connects the Pie with the Era. These three villages are however Urama villages and not Koriki. Hence they are considered in here together with the other Urama villages.

(a) Land Use

Land is always owned by a clan. Individual members of clans do not own land but acquire land use rights from the clan. Land use rights are acquired through the father’s clan, not the mothers.

(b) River/Lake/Watercourse Use Rights

Consistent with land use rights, water use rights are never individually held but by the clan and individual clan members merely exercise usufructuary rights emanating from the clan.

The main basis upon which such water use rights are acquired are first by the ownership of riparian land and secondly through long term use of a certain location of a watercourse.

When asked as to whether these clans which held water use rights also asserted ownership claims over a watercourse or parts of a watercourse, the response in all instance was an unqualified “yes”. For example, in the village of Ikinairu, a representative of the elders gathered at the interview, Mr. Muka Eine responded as:

"Definitely yes. Those clans whose land border on the river or waterway do claim ownership rights over those parts of the river."\(^{12}\)

These ownership claims also include ownership of a river bed. It was explained that these ownership claims exclusively based on the ownership of riparian land. Long term use

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\(^{12}\) Mr. Eine spoke in Tok Pisin and I translated and recorded his response verbatim at the location of the interview.
of a particular watercourse or parts thereof did not accord "ownership" but mere water use rights. Ownership claims are only made by riparian land owning clans.

Underground water is considered to be owned by those clans on whose land such water occurs.

(c) Resource Use

Together with the survey area considered immediately above, this area is one of Papua New Guinea’s rich fishing grounds. The fishery resource is same as that in the Pie, Ela, Poima and Purari river areas as discussed immediately above. Fishing is the main activity that these people engage in; both for consumption and for commercial profit.

Consequently, fishing rights are taken seriously. It was however conceded too that since the fishery is plentiful, the various water use rights holders have not made any exclusivity claims but have rather allowed for liberal exploitation for all members of the village communities.

(d) Territorial Claims

As indicated above, the watercourse “owning” clans to date have not been making any claims of exclusivity over their watercourse in so far as such claims would have been made at village or neighbouring villages level. Save for transportation purposes only, outside encroachers, meaning those not from the same village or a neighbouring village, are definitely not allowed access. In this regard, Mr. Muka Eine of Ikinairu village said:

"Outsiders are not allowed to come and use our waterways. If they do, we will take them to court.”13

(e) Magico Religious Considerations

There was no shortage of parts of watercourses in all the villages under consideration where some form of magico religious or spiritual significance were attached to. Whilst these people are Christians, predominantly of the Seventh Day Adventist (SDA) faith, they also believe that river spirits do exist too and therefore they should not do anything to upset these river spirits. In this regard, it was reasoned that their belief in God and Christianity as a whole is something that will take them to heaven in the next world. But in this world, they have to live in harmony with everything that are in this world as created by God

13 Ibid.
himself when he created this world as recorded in the book of Genesis of the Christian Bible. From this reasoning, one can realise that these people’s beliefs in the river spirits are real. So for these people, their watercourses have real spiritual significance too.

C. Summary and Conclusion

The main features which consistently and prominently feature in the societies reviewed in this Chapter can be summarised as follows:

1. riparian land and watercourse use patterns show that land and water use rights are held by the clan and individual members of such clans merely exercise use rights only;

2. watercourse or parts of such watercourses are usually “owned” by a riparian land owning clan and such watercourse owning clans may place restrictions on the access to or use of such watercourses or parts thereof;

3. water use rights are acquired through two main bases: (a) the ownerships of riparian land which translates as an exercise of “ownership” rights; or (b) through long term (usually ancestral) use of a particular watercourse or parts of such watercourse. Proprietary interest in a watercourse is only acquired through category (a). Category (b) does not confer any proprietary interests;

4. Perhaps owing to the abundance of fisheries and other water resources in this part of the country, the people do not strictly observe water use rights but allow for liberal access. There are however strict restrictions against outside encroachers (i.e. people who are not related in any way to the local communities) coming into the local community’s fishing grounds and having access to the resources; and

5. Certain parts of a watercourse have magico religious or spiritual significance to the people and the people have spiritual relationships with their watercourses and accordingly treat them with respect. In my view, this factor gives credence to the people’s “ownership” claims to their watercourses.

Whilst at common law (as seen in Part I) watercourses in the natural state are not capable of ownership, the case studies presented in this part (Part III) of the thesis overwhelmingly show that by the customs and practices of these indigenous peoples, watercourses are in fact owned by the riparian land owning clans. Such ownership rights
Map 6: The Main Rivers and Lakes in Western Province.
Chapter 12

Incidents of the Practice of Customary Water Rights In
Selected Inland Water Areas of Western Province

A. Introduction

The Western Province has more watercourses than any other province of Papua New Guinea. It is also in this province that the country’s longest river, the Fly river, which runs for 1,200 km is located. The Fly also has many tributaries. The most significant ones, which themselves are large rivers by any standards, are the Ok Tedi river (also known as Alice River) which is in fact the head waters of the Fly (running for more than 200 kms) and the Strickland river whose headwaters connects with the Lagaip river in the Enga Province.

Owing to mining activity in the Ok Tedi and Porgera mines, these particular watercourse has been under enormous stress. As noted earlier in the introduction in Chapter 11 of this thesis, this has prompted the affected customary water rights holders to pursue compensation claims in the courts.

The fieldwork for this chapter was however restricted, on the basis of logistics, to selected villages on the Ok Tedi river and Upper Fly river areas; Middle and Lower Fly river areas; and Lake Murray. As was the case in all the other field surveys presented in this part (Part III) of the thesis, the standard questionnaire (see Annexure 1) was administered in the villages covered this time however not by myself, but by two students from the University of Papua New Guinea whom I engaged. These students were locals from the area of field survey; one was from the Upper Fly river and the other was from the Middle Fly area.

1 See at pp. 2-7. See also chapter 14 of this thesis at pp. 240-259.
B. Presentation of Data

The data obtained will now be presented in three sectors: (a) Ok Tedi/Upper Fly river Areas; (b) Middle/Lower Fly river Area; and (c) the Lake Murray.


The villages covered in this sector are Atkamba, Ningerum and Drimbemasuk.

(a) Land Use

Land is always held in common. Individual ownership of land is not recognised. Land use rights are acquired by individual members of the clan on the father’s side.

(b) River/Watercourse Use Rights

Water use rights are acquired on the same basis as land use rights. The clan that owns land on the banks of a watercourse also asserts ownership rights to the specific part of the watercourse within the boundaries of the riparian land.

The clan that owns the land under which ground water exist do own the ground water too.

(c) Resource Use

Prior to the existence of the Ok Tedi Mine, the people enjoyed drinking washing and fishing on their watercourses. The water was also used for the sago extraction process. In the village of Atkamba, some people even used the river as mirror for grooming purposes.2

Subsequently after the mining activities at the Ok Tedi Mine, the people do not enjoy fishing because there are no fish there now. They no longer use the water for drinking because it is considered to be polluted by the wastes from the mine. Instead these people now rely on rain water and underground water for drinking and cooking.

(d) Territorial Claims

The members of the watercourse owning clans do make claims of exclusivity over the parts of the watercourse which they “own”. Except for commercial fishing, watercourse owning clans however do not strongly assert their claims of “ownership” rights but allow

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2 This is recorded by my field researchers in this sector of the survey, Mr Kiomin.
for liberal access. Liberal access is nevertheless restricted to other members of the village community.

(e) Magico Religious Considerations

There are clearly no shortage of parts or areas of a watercourse which the people acknowledge, observe and respect for their magico religious or spiritual values.

Such beliefs and practices are no doubt indicative of the extent of reliance for both physical and spiritual (particularly traditional rituals) these people place on their watercourses in their traditional ways of life. This in turn shows that these people have a very special relationship with their watercourses to the extent that these watercourses play a very significant part in their lives.

2. Customary Water Rights Practices in the Middle Fly/Lower Fly River Areas

The villages covered in this sector of the field survey are Tapila in the Middle Fly; Pukaduka and Uparua in Morehead sub-district; Bikam in the Trans-Fly area; Damuna in Lower Fly around Kiwi Island; Gamaewe and U’Ume on the Binaturi river, a tributary of the Fly; and Kibuli, on the Pahoturi river, a tributary of the Fly river too.

(a) Land Use

Land is always held in common where ownership is vested on the clan or subclan.

Individual members of the clan or sub clan in turn exercise the beneficial use rights as usufructuary rights. Boundaries of such clan land held under customary land tenure are usually indicated with reference to either a sacred place (e.g. ceremonial place), a creek, a hill or a special type of tree.

(b) River/Watercourse Use Rights

Water use rights are acquired and exercised in the same manner as land use right. Essentially, water use rights are acquired on the basis of the ownership of riparian land and are held by the riparian land owning clan or sub clan.

Individual members of these clans then in turn exercise the beneficial use rights. Such beneficial use rights mainly relate to fishing rights, crocodile hunting rights, and use of water for all domestic uses.

When asked as to whether a clan can assert ownership claim over a watercourse or part of a watercourse, in all instances the people responded positively. It was explained that
those part(s) of the river, lake or swamp within the boundaries of a particular clan land are
deemed to be, and are accepted by other members of the community, as being owned by
that particular clan. The river or lake beds are also deemed to be owned by that clan.

Underground water found in the clan land is deemed to be owned by members of that
clan but collectively through the clan. However, since underground water is considered to
be an important resource, particularly for drinking and cooking, other people from the
village are generally allowed access.

(c) Resource Use

The barramundi fishery is the most popular water resource in this part of the field
survey. Turtles mudcrabs and crocodiles are also significant. Fishing and hunting for these
resources for daily consumption and the sale of surpluses is the main activity that these
people engage in. Whilst fishing, hunting and or gathering of these resources for
domestic/subsistence consumption is generally unrestricted amongst these people,
exploitation of these resources purely for commercial purposes is however restricted to
those members of the watercourse “owning” clans.

In instances where the elders of the watercourse owning clans form the view that certain
water resources like for example, mudcrabs, crocodiles or a species of fish are at the risk of
being depleted as evident from dwindling catches, such elders are entitled and indeed do,
impose restrictions, ranging from total ban on access to a watercourse to restrictions on the
methods of fishing or more specifically so, the length of fishing nets. In the event of a
breach of these restrictions, offenders would normally be prosecuted by the village council
court at the village level or in the respective Local Courts of the State.

(d) Territorial Claim

When asked as to whether the watercourse owning clan can make claim of exclusivity
over: (a) the watercourse or parts thereof; (b) the fishery and other water resources; and (c)
the non-living resources therein, in all instances, the answers were positive. It was further
explained that, if the water resources were required for subsistence consumption only,
exclusivity claims were not usually made.

Exclusivity claims were however to be vigorously made if the water resources were to
be harvested for commercial purposes or as against outside encroachers who have no
relationship with either the watercourse owners or other people in the village.
There are indeed many parts of a watercourse which the people observe, preserve and respect for their magico-religious or spiritual values. Particularly specific parts of a watercourse are reserved for initiation purposes where young men are initiated into the various social structures of the traditional/customary society. Such parts of the watercourse are usually the deepest and widest parts in a given watercourse and the locals usually believe that water spirits (or water mermaids) live in these areas. During initiation ceremonies, young men to be initiated are made to swim across these areas or to dive in these areas.

It is interesting to note that this particular custom and practice is nearly identical to that of the Manambu people of the Upper Sepik river as discussed in Chapter 8 of this thesis where it will be recalled that young men who were to be initiated into the yam cult, were made to swim across a certain area of the Sepik river where it is considered to be the deepest and where the water currents are strong so the local people believe that the area is occupied by water spirits.

In this area of survey, local magicians also go to those areas of watercourses which they believe to be of magical significance to recharge their magical powers, for example, by offering sacrifices or simply by calling out or chanting.

These areas of magico religious significance are considered by the local people to be very sacred and therefore accessing these areas for harvesting or exploitation of water resources is either restricted (to headmen only for ceremonial purposes etc.) or totally prohibited.

3. Customary water Rights Practices in the Lake Murray Area

The village in which field survey was carried out in this sector are Tagum, Buseki, Kusikina, Kumbut and Pari.

(a) Land Use

Land is always held in common through the clan. Individual members of the clan do not own the land individually but they merely exercise land use rights emanating from the clan. Land use rights are acquired through the father’s side.

(b) Lake/Watercourse Use Rights
Water use rights are held along the same patterns as land use rights. Water use rights are acquired and held on the basis of ownership of riparian land by a clan. Individual members of the clan however exercise the beneficial use rights which flow to them from the consequence of being born into the clan.

The parts of the lake or a watercourse which are within the boundaries of the land owned by that particular clan are also considered to be owned by that clan. The water use rights which are held by the clan but exercised by the members of the clan are said to flow from the ownership rights over the lake or watercourse or parts of that lake or watercourse “owned” by that clan concerned.

Underground water found within the boundaries of the customary land of a certain clan are accepted as being owned by that clan.

Specific water use rights acquired and exercised relate to fishing, crocodile hunting, use of water for all domestic purposes and the right to attach magico religious values to parts of the watercourse.

(c) Resource Use

Fish, in particular barramundi, turtles, prawns and crocodiles are the popular water resources which the people in this sector of the field survey harvest mainly for domestic consumption and to sell surpluses for cash in the local markets. Catching of wild juvenile crocodiles for crocodile farming appear to be popular among these people too.

Commercial fishing in and around Lake Murray is practiced but is generally restricted to people who have ownership of the watercourse(s) or parts of such watercourses(s). Other people from within the local community (i.e., usually within the village or within neighbouring villages) can only do so (engage in commercial fishing) with the express consent of the watercourse owning clan(s).

In instances where fish or crocodile catches dwindle, elders of the watercourse owning clans(s) with the authority of the village councillor do place restrictions or impose a ban on the exploitation of a resource. Bans and restrictions have been placed in the past in such situations over heavy commercial fishing. Any breach of such restrictions are enforceable in the State local courts.

(d) Territorial Claims
In all the villages under survey in this sector, it was affirmed that the lake or watercourse (or parts only of such lake or watercourse) owing clan do indeed make claims of exclusivity over those parts which they own and consequently over the water resources therein. This, it is submitted, is a natural and logical claim which is a normal consequence of their ownership over these watercourses.

Other people (non owners of watercourse(s)) who accessed the fishing grounds etc. in the watercourse(s) or parts thereof usually obtained permission from elders of the watercourse-owning clan.

(e) Magico Religious Considerations

Many parts of the lake or surrounding watercourses have been identified as having magico religious significance. For example, in the village of Kumbut, up to 50 locations of the lake (Lake Murray) were considered by the local people there to be of magico religious significance. For example, if people from this village wanted to go fishing or hunting crocodiles, they would go to some of these areas and clan out to the spirits in these areas to invoked their help so that they get a good catch. It was also believed and observed that some parts of these watercourse(s) had magical healing attributes so when people were sick they would be taken to these areas and washed there with sacred chants followed by some sacrifices being offered to the water spirits there. Such sacrifices would normally include betelnut or chicken.

C. Summary and Conclusion

The customs, beliefs and practices of these people consistently show that water use rights are acquired on the basis of the ownership of riparian land. Any watercourse or parts of a watercourse that is within the boundaries of the customary land of a clan is considered to be, and accepted by the other people in the community, as being “owned” by that clan. This also applies to underground water.

As is the case with land use rights, customary water rights are held by a clan and individual members of a clan exercise the beneficial use rights (of course emanating from the clan).

As a natural consequence of their ownership over watercourse or parts thereof as determined by the extent of their riparian land, owners of such watercourses do assert claims of exclusivity over the water resources occurring in those parts they own. Other
people, i.e., those not from the particular watercourse owning clan, would usually be required to obtain permission from the elders of the watercourse owning clan before they can access the water resources occurring in those part(s) of the watercourse owned by that clan.

Furthermore, as an exhibition of their ownership rights, in severe dry season or when signs of over exploitation appear as signified by dwindling catches, elders of the watercourse owning clan(s) do impose some form of restrictions. Such restriction may relate to the method of exploitation or the equipment used to exploit that resource. It must be noted that these are commendable resource management measures.

According to the people covered in this field survey, many parts of their watercourses also have magico-religious or spiritual significance. Consequently, watercourse are not esteemed only for the physical (both living and non-living) resources they offer, but also for their spiritual significance in the total traditional ways of life of these people. It is because of these reasons that these “river people” tend to claim strong attachments to their watercourses.
Map 7: The Lakes of Southern Highlands Province
Chapter 13

Incidents of the Practice of Customary Water Rights in Lake Kutubu and Lake Kopiago, Southern Highlands Province

A. Introduction

Lake Kutubu and Lake Kopiago are two of Papua New Guinea’s large lakes that are located in the Highlands region province of Southern Highlands. Although the people in these areas are generally referred to as Highlanders, their traditional lifestyles bear close resemblance to those other inland watercourse peoples of the coastal regions of the country, particularly those of the Gulf Province, Western Province and the two Sepik Provinces (East and West Sepik). Lake Kutubu in particular, is said to be in the are of “a transitional zone between the Highlands and lowlands” and is in fact part of the headwaters of the Kikori River of the Gulf Province. The lake is linked to the Kikori by the Soro River.

These areas of the Southern Highlands Province, particularly the Lake Kutubu area, are Papua New Guinea’s first successful oil and natural gas fields. The first shipment of crude oil from these fields was exported by the operating company, Kutubu Joint Venture on 27 June 1992. Hence, exploration activity in this area has been simply frantic. This has in turn caused concern for the watercourses and water resources therein. It is therefore

2. The Kutubu Joint Venture partners are Chevron Niugini majority partner and operator, Petroleum Resources Kutubu a holding company for the PNG Government, BP Exploration, Ampolex, Oil Search Ltd., BHP Petroleum, and Japan PNG Petroleum.
4. This clearly indicated by the unusually high number of Petroleum Prospecting Licences (PPL) and the number of wells drilled since 1992 over this particular area as set out in Tables D1 - D5 at pp. 232-238 ibid.
considered necessary that attempts be made to study and understand the customs, practices and perceptions of the local indigenous peoples as holders of customary water use rights hence resulting in this chapter.

The methodology of research in this field survey adopted the same method employed in all the earlier chapters in this part (Part III) of the thesis with the exception (as was the case in the last chapter, Chapter 12) that I was not personally involved in the field survey. Instead, I engaged two students at the University of Papua New Guinea but locals from the areas of field survey to travel to these areas and conduct the surveys on my behalf by administering the standard questionnaire (see Annexure I) used in all the other field surveys in this thesis.

B. Presentation of Data

To avoid obscurity and to properly deal with matters of specific details, the data will be presented in two sectors based on each lakes.


The villages covered in this sector comprise all the villages located on the banks of the lake and within the lake. The villages of Gesge, Inu, Tugiri and Soroga are located on the banks (or there about) of the lake and the villages of Wasemi and Yolobo are located on islands inside the lake.

(a) Land Use

Land is always held in common through the clan structure. Individual members of the clan exercise land use rights only over the land. The society is patrilineal and therefore land use rights are acquired through the father’s clan.

(b) Lake/Watercourse Use Rights

Water use rights are acquired in the same manner as land use rights. Ownership of riparian land is the primary basis upon which such rights are acquired and exercised. Of course these rights are held by the clan and individual members of the clan merely exercise the beneficial use rights.

Water use rights can also be acquired by individual families or rather extended families through long term usage over generations. This is independent from the ownership of
riparian land. Such use rights would however be subject to those held by riparian customary land owners.

When asked as to whether the clan that holds riparian land could assert "ownership" claims over the lake or parts of the lake or its tributaries, the response was positive in all the villages. It was explained that the boundaries of the riparian land determined the extent of the ownership by the various clans over the lake or its tributaries. Such ownership claims also included ownership of the land below the water i.e., lake bed.

Ground water occurring within the boundaries of a clan's land are also considered to be owned by that particular clan.

Specific water use rights exercised in this are hunting of water birds such as ducks, and the extraction of sand and gravels and certain valuable stones such as cherry which is a hard flint-like quartz stone used to make sago choppers.5

(c) Resource Use

Popular water resources in this lake comprise several species of fresh water fish including talapia, cat fish, bass and some other native species and cray fish. Water birds are also popular. Straw are also collected from the shores of the lake for making mats, baskets and grass skirts.

Water from this lake is also extracted by the Kutubu Joint Venture (KJV) oil development project under a water use permit obtained under the Water Resources Act Ch. 205. The KJV pays compensation to the various clans and their members who have ownership over the lake under custom and customary land tenure. This is a very interesting development in water use rights because once statutory rights are obtained under a water use permit, the KJV is not obliged to pay compensation to the water rights holders for the mere extraction of water. Compensation is only required to be paid for consequential damages caused on riparian land under Section 16 of the Water Resources Act Ch. 205. It is submitted that the payment of compensation by KJV to the customary water rights holder in Lake Kubutu clearly accepts and legitimises the ownership claims (or some form of proprietary interests) over the lake and the water which the local people there make over their lake.

As a demonstration of their ownership of the lake, the elders of the lake owning clans do place restrictions on fishing either during dry season or when fish catches dwindle. Such

5 This is also recorded by Mark Busse, Susan Turner and Nick Araho in Supra n.1 at pp.60-61.
restrictions usually relate to the prohibition of long fishing nets or through the issuance of restrictions over accessing certain parts of the lake. To date, such restrictions have been generally respected. Nevertheless, any breaches of such restrictions would normally be reported to the village councilor and the matter may then be brought before the Local Court.

(d) Territorial Claim

The watercourse owning clan do make claims of exclusivity over the use of the portion of the lake or its tributaries it “owns”. These claims of course relate to all living and non-living water resources therein. It appears that these exclusivity claims are quite strictly observed. Access to those part of the watercourse for purposes other than transportation is by permission only. In the event where such permission is not obtained, compensation will be sought by the “owners” of that part of the watercourse from the “encroachers”. Such compensation sought would usually be in the form of money, pig, cassowaries, and shell money.

(e) Magico Religious Considerations

Whilst there are some parts of the lake which are considered to be of magico religious significance, the advent of Christianity has made the people to turn away from observing many magico-religious practices. It is however widely believed that the lake is inhabited by water spirits. This is confirmed by the ethnographical account of Mark Busse, Susan Turner and Nick Araho where they record that the Lake Kutubu people;

“... also believe that the lake is inhabited by spirits called Kuruka. Below the surface, Kuruka look like human beings and live in houses and make gardens, but on the surface they look like snakes or lizards and sometimes pull people down and drown them.”

Some parts of the lake are considered as sacred places and therefore general access is restricted. By and large, these places are either ancestral burial grounds or existing burial grounds where it is believed that the spirits live there and therefore should not be disturbed or caused to be upset.

2. Customary Water Rights Practices In Lake Kupiago

The villages covered in this sector are all located on the banks of the lake or within very close proximity to the lakes. They all however depend on this lake for their water and
water resources. These villages are Horale, Dilini, Aluni and the large village of Hagini with a population of over 1000 people.

(a) Land Use

Land is always held by a clan. Individual members of a clan only exercise land use rights. Such land use rights are acquired through the father’s clan.

(b) Lake/Watercourse Use Rights

Water use rights are acquired and held on the same basis as land use rights. Ownership (through the clan) of riparian land is the primary basis of the acquisition of water use rights. Water use rights are held by the clan and individual members of the clan exercise the beneficial use rights. Specific water use rights exercised relate to all domestic purposes, fishing, extraction of water for irrigation and the extraction of sand, gravels and stones.

When asked as to whether the riparian land owning clan asserts ownership claims over the parts of the lake or a watercourse (i.e., tributaries of the lake), in all the villages, the people answered positively. It was explained that parts of the lake or a watercourse that were within “owned” by that land owning clan. Similarly, under ground water which occurred within the boundaries of that clan’s land was also owned by that clan.

(c) Resource Use

Various species of fish including talapia, catfish and cray fish are the popular water resources that occurs in this lake. Use of the water from this lake for all domestic uses is considered to be the most important use.

(d) Territorial Claim

The clan does make claims of exclusivity over use of the parts of the lake that it “owns”. The other people in the community do accept and respect such claims.

(e) Magico Religious Considerations

Various parts of the lake are respected and observed for their magico-religious values. Particularly before the advent of Christianity, some parts of the lake or nearby ponds were religiously worshipped as gods. People who fell ill were taken to these places and hence before their gods for cure.

6 Supra n. 1 at p. 7.
Today, whilst these magico-religious practices are not strictly observed, these parts are however respected as sacred areas. It is generally considered that the spirits still live in these areas. It is quite apparent that customs and beliefs like these show the close affinity between these people and their watercourses. Watercourses therefore have both physical and spiritual use to these people.

C. Summary and Conclusion

The customary water rights practices in Lake Kutubu and Lake Kopiago consistently show that:

(a) watercourses or parts of the lake which are within the boundaries of a clan’s customary land are in fact owned by that clan;

(b) consequently, the exercise of water use rights is a demonstration of ownership rights and therefore water rights are rights or interest in property;

(c) in this area of field survey, water use rights are strictly observed; and

(d) watercourses also play a magico-religious or spiritual part in the lives of these people although the magico-religious practices may not be strictly observed as was the case prior to the coming of Christianity.

These customs, practices and beliefs undoubtedly show that these people have a strong affinity to the lakes and other watercourses which they rely on for their subsistence and the total customary way of life.
PART IV

Implications And Conclusions

Introduction to Part IV

In this part, the various concepts discussed and the issues raised in the earlier parts are pulled together and their impact on one another are canvassed. Essentially the question raised is: "In view of the general principles of law pertaining to water use rights both at common law (as presented at Part I) and statute law in Papua New Guinea (as presented in Part II), what then are the feasible implications raised by the customary water rights regime as presented in Part III of this thesis?"

Hence, attempt is made to ascertain the legal nature and status of customary water rights at Chapter 14 and the remaining chapters deal with other related implications.
Chapter 14

Ascertaining The Legal Nature Of Customary Water Rights In Papua New Guinea

A. Introduction

Although the custom (ie., the customs and usages of the people native to Papua New Guinea) is law in Papua New Guinea existing as part of the underlying law, as earlier discussed in Chapter 3 of this work,\(^1\) it is required to be proved as a matter of fact before a court can proceed to apply it as law. This is made clear under Section 2(1) of the *Customs Recognition Act* Chapter No.19\(^2\) where it says: "questions of the existence and nature of custom in relation to a matter, and its application in or relevance to any particular circumstance, shall be ascertained as though they were matters of fact." Hence the case studies of customary water rights and practices presented above at Part III\(^3\) of this work are important as such work contribute towards ascertaining the customary law regime.

The case studies presented above at Part III\(^4\) of this study are generally representative of the customary water rights regime in Papua New Guinea. These case studies are important for our understanding of that regime and for the development of the underlying law in this subject area. Whilst these studies are important *per se*, it is of even greater importance and significance that the legal position of these customary concepts and perceptions are properly ascertained and addressed. Hence such attempt is made in this Chapter where first, the statutory regime under which customary water rights are accommodated is canvassed. Secondly, that is followed by considering the question of whether customary water rights are in fact "property rights". Thirdly, the impact of statute law on customary water rights is considered. Fourthly, the important question of the mode of proving

\(^1\) See above at pp 24-49 supra.  
\(^2\) *Revised Laws of Papua New Guinea*.  
\(^3\) See above at pp 166-237 supra.  
\(^4\) Ibid.
customary water rights as alluded to in the opening paragraph of this introduction is treated in detail. Finally, relevant observations by way of conclusion will be offered.

B. Recognition of Customary Water Rights in Papua New Guinea

It must be made clear at the outset that although "the right to the use, flow and control of water is vested in the State" under Section 5(1) of the Water Resources Act Chapter No.205, Section 5(2) of the Act makes it clear that:

"This Act [i.e., Water Resources Act] does not affect customary rights to the use of water by the citizens resident in the area in which those customary rights are exercised."

This therefore allows for the legal existence of the customary water rights regime the incidents and attributes of which are as determined by the customary legal order/customary law. Of course the existence of this facilitative provision (i.e., s.5(2) Water Resources Act) itself gives tacit recognition to the pre-existing water use rights in the customary legal order. In fact the predecessors of the current legislation, namely the Water Resources Ordinance 1962 and the Water Resources Act 1967, specifically addressed customary water rights/interests under a specific part of the respective legislation, namely in Part IV; in the 1962 Ordinance, under the heading "Native Interests"; and in the 1968 Act, under the heading "Customary Interest". The legislative scheme dealing with customary rights was in general that customary water use rights were saved from the operation of regulatory regime but provision was made for such rights to be terminated and replaced with State sanctioned licences and or permits in necessary and appropriate circumstances. The loss of such customary water rights was a ground for compensation where Section 67(1) of the 1962 Ordinance and the 1967 Act (i.e., same provision) provided that:

"A native who established that he has suffered loss or damage by virtue of:-

(a) the termination ... of his customary rights to the use of water; or
(b) disturbance resulting from resettlement consequential on such a termination, is entitled to compensation for the loss or damage."

Apart from the above tacit recognition of customary water rights accorded under the Water Resources Act, various provisions of the Customs Recognition Act provides for the

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5 Revised Laws of Papua New Guinea.
recognition and enforcement of customary water rights. First, Section 3(1) of the Act generally provides that:

"Subject to this Act, custom shall be recognised and enforced by, and may be pleaded in, all courts except so far as in a particular case or in a particular context -
(a) its recognition or enforcement would result, in the opinion of the court, in injustice or would not be in the public interest;
(b) ...."

Then Section 5 of the Act significantly and pertinent provides:

"Subject to this Act and to any other law, custom may be taken into account in [civil cases] in relation to:-
(a) the ownership by custom of or of rights in, over or in connection with customary land or -
   (i) any thing in or on customary land; or
   (ii) the produce of customary land, including rights of hunting and gathering;
   or
(b) the ownership by custom of rights in, over or in connection with the sea or a reef, or in or on the bed of the sea or of a river or lake, including rights of fishing; or
(c) the ownership by custom of water, or of rights in, over or to water; or
(d) the devolution of customary land or of rights in, over or in connection with customary land, whether -
   (i) on the death or birth of a person; or
   (ii) on the happening of a certain event;
(e) .... “ (Emphasis added).

Although at common law water in known and defined channels or the watercourses themselves are not capable of ownership, the existence of Section 5 (b) and (c) of the Customs Recognition Act as cited above clearly imply that in the absence of any statutory impediments, concepts and practices of ownership of water or watercourses or rights over such in the customary legal order (examples of which are presented in Part III of this thesis) can be pleaded in a court of law and if successful, applied as law in Papua New Guinea. In other words, statute law in Papua New Guinea does recognise that at customary law, water or watercourses are capable of being owned by the indigenous people in accordance with local custom. Therefore on this particular point since the common law is not consistent
with statute law, namely the *Customs Recognition Act* and to some extent Section 5(2) *Water Resources Act* and further more that the common law is not consistent with custom of the indigenous people, the common law principle that water and watercourse in defined and known channels cannot be owned is of no relevance and application in Papua New Guinea.6

C. Are Customary Water Rights “Property Rights”?  

This question has been tentatively answered in the affirmative in Chapter 3 of this thesis.7 The rationale for that answer is developed further here.

Water rights are of course the rights one has to the use and enjoyment of water in a watercourse and its resources. "Some water rights are quantitative, applying to a fixed amount of water, measured by rate of flow. Other set no limits so long as the holder does not reduce or pollute the flow available to other water right-holders on the stream. Some continue only as long as the holder continues his specific water use, while others continue whether he used the water or not."8

Similarly, customary water rights are water rights which the indigenous people of Papua New Guinea have to the use and enjoyment of water, watercourses and water resources on the basis of and as determined by their local customs, traditions and usages. Customary water rights are however not quantitative. Provided the use of the water and the watercourse is for a purpose associated with and authorised by custom, there are no limits to the extent to which water and watercourses can be used. Furthermore, it is important to note that customary water rights are not restricted to the use of water *per se*. Customary water rights encompasses the right to the use of the water itself and all other water resources, including fish, crustaceans, and gravels, which occur in the watercourse. In this regard, customary water rights in the Papua New Guinea context differ from the ordinary concept of water rights as seen above.

In ascertaining whether customary water rights are property rights, I will proceed in this manner: first, the general concepts of property will be reviewed; secondly, the main determinants of property at common law will be identified; third the peculiar attributes of

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6 Note that the common law is subject to statute law and custom in Papua New Guinea. I have covered this at Chapter 3 of this thesis: see at pp 31-37 supra.
7 See above at pp 45-48 supra.
water rights as property rights are canvassed; and finally, the legal regime that treats water rights as property rights in Papua New Guinea is explored.

1. General Concepts of Property

As was seen earlier in Chapter 3, in law "property" is essentially a bundle of rights in a thing which determine what a person may or may not do to the thing concerning "the extent to which he may possess, use, transform, bequeath, transfer, or exclude others" from the thing which he, she or they relate to as his, her or their property. "The legal conception of property is, then, that of a bundle of rights over resources that the owner is free to exercise and those whose exercise is protected from interference by others ... We may thus define property as the legal institution that, by allocating a bundle of rights over resources to people, gives people liberty over resources. Property creates a zone of privacy in which owners can exercise their will over things without being answerable to others."!

Accordingly, Professor Hirsch pertinently observes:

"The concept of property rights relates to the set of privileges and responsibilities accorded to a person in relation to the owning of property in general and real property in particular. These rights are determined by a long history of property laws, whether common laws or statutory laws. The right to property is the power to exclude others from or given them access to a benefit or use of the particular object. An elaborate system of property liability, and inalienability rules exist to bolster an owner's claim to the property or good."

Of course many types of rights of property are known to exist in the common law legal system. Some of these are succinctly identified by Professor Fisher by reference to their Latin descriptions as:

1. res propria;
2. res aliena;
3. res nullius; and
4. res communis

9 See above at pp 45 supra.
11 Ibid.
Professor Fisher then goes on to explain each of these as:

"The first refers to something which belongs to a particular person [ie., individually]. The second refers to something which belongs to someone other than the person in question. The third is a reference to something which belongs to no person. The fourth refers to something which belongs to the community at large."\(^{14}\)

In the context of the customary water rights (examples of which have been presented in Part III of this thesis), the fourth category, *res communis*, is of particular relevance. In contemporary English terminology *res communis* is also referred to as "common property." This however does not extend to what Parke, B. referred to as *publici iuris* in *Embrey v. Owen*\(^ {15}\) with reference to property in flowing water in a known and defined channel in that no one either individually or corporately can have rights of property in running water and that all have equal right of access and use of it. In other words "common property is not everybody's property"\(^ {16}\) but such property is owned corporately by defined members of a group. In the particular instance of customary water rights, proprietary interests in water courses are thus corporately owned under the clan or groups of clans social structure and therefore are *common property* not in the sense of being "everybody's property", but of those defined members of the clan or tribe.\(^ {17}\) This concept of common property is admirably articulated by Ciracy-Wantrup and Bishop as follows:

"The term 'common property' ... refers to a distribution of property rights in resources in which a number of owners are co-equal in their rights to use the resource. This means that their rights are not lost through non-use. It does not mean that the co-equal owners are necessarily equal with respect to the quantities (or other specification) of the resource each use over a period of time. In other words, the concept as employed here refers to resources subject to the rights of common use and not to a specific use right held by several


\(^{14}\) Ibid.

\(^{15}\) (1851) 5 Exc.353; 155 E.R. 579.

\(^{16}\) Ciracy-Wantrup S. and Bishop R., "'Common Property' as a Concept in Natural Resources Policy" (1975) 15 *Natural Resources Journal* 713 at 714.

owners. In the legal literature this distinction appears as 'common lands' on one side and 'tenancy in common' on the other.

The meaning of the concept 'common property' is well established in formal institutions such as the Anglo-Saxon common law, the German land law, the Roman law, and their successors. It is also well established in informal institutional arrangements based on custom, tradition, kinship and social moves ...

Common property is not 'everybody's property.' The concept implies that potential resource users who are not members of a group of co-equal owners are excluded. The concept "property" has no meaning without this feature of exclusion of all who are not either owners themselves or have some arrangement with owners to use the resource in question.18

With reference to the customary water use rights over watercourses at traditional customary law in Papua New Guinea, it will be recalled from the case studies presented in Part III of this thesis that when clans or tribes assert ownership rights to watercourses and their resources, such rights are exclusive. Therefore other people who are not members of the watercourse "owning" clan or who do not have water use rights are generally excluded from access and use or river, lakes, etc ...

It may also be recalled from the earlier discussion in Chapter 4 that "common property" is also the basis upon which indigenous people all over the world claim property rights mainly under the doctrine of aboriginal title. Early western theorists on property such as John Locke, argued mistakenly and ethnocentrically for the sole reason of justifying European settlement in the new world that since Aboriginal societies lacked institutions of government and were not "civilised" enough like their own, they were at a primitive state of nature and therefore were not capable of owning property.19 After carefully dissecting the flaws of the Lockean heresy, James Tully pertinently observes with considerable force that:

"With respect to Aboriginal property, the territory as a whole belongs to the nation (or, more accurately, the nation belongs to the territory) and jurisdiction over it is held in trust by the chiefs. The identity of a nation as a distinct people is inseparable from their relation to and use of the land, animals,

18 Supra n.16 at pp.714-715.
ecosystems, and spirits that co-inhabit their territory. Clans and families have a bundle of rights and responsibilities ... of use and usufruct over the land and waterways for various purposes. That is, property rights and duties inhere in the clans and families and apply to forms of activity and to the geographical territories or ecosystems in which the activities take place, not to the products of the activities, as in Locke's account. The activities include hunting, trapping, gathering berries, seasonal agriculture, clam-bed cultivation, fishing, and so on. The distribution and trade of the products is governed by custom and kinship traditions. These system of property are transmitted from generation to generation, not by myths of a state of nature or veils or ignorance but by the stories families and clans are responsible for learning and telling at public feasts."20

2. Determinants of Property at Common Law

As was noted earlier,21 there are three prominent rights and privileges in the bundle of rights in property that a person must have: these being, the right to use and enjoy; the right to sell and alienate; and the right to exclude others.22 "The right to exclude, in particular, is said to be the most critical without which no interest could properly be regarded as proprietary."23

Following from the above, the critical determinants of property at common law are best summarised by Tech and Dwyer when they say:

"In the law of property three concepts are of particular importance: ownership, title and possession. Ownership is the largest bundle of rights known to property law: an owner has rights which may be enforced against the whole world. He is entitled to the fullest enjoyment of property and he may freely alienate his rights. The word ownership, because of the doctrines


21 See Chapter 3 supra at pp 45-48.


23 Ibid.
of tenure and of estates, though it is freely used in relation to personal property. In regard to land, the preferred word is title. A person with title to property has at least a claim to possession of it (or its rents and profits) either now or in the future."

From the above, let us delve further into the meaning and the attendant attributes of "ownership" and "possession" separately.

(i) Ownership

At common law, "[o]wnership consists of innumerable rights over property, for example the rights of exclusive enjoyment, of destruction, alteration and alienation, and of maintaining and recovering possession of the property from all others." These "rights are conceived not as separately existing, but as merged in one general right of ownership."

Persons who may acquire ownership at common law may either be an individual, a legal entity such as a corporation or several individuals jointly or communally. Where property is corporately owned, rights, privileges and obligations attach to that body corporate (just as such rights, privileges and obligations are accorded on individual(s)) and the continuance of such rights, privileges and obligations are unaffected where individual member(s) of such body corporate dies.

With particular reference to the customary (riparian) land ownership regime in Papua New Guinea, it is usually quite erroneously perceived by many that land is communally owned. The field work data presented above at Part III of this thesis and many other published literature clearly show that ownership of (riparian) land is clearly vested in the body corporate or rather body polity called the clan or tribe and that individuals as members of such a body corporate merely exercise usufructuary rights emanating from the clan or tribe.

Similarly then, it is argued that customary water rights in Papua New Guinea are vested in the clan or tribe and individual members of such clan or tribe merely exercise usufructuary rights.

24 Supra n.22 at p.16.
26 Ibid.
27 See supra n.17 and Lea D.R. supra n.20.
(ii) Possession

Particularly in relation to land, possession is arguably the most significant indicator of a proprietary nature nearing ownership. The legal consequences which flow from being in possession of something, particularly land, are well articulated by Tech and Dwyer:

"At one and the same time possession (or more correctly seisin) is evidence of and a source of a right to possession and also an interest in land. First, possession for any period of time, however short, is prima facie evidence of a right to possession of land. Second, possession at any time itself confers a right to possession which is good against anyone who cannot show a better right to possession. Third possession, whether past or present, confers an interest in land upon its holder. This later principle has two aspects: possession for the period required by the Statute of Limitations confers an absolute title; possession for a lesser period confers an inchoate proprietary right. In the words of Pollock and Wright on Possession in the Common Law, 'Possession being once admitted to be a root of title, every possession must create a title which, as against all subsequent intruders has all the incidents and advantages of true title'."

In the context of customary land tenure law in Papua New Guinea, it has been decided in Re Hides Gas Land Project that a clan or tribe that is in physical possession of land will generally be accepted as owning the particular land. Translating this to customary water use rights, it necessarily follows that the clan or tribe that is in physical possession or rather

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29 Note that in relation to goods where a person has a lien on them or the goods are seized under distress, and therefore that person is in possession of such goods, ownership is clearly divorced from possession.

30 Supra n.22 at p.22.

31 [1993] PNGLR 309. Amet J. at p.319 (as he then was) decided that: "Applying all of these principles to the factual circumstances of these disputes, which principally involve the Tuguba Tribe on the one side and the Hiwa tribe clans on the other, the overwhelming preponderance of evidence and equity weigh towards the incumbent occupants against those who are not in physical occupation on the land ... All of these principles weigh in favour of the Kopiye against the Yugu Tuguba Pate and the Ware in respect of the campsite and water line easement. In respect of all other land, they weigh in favour of all Hiwa clans who are on the land against all the complainant Tuguba Tribe clans."

occupation of riparian customary land will generally be considered as the possessors or holders of such customary water use rights under the customary law regime which usually include claims to ownership of watercourses or parts thereof to the extent of the riparian lands they hold.

3. Water Rights as Property Rights

The question to be answered here is: "Are water rights property rights?" To properly answer this question, it is necessary to approach it from an economic analysis viewpoint and consider impacts on water rights as defined and conferred by law and the dynamics of these rights through supply and demand mechanisms that result in the creation of markets. Such an approach to water rights is more dominant in the United States of America than anywhere else. Hence, speaking of the impact of economic market forces on water law in the United States, Somach observes:

"Water rights laws developed to accommodate the physical realities of the various geographic and climatological regions of the United States. Economic and social development was, in turn, predicated upon the existence of those laws. Water rights were viewed, more or less, as a type of real property rights, with the same essential legal principles as those underlying real property law. Modifications to basic and real property concepts were limited and focused upon the obvious physical differences between land and water. The fundamental purpose of treating water as real property was to inject legal certainty into the utilisation of a resource which, due to natural conditions, was inherently uncertain."32

Colby further develops and hence amplifies the above arguments for the law to define water rights as property rights in these terms:

"One of the most basic functions of state water law, is to define property rights. Property rights define and limit the rights of members of society with respect to water resources and allow right holders to form secure expectations regarding benefits stemming from their rights. A water right does not simply give a right holder access to a specific water resource. It also defines the duties of other possible claimants and water users with respect to the right

holder. A surface water diversion right, for instance, is meaningful because it imposes duties on other water users to behave in a way that does not impair that right.

Water law, by defining the rights and duties of water users relative to one another and to the rest of society, provides a basis for market exchanges. In order for market participants to estimate the value of a water right they must be able to form expectations about the benefits associated with owning the right and the degree to which the right is protected from impairment by others. When property rights in water are ambiguous, buyers and sellers cannot ascertain the nature of the privileges and duties that are being transferred. Although well-defined property rights in water and unambiguous policies regarding transfers are important for market development, market transfers do occur when there are significant uncertainties.  

Water rights which are accorded property right status include those rights acquired through the statutory permit system and riparian rights. There appears to be some doubt as to whether unquantified water use rights such as those accruing through the aboriginal title and customary water rights regimes do actually have property rights status. Such doubts can be disposed of with ease when one realises that water rights under aboriginal title or customary law are an incident of ownership of riparian land just as is the case with riparian rights and therefore proprietary interest is a natural consequence if not on its own accord then certainly on the basis of the ownership or occupation of the riparian land. It must also be pointed out that the economic aspect and market forces in water rights concern themselves with proprietary interest in the water rights per se, acquired either through statute law or common law. Proprietary interest in water rights either at aboriginal title or customary law as in Papua New Guinea are however not restricted or limited to water use rights per se but are also rather importantly based on the ownership of riparian land. This is what prompts ownership claims over watercourses and therefore water rights in the customary law legal order as in Papua New Guinea.

Perhaps an apt response to the question earlier posed: "Are water rights property rights?" belongs to one of the highly respected American writers on water law, Wells A. Hutchins:

34 Other water rights types, particularly in the United States include appropriative rights under the prior appropriation doctrine mainly in the Western States; allotments and mutual stocks: See supra n.33.
"The development of American water jurisprudence through the last three-quarters of a century has had far reaching effects and implications. In generalising as to its good features and its frustrations, an essential consideration is that the right to the use of stream water is a right of property and protection of this right of property and protection of this right is afforded by provisions of the federal and state constitutions."35

To the extent that Hutchins says "the right to use of stream water is a right of property and protection of this right" is accorded under constitutional law; that, it is submitted, is of particular relevance to Papua New Guinea, the reasons for which are given in the following part.

4. Legal Protection of Customary Water Rights in Papua New Guinea

Customary land tenure where land is owned and held by the indigenous people on the basis of and as determined by the indigenous peoples' customs, traditions and institutions is the dominant mode of land tenure in Papua New Guinea.36

Consequently all the legislation in the natural resource sector takes account of this situation and usually exempts natural resource use by the customary land owners from the regulatory provisions of the legislation.37 Water use rights by customary riparian landowners is no exception: Section 5(2) of the Water Resources Act Ch.No.209 expressly provides that the Act "does not affect customary rights to the use of water by the citizens resident in the area in which those customary rights are exercised." Then Section 16 of the Water Resources Act Ch.No.209 imposes liability on the holders of water use permits38 to compensate landowners ie., customary landowners and lease holders alike, for any damage or loss caused in respect of the permit holders entry on or occupation of the riparian land.

35 Hutchins "Background and Modern Developments in Water Law in the United States" (1962) 2 Natural Resources Journal 416 at 443.
36 See James R.W.; Land Law and Policy in Papua New Guinea, PNG Law Reform Commission, Port Moresby (1985). For the total land available in Papua New Guinea, a massive 97% is held under customary land tenure and a mere 3% under the State largely as leasehold. Note that this 3% includes all the land that is owned by the State and those the State leases to individuals. More recent work however indicate that "nearly 99 percent of the land is customary" hence suggesting that a mere 1 percent is alienated land: See Larmour P ed., Customary Land Tenure: Registration and Decentralisation in Papua New Guinea National Research Institute, Port Moresby 1991 at p.1.
38 Two types of water use permits are obtainable under the Water Resources Act Ch.No.209: (a) water use permit for the extraction of water or discharge of waste into watercourses; and (b) water
Among other things, compensation is required to be paid for any damage consequential on the permit holder's use or occupation of riparian land or damages caused by use or control of water or a water source on or in the land.39

Certainly the above stated albeit briefly water resources management regime offers tacit recognition and express legal protection for customary water rights in Papua New Guinea. This legislative recognition and protection (of customary water rights) by Section 5(2) of the Water Resources Act Ch.No.206 has in fact prompted Ward and Fordyce who reviewed the legislation to conclude that "customary rights to use water is property" rights which therefore cannot be arbitrarily abrogated but only as in accordance with Section 53 of the Constitution.40

Section 53 of the Constitution offers constitutional protection from any action by the Government or its instrumentalities to unjustly deprive its citizens from citizens' property or interest in property. Section 53(1) provides:

"... except as permitted by this Section, possession may not be compulsorily taken of any property, and no interest in or right over property may be compulsorily acquired, except in accordance with an Organic Law or an Act of the Parliament, and unless -

(a) the property is required for -
   (i) a public purpose; or
   (ii) a reason that is reasonably justified in a democratic society that has a proper regard for the rights and dignity of mankind,
   that is so declared and so described, for the purposes of this Section, in an Organic Law or an Act of the Parliament; and

(b) the necessity for the taking of possession or acquisition for the attainment of that purpose or for that reason is such as to afford reasonable justification for the causing of any resultant hardship to any person affected."

Any legislation, be it an Organic Law41 or an Act of Parliament that purports to abrogate a citizen's property or interest in property must also comply with the procedural investigation permits for any exploratory or drilling work: See Kalinoe L. "Water Resources Management in Papua New Guinea: Law, Policy and Practice" (1994) 22 Mel J 23-40.

39 For a more detailed consideration of the compensation regime, see Kalinoe L. ibid at pp.34-37.
40 "... an Organic Law is a law made by the Parliament that is -
requirement of Section 38 of the Constitution where inter alia the legislation must: "(a) be expressed to be a law that is made for that purpose; and (b) specify the right or freedom that it regulates or restricts; and (c) be made, and certified by the Speaker in his certificate under Section 110 (certification as to making of laws) to have been made, by an absolute majority." 42

Further elaboration as to what may constitute a compulsory taking of property (or interest over property) is provided under Section 53(4) of the Constitution which provides:

"In this Section, a reference to the taking of possession of property, or acquisition of an interest in or right over property, includes a reference to -

(a) the forfeiture; or

(b) the extinction or determination (otherwise than by way of a reasonable provision for the limitation of actions or a reasonable law in the nature of prescription or adverse possession),

of any right or interest in property."

Particular circumstances under which property may be compulsorily taken or acquired by the State or its instrumentalities are stipulated under Section 53(5) of the Constitution. Notably Section 53(5)(f) of the Constitution does not speak in terms of taking or acquisition but rather allows for restrictions to be placed on the use of or dealing with property or interest in or right over property if it is reasonably necessary for the preservation of the environment or for purposes of national cultural inheritance.

Now when customary water rights are viewed in terms of Section 53 of the Constitution, they are clearly rights or interest in property (ie., accruing from riparian customary land) and therefore are clearly capable of protection under the unjust deprivation regime of Section 53 of the Constitution. It is my submission that customary water rights are in fact accorded protection under the Section 53 Constitution regime and therefore cannot be abrogated but only in accordance with Section 53 itself.

D. Impact of Statute Law on Customary Water Rights

It is obvious from the above discussions that statute law in the natural resource sector such as the Water Resources Act Ch. 205, Petroleum Act Ch.No.198, etc ... have not

(a) for or in respect of a matter provision for which by way of an Organic Law is expressly authorised by this Constitution; and
(b) not inconsistent with this Constitution; and
(c) expressed to be an Organic Law": See Section 12(1) Constitution.
impaired customary water rights but have accommodated customary water rights and have
gone to recognise and preserve these rights.

The issue that however remains to be considered is: are customary water rights holders
entitled to use water and water resources for purposes other than those recognised and
authorised by custom prevailing in their locality? To properly consider this question, the
statutory definition of customary water rights as defined by the Water Resources Act
Ch.No.205 must be ascertained since only customary water rights are exempted from the
regulatory mechanisms of the Water Resources Act Ch.No.205 under Section 5(2) of that
Act.

The Water Resources Act Ch.No.205 does not use the terminology "customary water
rights" but rather the phrase "customary rights to the use of water." It is submitted that
despite the difference in terminology, the substantive meaning of these phrases are same
and hence can be used interchangeably. I do that here. Hence under Section 2(1) of the
Water Resources Act Ch.No.205, "customary rights to the use of water" are defined as:
"rights to the use of water -

(a) that are authorised by custom; and

(b) that are being availed of at the time in question or, in the normal course of land
management, would be availed of in a customary manner within a reasonable period
after that time."

Clearly this definition restricts customary water use rights to those rights to use of water
as authorised, i.e., recognised and accepted, by custom at the particular given time. This
definition clearly takes into consideration the dynamic and evolving nature of custom and
customary uses. In other words, this definition does not restrict "customary rights to the
use of water" to those ancient water use rights as practiced by the present generation's
ancestors and now passed down to the present generation but rather allows for the evolution
of "new" rights to use water but as recognised and accepted to be so by the present
generation at the present time under prevailing customs and usages. This therefore means
that if new methods or modes of water use have been embraced by customary water rights
holders such as using gill nets for fishing, motorised canoes for transportation, mechanised
irrigation or to mechanise and improve the delivery of their mode of water supply, those are
very well within the ambit of the phrase "customary right to use of water" "authorised by
custom" and "as being availed of at the time in question."

42 Section 38(2) Constitution.
Support for this line of argument is readily found in the realisation of the fact that customary water rights mainly accrue to the user on the basis of ownership of riparian land under customary land tenure. Therefore water use rights are natural incidents of their ownership of riparian land and therefore the State cannot abrogate these rights without complying with the legislative requirements under Section 53 of the Constitution as seen above.

E. The Proof of Customary Water Rights

Customary water rights are based on custom of the indigenous inhabitants of the relevant area of Papua New Guinea. The Customs Recognition Act Ch.No.19 provides the legal apparatus for the determination and recognition of custom to be eventually applied as law. Hence Section 2 of this Act is the operative provision that provides for this. That provision reads as follows:

"(1) Subject to this Section, questions of the existence and nature of custom in relation to a matter, and its application in or relevance to any particular circumstances, shall be ascertained as though they were matters of fact.

(2) In considering a question referred to in Sub-Section (1), a court -

(a) is not bound to observe strict legal procedure or apply technical rules of evidence; and

(b) shall -

(i) admit and consider such relevant evidence as is available (including hearsay evidence and expressions of opinion); and

(ii) otherwise inform itself as it thinks proper.

(3) For the purposes of the decision on a question referred to in Sub-Section (1) a court may -

(a) refer to books, treaties, reports or other works of reference, or statements by local Government Councils (whether published or not); and

(b) accept any matter or thing stated in such works as evidence on the question; and

(c) of its own motion, call such evidence or require the opinions of such persons as it thinks fit,

but this Sub-Section does not limit in any way the discretion of the court in obtaining evidence or informing itself on the question."
The above provision clearly lays down the mode, procedure and the material of evidentiary value towards the proof of custom, in particular customary water rights. When Sub-Section (3) of the above provision is considered, it becomes obvious that the work of this nature, particularly the material presented in Part III of this thesis, becomes relevant material for the determination and recognition of customary water rights. It is only after custom is determined and recognised within the parameters of the Customs Recognition Act Ch.No.19 that custom becomes law.43 Hence the customary water rights regime as presented above in Part III of this thesis remains custom per se until and unless they are determined and recognised by a competent court of law will only then become law. Note however that under Schedule 2.1 of the Constitution, custom is given a higher status than the common law and that common law is subject to custom.

If there is conflict of custom, the situation is to be resolved in accordance with Section 7(1) of the Customs Recognition Act Ch.No.19:

“(1) Subject to this Section, and to any other law, where -
(a) in a matter before a court a question arises as to which of two or more systems of custom should prevail; and
(b) the court is not satisfied on the evidence before it as to that question, the court shall consider all the circumstances and may adopt the system that it is satisfied the justice of the case requires.”

F. Conclusion

This Chapter has shown that customary water rights are in fact accorded statutory recognition and protection mainly by the Water Resources Act Ch.No.205 and consequently by Section 53 of the Constitution. The practice and procedure in determining customary water rights for the courts to eventually apply such custom relating to water rights as law is clearly set out under the Customs Recognition Act Ch.No.19. Particularly under Section 5 (b) and (c) of the Customs Recognition Act Ch.No.19, custom pertaining to "the ownership by custom or right in, over or in connection with ... a river or lake, including the right of fishing; or the ownership by custom of water, or rights in, over or to water" can be pleaded in a civil case to ascertain and enforce those rights. Hence it becomes apparent that the

43 See s.3 Customs Recognition Act Chapter No.19 of the Revised Laws of Papua New Guinea.
material presented in Part III of this thesis becomes relevant and important in ascertaining
the legal nature of customary water rights in Papua New Guinea.
Chapter 15

Enforcement Of Customary Water Rights

A. Introduction

The customary legal order in Papua New Guinea offers limited enforcement mechanisms for the protection and enforcement of customary water rights at the local community level only but does not offer any protection and enforcement mechanisms outside the local communities. When one is faced with a situation such as this and further finds that there is no statute law on the topic, resort must be made to the underlying law of which the common law is part of under Schedule 2.2 of the Constitution.

Since there is no specific statute law that provides a mechanism for the enforcement and preservation of customary water rights in Papua New Guinea today, the protection and enforcement mechanisms and remedies available at common law obviously come into play but as part of the underlying law and where appropriate and feasible, relevant principles of a truly indigenous underlying law can then be developed. Therefore in this chapter, the range of remedies available at common law which may be relied upon to enforce any breaches of customary water rights by people or institutions from outside of the various local communities are canvassed albeit briefly.

Since the common law water rights doctrine of riparian rights and the customary water rights practices and usages share great similarities, it is submitted that the recourse to the common law to enforce any infringement of customary water rights must not be viewed

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1 In the case studies of customary water use rights presented at Part III of this thesis, enforcement mechanism for any breaches of customary water use rights exist but only within the local communities where such rights are exercised.

2 Neither the Water Resources Act Ch.No.205 nor the Customs Recognition Act Ch.No.19 provide any mechanism for the enforcement of any breach of customary water rights. The former merely provide a general compensation scheme for any interference with customary water rights by permit holders whilst the latter merely provides for the determination and recognition of customary water rights.
with skepticism. In the particular circumstances of Papua New Guinea this is a way of blending and supplementing custom with common law or vice versa to arrive at a truly indigenous jurisprudence as is in fact constitutionally mandated where the courts are called upon to develop the underlying law under Schedule 2.3 of the Constitution.

With the increase in natural resources development projects in many rural areas where customary water rights are observed and relied upon for daily sustenance, pollution of water and/or watercourses hence injuring the customary water rights holders appear to be the main threat. In this regard, the position at common is quite clear that:

"Pollution of water that interferes with property rights attaching to rivers and other watercourses may give rise to a civil action for damages and/or an injunction, and three classes of property rights can be identified in this context: (a) riparian rights belonging to the owner or occupier of the bank or banks of a river; (b) rights belonging to the owner or occupier of the bed of a river and (c) rights belonging to those owning or leasing fishing rights."4

And largely because:

"Every riparian proprietor is thus entitled to the water of his stream, in its natural flow, without sensible diminution or increase and without sensible alteration in its character or quality."5

Whilst intentional pollution of rivers and other watercourses can be prosecuted by the relevant State authorities as criminal offences (in Papua New Guinea) either under the Summary Offences Act Ch.No.264,6 the Water Resources Act Ch.No.2057 or the Health Regulations8 as seen earlier in Chapter 7,9 civil action can mainly be pursued either in private nuisance, and/or negligence where that can be shown. To a lesser extent, civil actions can also be brought for trespass10 and under the rule in Rylands v. Fletcher.11 Hence, as earlier indicated, I will now proceed to discuss albeit briefly these various

3 For example in Nigeria, the common law remedies are relied upon to enforce any alleged breach of the indigenous peoples water use rights: See Akanle O., "A Legal Perspective on Water Resources and Environmental Development Policy in Nigeria" (1984) 12 Nigerian Law Journal 1.
5 Per Lord Macnaghten in John Young & Co. v. Bankier Distillery Co. [1893] AC 691.
6 See s. 36 Summary Offences Act Ch.No.264 Revised Laws of Papua New Guinea.
7 See s.58(2) Water Resources Act Ch.No.205 Revised Laws of Papua New Guinea.
8 See s.58 Public Health (Sanitation and General Regulation) Chapter No.226 Revised Laws of Papua New Guinea.
9 See at p. 146 supra.
10 Eg. Jones v. Llanrwst UDC [1911] 1 Ch.393.
11 (1868) LR 3 HL 330.
common law basis upon which civil action can be maintained to preserve and enforce any breaches of customary water rights. The next chapter, Chapter 13 concentrates on the now abandoned law suit by the customary water rights holders and users of the Ok Tedi and Fly River systems against the Ok Tedi Gold and Copper Mine and its owners where a civil law suit mainly based at these common law grounds was attempted. Hence although relevant, that case will not be considered in here.

B. Private Nuisance

The common law distinguishes the tort of nuisance into public and private. They both share similar characteristics to the point that the main difference lies in the fact that public nuisance "is really a crime involving interference with rights enjoyed by citizens generally"12 and therefore redress is generally obtainable by a public official such as the Attorney General or through relator proceedings (ie., private person(s) proceeding only with the consent of the Attorney-General).13 The distinction between public and private nuisance is well articulated by the authors of an American text as:

"A public nuisance is one which affects an indefinite number of persons, or all the residents of a particular locality, or all people coming within the extent of its range or operation, although the extent of the annoyance or damage inflicted upon individuals may be unequal. A private nuisance was originally defined as anything done to the hurt or annoyance of the lands, tenements or hereditament of another. As distinguished from public nuisance, it include any wrongful act which destroys or deteriorates the property of an individual or of a few persons or interferes with their lawful use of enjoyment thereof, or any act which unlawfully hinders them in the enjoyment of a common or public rights and causes them a special injury different than that sustained by the general public. Therefore, although the ground of distinction between public and private nuisance is still the injury to the community at large or, on the

13 See Gouriet v. Union of Post Office Workers [1978] AC 435 (HL) esp. Lord Wilberforce at p.477 that:
"A relator action - a type of action which has existed from the earliest times - is one which the Attorney-General, on the relation of individuals ... brings an action to assert a public right."
other hand, to a single individual, it is evident that the same thing or act may constitute a public nuisance and at the same time a private nuisance.”

Nuisance generally then is a tort in respect of the invasion of a person’s or a group of persons’ proprietary or other interest in land such as riparian rights or customary water rights. Particularly in relation to private nuisance, it is clear that the matter complained of must affect the property or the proprietary interest of the particular individual or an identifiable group of individuals. Although in general usage nuisance is referred to as some form of unlawful interference with a person’s use or enjoyment of his property or interest in property, for an action in private nuisance to be sustained:

“... there must be a substantial degree of interference with the comfort and convenience of the occupier who complains of private nuisance, or with some other aspect of the use or enjoyment of his land. The interference must be so substantial as to cause damage to him ... Dealing with the subject of interference, [Winfield on Tort (2nd ed.), p.482] says: 'The forms of this are innumerable. Noise, smells, pollution of air or water, are the most usual instances, but there are many others. The two main heads are injury to property and interference with personal comfort ... Where the interference is with personal comfort, it is not necessary in order to establish a nuisance that any injury to health should be shown. It is enough that there is a material interference with the physical comfort of human existence ...'”

Pertinently, Professor Harry Street also observes:

“A person, then, may be said to have committed the tort of private nuisance when he is held to be responsible for an act indirectly causing physical injury

16 Note that: "The law of nuisance undoubtedly is elastic, as was stated by Lord Halsbury in the case of Colls v. Home & Colonial Stores Ltd [1904] AC 179 at 185. He said: 'What may be called the uncertainty of the test may also be described as its elasticity. A dweller in towns cannot expect to have as pure air, as free from smoke, smell, and noise as if he lived in the country, and distant from other dwellings, and yet an excess of smoke, smell, and noise may give a cause of action, but in each of such cases it becomes a question of degree, and the question is in each case whether it amounts to a nuisance which will give a right of action'. This is a question of fact.”: per Lord Loreburn LC in Polsue & Alfieri Ltd v. Rushmer [1907] AC 211.
17 Cunard v. Antifire Ltd [1933] 1 KB 551 per Talbot J at p.557. For a concise history of the development of private nuisance, see Lord Wright's decision in Sedleigh-Denfield v. O'Callaghan [1940] 1 AC 880 at pp.901-911.
to land or substantially interfering with the use or enjoyment of land or of an
interest in land, where in the light of all the surrounding circumstances, this
injury or interference is held to be unreasonable."19

The following cases (three at the English common law, two at the American common
law and a Papua New Guinean case (the only case so far decided by the PNG courts)) which
specifically deal with attempts to preserve and/or enforce rights associated with water use
or riparian land are cited below to illustrate the dynamics involved in maintaining an action
in nuisance (private nuisance).

First, the English cases are: **Pride of Derby and Derbyshire Angling Association Ltd &
Another v. British Celanese Ltd & Others,**20 **Nicholls v. Ely Beet Sugar Factory Ltd**21 and
**Foster v. Urban District Council of Warblington.**22

In **Pride of Derby and Derbyshire Angling Association Ltd**23 the plaintiffs were the
owners of fishery in the Rivers Trent and Derwent and the second plaintiff was the riparian
owner of a considerable stretch of both rivers. In the action, the plaintiffs claimed an
injunction to restrain the pollution of the rivers and damages. There were three effective
defendants to the action. It was alleged that the first defendant, a commercial company
causd injury by pouring injurious effluent into the River Derwent and by returning water
to the river at so high a temperature as to be injurious to fish; the second defendants, the
Derby corporation, were polluting the rivers by pumping from their sewerage works
insufficiently treated sewerage into Derwent; and that the third defendants, the British
Electricity Authority, polluted it by discharging heated effluent.

The plaintiffs based their action on nuisance; negligence was not alleged. The first
defendants agreed to submit to an injunction. Harman J. found that the plaintiffs had
established a good cause of action against the second and third defendants and granted an
injunction restraining them from further discharging effluent into the River Derwent so as
to generally alter the quality of the water of the river to the injury of the plaintiffs or so as
to interfere with the plaintiffs rights of fishery. Upon Appeal, the appeal was disallowed in
whole with slight variation so to the scope of the order in regards to British Electricity
Authority only.

18 Per Sholl J in **Munro v. Southern Dairies Ltd** [1955] VLR 322 (Victorian SC) as cited in supra n.12
p.744.
20 [1953] 1 Ch.149.
21 [1936] 1 Ch.343.
22 [1906] 1 KB 648.
23 Supra n.20.
In Nicholls v. Ely Beet Sugar Factory Ltd, the plaintiff was the owner of two several and exclusive fisheries in the River Ouse below Ely. The defendants carried on the business of beet sugar manufacturers at a factory abutting on to the Ouse some miles above the plaintiff's fisheries. The plaintiff alleged that in the course of the defendants' manufacturing operations, and in particular from September 1933 to January 1934, following the beet harvest, large quantities of refuse and effluent were discharged from the factory into the river, and by reason of that he had suffered damage and his fisheries had been prejudicially affected. He claimed an injunction accordingly and damages. At the hearing evidence was also given as to the injury to the fisheries between September 1934 and January 1935.

Clauson J. at the trial held that: (1) the plaintiff had failed to establish that he had suffered any pecuniary damage and that that was the gist of all the action; and (2) that the plaintiff had failed to show that the injury to the fisheries was caused by the effluent from the defendants' factory.

On Appeal, it was held: (1) reversing Clauson J. on the first point, that disturbance of a several fishery is an invasion of a legal right, and in such a case it is not necessary to prove pecuniary loss, but the injury to the legal right carries with it the right to damages, and (2) affirming Clauson J., that the plaintiff had failed to show that the injury to his fisheries had been caused by the acts of the defendants.

It should be mentioned that, had the plaintiff shown that the injury to his fisheries had been caused by the acts of the defendants, only then would he have been entitled to his claim.

In Foster v. Urban District Council of Warblington, the defendants, an urban district council discharged sewage into the sea near the oyster ponds owned by the plaintiff. As a result, caused a nuisance to the plaintiff's oyster ponds through pollution to the same to an extent which rendered them unfit for use. The plaintiff then brought an action against the defendants in respect of the nuisance caused, claiming damages and an injunction to restrain the defendants from a repetition of such nuisance. The Court held that, "irrespective of the question of title to the soil or to a several fishery, the plaintiff, as occupier of the oyster ponds, was entitled to maintain an action for trespass to the same by wrongdoers; that the defendants, not having any right to discharge sewerage into the sea so

24 Supra n.21.
25 Supra n.22.
as to cause a nuisance, and having by their acts of commission caused such a discharge of
sewerage, were wrong-doers; and therefore, that the action was maintainable."

Secondly, the two American cases of considerable relevance are Hariss v. Brooks and Pruitt v. Allied Chemical Corporation.

In the Harris v. Brooks Case, the appellant was a lessee of riparian land owners and conducted a commercial boating and fishing enterprise. In this business he rented cabins, sold fish bait and equipment and rented boats to members of the general public who desired to use the lake for fishing and other recreational purposes. He (the appellants) and his lessors sued to enjoin the respondents (appellees) from pumping water from the lake to irrigate a rice crop, alleging that, as of that date, appellees had reduced the water level of the lake to such an extent as to make the lake unsuitable "for fishing, recreation, or other lawful purposes." The defendant/appellees, were lessees of one Ector Johnson who owned a large tract of land adjacent to the lake, including three-fourths of the lake bed.

For a number of years appellees had intermittently raised rice on Johnson's land and had each year (including 1954) irrigated the rice with water pumped from the lake. The appellants began operating his business about the 1st of April 1954 and fishing boat rentals were satisfactory from that time until about July 1st or 4th when, he says, the fish quit biting and his income from that source and boat rentals were reduced to practically nothing.

The court recognised and applied the riparian rights ownership doctrine. Ward J. asked: "Had appellees on July 10 1954, by the continued use of water from Horseshore Lake, destroyed appellants' right to fish and conduct the boating enterprise? If so, the injunction should be granted." His honour then accordingly granted the injunction as the appellees' activities destroyed the appellants' right to fish, etc ... reversing the decision of the trial court.

And in Pruitt v. Allied Chemical Corporation, a suit seeking damages against a chemical manufacturer for injuries suffered as a result of the pollution of the James River and Chesapeake Bay with Vepone, the Court held that commercial fishermen, lessors of oysterbeds, charter boat owners, tackle and bait shop owners, and marina owners, who suffered loss of sales of goods and services to sports fishermen as a result of the defendants'

26 (Supreme Court of Arkansas, 1955), 255 ARK. 436, 283 S.W. 2d 129 (this case is reproduced in Weinberg P., Environmental Law: Cases and Materials Associated Faculty Press, Port Washington, N.Y., 1985 p.173).
28 Supra n.26.
29 Supra n.27.
tortious behaviour, had a cause of action against the defendant under nuisance. The Court however, held that seafood wholesalers, retailers, distributors, processors, restaurant owners, and their employees, did not have a cause of action under nuisance against the defendant to recover their economic losses caused by the defendants pollution of the river and bay.

Finally, the only Papua New Guinean case of relevance, not for the ratio decidendi of the case but rather for the flawed reasoning and the fact that the judge confused the cause of action in private nuisance and the rule in Rylands v. Fletcher,30 is the case of Pen Rumints v. The State and the Western Highlands Provincial Government.31 This case involved an action by a customary riparian land owner (at the junction of two rivers) in private nuisance at common law against the defendants for the loss of use and enjoyment of his riparian customary land. Pertinent facts of the case are as follows. The plaintiff was a customary owner of a land at the confluence of the Poli and Gumanch rivers. He had been farming the land for many years with coffee, banana trees and subsistence agriculture. The defendants by their officers and Rui Plantation workers did drainage work upstream on the Poli river and that increased the flow of the river (Poli) and washed down sand and soil which silted near the confluence of the Poli and Gumanch rivers where the plaintiff's land was. The increased flow of the Poli also increased the flow of the Gumanch and that caused severe erosion to the plaintiff's land. After a while much of the plaintiff's land was also flooded and became waterlogged and/or eroded away. Consequently the plaintiff lost all his coffee and banana trees and the use of much of his land.

On the plaintiff's complaint to the relevant authorities, the relevant district officers and agricultural field officers conducted investigations into the plaintiff's claims and found his claims of the loss suffered to be correct and recommended to the Western Highlands Provincial Government (the principal defendant) for the Plaintiff to be compensated. The provincial government did not oblige. Subsequently the plaintiff sued the defendants claiming damages on the basis of private nuisance at common law.

In coming to determine liability, Woods J. paused: "So is this nuisance actionable by being unreasonable and, further, who is responsible for this nuisance?"32 His Honour's own response was:

30 Supra n.11.
31 [1993] PNGLR 94.
32 Ibid at p.96.
"To constitute a legal nuisance, the annoyance or discomfort must be substantial and unreasonable.

Life in organised society and especially in populous communities involves an unavoidable clash of individual interests. Practically all human activities, unless carried on in a wilderness, interfere to some extent with others or involve some risk of interference, and these interferences range from trifling annoyances to serious harms. It is an obvious truth that each individual in a community must put up with a certain amount of risk in order that all may get on together. The very existence of organised society depends on the principle 'give and take, live and let live' so that the law of torts does not attempt to impose liability or shift the loss in every case where one person's conduct has some detrimental effect on another. Liability is imposed only in those cases where the harm or risk to one is greater than he ought to be required to bear under the circumstances'. See the Restatement of the Law of Torts.

The paramount problem in the law of nuisance is, therefore, to strike a tolerable balance between conflicting claims of neighbours, each invoking the privilege to exploit the resources and enjoy the amenities of his property without undue subordination to the reciprocal interest of others. Legal intervention is warranted only when an excessive use of property causes inconvenience beyond what other occupiers in the vicinity can be expected to bear, having regard to the prevailing standard of comfort of the time and place. Here we are dealing with customary land at the junction of two rivers.

The law has always recognised that, in the case of water coming onto the lower land from land higher up, consideration must be given to what is the normal flow and normal expectations. A flood of water from higher up, if it is not created by the positive intervention of people living higher up, cannot lead to any liability."

It is submitted with due respect that his Honour confused himself from this point onward with what is actionable private nuisance (as he himself earlier states) and the rule in Rylands v. Fletcher when he relied on Halsbury's that: "When water escapes or overflows from land, the owner of that land is not liable for the consequences, if this happens in the ordinary use of land without any wilful act or negligence on his part."
The Court then decided against the plaintiff on the basis that:

"The water was natural, it was always on or coming onto the land by the work of nature and the State was merely assisting its flow by digging better drains and ensuring the free flow of the river. This is where the water naturally accumulating is allowed to flow freely, in its natural state it would eventually flow down the rivers. There is nothing artificial or unnatural about the draining of a swamp or repairing the banks of a river to ensure a safer flow. People in the Highlands are always digging drains or "barrats" to drain their garden land and this must always have some effect on the flow down stream. So why should this drain work be an exception and actionable? Any damage done may just be one of the vicissitudes of life which people face who have land on the banks of a river ..."36

Perhaps even more compelling reasons why it is strongly asserted, but with all due respect, that the basis of Woods J's decision in the Pen Rumints case is flawed is that the decision is based on dubious case authorities which have been questioned and not followed in other common law jurisdictions, particularly in Australia. Such cases which his Honour relied upon to arrive at his decision are the nineteenth century Privy Council opinion in Gibbons v. Lenfestey37 and the Victorian Supreme Court decision of 1902 in Vinnicombe v. MacGregor38 which are actually based on the (Roman) civil law where it is stated in the Digest Book XXXIX, Title III - De aqua et aquae pluviae arcendae, that being to the effect that "the lower landholder is under an obligation to receive water percolating in the natural course of events from higher lands adjoining."39 However, even the Privy Council in Gibbons v. Lenfestey did place some qualifications to this rule, thus: "The right, however, of superior proprietor is not quite absolute. The limits cannot be defined by definition, but each case must depend on its own circumstances. It would not, for instance,

36 Supra n.31 at p.98. I have criticised this decision on the basis that "the circumstances of the case required and equity demanded that the substantial loss of the plaintiff be compensated": See Kalinoe L., "Water Resource Management in Papua New Guinea: Law, Policy and Practice" (1994) 22 Mel J 23 at p.36.
37 (1915) 84 LJPC 158 on appeal from the Channel Islands where the elements of Roman Law not shared in Australia, let alone, Papua New Guinea are retained.
38 (1902) 28 VLR 144.
be within his right to introduce water which was foreign to the land - for example, by procuring a pipe supply or draining another watershed."40

Nevertheless, the High Court of Australia questioned the correctness of the application of this civil law rule in Australia in Nelson v. Walker41 (1910) and some fifty two years later in Gartner v. Kidman42 (1962) ruled that this civil law rule was not part of the common law of Australia. In fact the court took the opportunity in the Gartner v. Kidman case to expressly reject the application of the Privy Council decision in Gibbons v. Lenfestey43 in Australia. Ironically, in one of the other cases cited by Woods J. in the Pen Rumints case, Bell v. Pitt (1956) (Tasmanian Supreme Court), Burbury C.J. expressly decided that the civil law rule as expounded by the Privy Council in Gibbons v. Lenfestey is not part of the law in Tasmania.44

It is perhaps proper to argue that since the common law of England as it applies in Papua New Guinea is greatly influenced by the Australian jurisprudence for obvious historical reasons, Woods J's judgement in Pen Rumints v. The State and the Western Highlands Provincial Government45 should have reflected the position in Australia. This argument is strengthened when one realised that the Papua New Guinea common law has no element of Roman Law and therefore, such rules based on the civil law should not be readily adopted into the Papua New Guinea common law. Yet another significant reason for this view is that when Gibbons v. Lenfestey (supra) was rejected by the High Court of Australia in Gartner v. Kidman (supra) in 1962, Papua New Guinea, particularly Papua was a colony of Australia and therefore the Australian High Court decision should prevail more so in Papua and to some extent in New Guinea.

Despite the above, I mention the following for the records in fairness to Justice Woods in the Pen Rumints case. The rule that his Honour would have properly relied upon if assisted by counsel is that known as the "common enemy" rule where the water is treated as a sort of common enemy against which each person is entitled to defend oneself.46 This

40 Supra n.37 at p.160.
41 (1910) 10 CLR 535.
45 Supra n.31.
rule is very similar to the civil law rule as seen earlier. The "common enemy" is well
explained by Derham in these terms:47

"Under this rule the lower landholder cannot complain that his higher
neighbour permits surface water to flow across the common boundary. The
will not aid him if his neighbour is using his higher land in his best interests
even if in doing so he concentrates the surface water so that it flows across the
boundary in a way other than that which the natural condition of the land
would have produced. No doubt if the higher land holder so concentrated his
water as to damage his neighbour, not in the course of making the best use of
the higher land, but for some other purpose or for the purpose of injuring his
lower neighbour, the law would afford the lower landholder a remedy in
nuisance."48

Derham further explains that:

"The situation under the "common enemy" rule would be that the higher
landholder could get rid of his own surface water in the ordinary course of his
agricultural activities knowing that he was free from any liability for damage
which that water might cause to his neighbour. At the same time he would
know that if such surface water was likely to damage his lower neighbour's
land, or prevent his lower neighbour's activities from being carried on, his
neighbour might take steps to protect himself. Such steps might well be
damaging to the higher landholder's land or agricultural interests."49

C. Negligence

Where a riparian customary land owners suffer injury from pollution of rivers and other
watercourses directly resulting from negligent acts or omissions of another person, that may
give rise to a civil injunction.50 It is important to note that "fault" is a necessary element of
the law of negligence at common law and therefore "to be liable in negligence, it must be

47 Derham supra n.39 at p.876.
48 For example, see Hollywood Silver Fox Farm Ltd v. Emmett [1936] 2 K.B. 468.
49 Derham supra n.39 at p.377. It however does not follow that the lower landholder will be entitled
to an injunction against the upper landholder to prevent such flows: See Bell v. Pitt [1956] Tas SR
161 per Burbury CJ.
50 Generally for a lucid account of the law on negligence, see Felming J., The Law of Torts (Sixth ed.)
The Law Book Co. Ltd (1983) Chapters 6,7 and 8 at pp.97-167. Note that the text is now in the
shown that one party owned a duty of care to another and that the duty was deliberately or
carelessly broken, thereby causing injury."\textsuperscript{51}

Bates usefully and pertinently offer us the reminder that:

"With respect to the action in negligence, a duty of care situation with regard
to land would also arise principally in favour of those with proprietary interest
to protect. Negligence actions are more suited to cases of personal injury
arising on land than to interference with the land itself."\textsuperscript{52}

In the context of customary water rights, this of course means that interference with
those customary water rights per se (as is the case in private nuisance) is not sufficient but
that as a result of such interference, the holders of these customary water rights must suffer
damages. Damages in this context then may include either personal injury from the use of
the polluted water or economic loss arising from the loss of the use of water resources such
as fish, crocodiles, crayfish, etc ... There is also a possibility that a statutory authority
which fails to warn customary riparian owners of dangerously high level of chemicals, etc
... in the water flowing through their river or other watercourse, may be liable in
negligence.\textsuperscript{53}

A caution is however offered that the need to adduce proper and good quality technical
evidence to establish negligence and the further requirement of causation (ie., the
negligence of the defendants must be responsible for the damage suffered by the plaintiff)
usually proves to be difficult and actions can be easily lost. Actually, it would be quite air
to observe that this difficulty is reflected in this rather complicated area of law. Akanle,
speaking of the situation in Nigeria, also concedes the difficulty when he observes:

"It is true that the tort of negligence can be resorted to by an aggrieved person
to seek remedies for the pollution of water. However, the use of negligence as
an effective remedy against water pollution is subject to some limitations. For
instance, its application may be restricted to such hazardous operations as
petroleum and mining industry. In the domestic and agricultural spheres, it is
doubtful if negligence can be easily proved. Furthermore, though there is
generally to be inferred a duty of care owed to the plaintiff by the defendant,
the determination of what may amount to a breach of that duty may pose some

\textsuperscript{51} Bates G.M., \textit{Environmental Law in Australia} (3rd ed.) Butterworths Australia (1992) at p.44. Note
that this learning text is in its 4th edition (1994).
\textsuperscript{52} Ibid.
\textsuperscript{53} The analogy is drawn from a 1987 English case cited by Bates: See \textit{Scott-Whitehead v. National
problem especially in relation to those hazardous operations such as mining and manufacturing operations. Bearing in mind the technical and sophisticated nature of the defendant's operation, he is more likely to be judged by the prevalent practice in the field. Since the burden of proof is on the plaintiff, it is hardly feasible that he will be able to establish a breach of this standard of care in view of the limited technical knowledge available in the country ... The little that may be available, circulates within the industry, and surely such knowledge will always be used to the advantage of the industry."

The above observations made by Akanle are of pertinence and of equal relevance to the situation in Papua New Guinea.

D. Trespass

Generally, trespass involves a "wrongful direct interference with another person or with his possession of land or goods." In the modern common law on trespass, actionable trespass usually involves a direct intentional wrong or invasion regardless of whether the invasion results in damage or not. In other words, trespass "is actionable per se, ie. the act of trespass is itself a tort and it is not necessary to prove that it has caused actual damage." Fleming mentions that to be "actionable as trespass, the defendant's conduct must have consisted of a voluntary and affirmative act" and further that an act of trespass "may be committed not only by entry in person, but equally by propelling an object or a third person onto the plaintiff's land." Where an object is dumped on the plaintiff's land and not removed, "not only the intrusion but also failure to remove it constitute an actionable wrong. There is a 'continuing trespass' so long as the object remains ..." Whilst nuisance involves an indirect interference with the plaintiff's use and enjoyment of his or her land, trespass upon (riparian) land involves a "direct assault upon the land, for example, by way of some polluting deposit placed directly on it, or by way of a discharge of sewage or direct spraying with toxic chemicals."
Of specific relevance to protection of proprietary rights associated with riparian land, Bates mentions:

"... the law of trespass has occasionally been through to apply to invasions of noxious matter coming to the plaintiff's land via the natural flow of a river. In *Jones v. Llanwrst Urban Council* [1911] 1 Ch.393, matter deposited on the plaintiff's land from the defendant's sewerage works via the natural flow of a river was held to be a trespass."61

This statement can equally be adopted and applied to acts of trespass caused on riparian customary land by the majority of Papua New Guineans under the customary land tenure.

### E. The Rule in *Rylands v. Fletcher*

The rule in *Rylands v. Fletcher* is as stipulated by Lord Blackburn in that case as:

"We think that the rule of law is, that the person who for his own purpose brings on his lands and collects and keeps there anything likely to do mischief if it escapes, must keep it at his peril, and if he does not do so, is prima facie answerable for all the damage which is the natural consequence of its escape. He can excuse himself by showing that the escape was owing to the plaintiffs' default; or perhaps that the escape was the consequence of vis major, or the act of God ... The general rule as above stated seems on principle just ... and it seems but reasonable and just that the neighbour, who has brought something onto his own property which was naturally there, harmless to others so long as it is confined to his own property, but which he knows to be mischievous if it gets on his neighbour's, should be obliged to make good the damage which ensues if he does not succeed in confining it to his own property. But for his act in bringing it there no mischief could have accrued, and it seems but just that he should at his peril keep it there so that no mischief may accrue, or answer for the natural and anticipated consequence."62

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61 Supra n.51 p.37.
62 Supra n.11. The brief facts of this celebrated leading case are that the defendants through independent contractors built a reservoir on their land largely to supply water to their factories. Owing to some degree of negligence on the part of the contractors and unknown to the defendants, disused shafts remained upon the site and these shafts connected with the plaintiff's mine beneath the reservoir. These shafts were not properly blocked up. When the reservoir was filled, water escaped through the shafts and flooded the plaintiff's coal mine.
The doctrine in *Rylands v. Fletcher* establishes a modern doctrine of strict liability for the escape of dangerous substances such as toxic chemicals or sewage which the defendant has brought onto his land and keep.\(^{63}\) At the risk of overstatement, it is nevertheless imperative to note that a case against a defendant under the *Rylands v. Fletcher* rule can only be made out if in bringing the thing or substance onto his land, the defendant was making a non-natural use of his land;\(^{64}\) and that the escape occurred thereby inflicting the damage complained of.\(^{65}\)

In conclusion, I am compelled to make reference to a very useful summary of the rule in *Rylands v. Fletcher* offered by Farrier:

“Under the rule in *Rylands v. Fletcher* (1860) LR 3 HL 330, landowners are under a strict duty to control potentially dangerous substances kept on their land, where this amounts to a non-natural land use. Any damage to neighbouring property which occurs if the substance escapes may be actionable under this principle, even though all precautions may have been taken to avoid it happening. Thus, escapes of sewerage or dammed waters, for example, may amount to a breach of this common law rule ....”\(^{66}\)

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\(^{63}\) Generally see: Fleming supra n.50 Chapter 15 at pp.306-319 and *Street on Torts* supra n.19 at Chapter 14 at pp.259-273. For the application of the *Rylands v. Fletcher* rule in India to combat water pollution, see Nair M.K., "Legal Control of Water Pollution", Leelakrishnan ed., *Law and Environment*, University of Cochin, India (1984) 158, esp. at 159-163 and for that in Nigeria, see supra n.3 at pp.15-16.

\(^{64}\) On the meaning of "non-natural use", see: *Richards v. Lothian* [1913] A.C. 263 where the Privy Council decided at p.280 that: "It must be some special use bringing with it increased danger to others, and must not merely be the ordinary use of the land or such a case as is proper for the general benefit of the community." See also Newark, "Non-Natural User and *Rylands v. Fletcher*" (1961) 24 *Modern Law Review* 557. For recent developments (which are not binding on the common law in Papua New Guinea because of the cut-off date of 16 September 1975 under the Constitution), see *Cambridge Water Co. v. Eastern Counties Leather plc* [1994] 1 All ER 62 (HL) where the reasonable foreseeability of damages was added to the rule in *Rylands v. Fletcher* by Geof LJ (Geof LJ was largely influenced by Newark's article as cited above). For a useful commentary of the Cambridge Water Co. decision, see Bowal P. and Koroluk N., "Closing the Floodgates: Environmental Implications of Revising *Rylands v. Fletcher*" (1994) 4(3) *Journal of Environmental Law & Practice* 310.

\(^{65}\) "Escape" meaning that the dangerous substance complained of must enter another party's property but not within the property where it is kept: See *Read v. J. Lyons & Co.* [1947] A.C. 156, [1946] 2 All ER 471.

F. Conclusion

The above stated common law principles are available to riparian customary landholders (and others alike such as riparian lease holders) for the protection of their proprietary rights and interests emanating from their ownership of riparian customary land. At this particular point in time in Papua New Guinea, the proprietary rights and interests of many indigenous people who live a subsistence way of life by depending on their customary (riparian) land and rivers and other watercourses are increasingly threatened by natural resource developers, particularly in the forestry, mining and petroleum, and large scale agro-forestry projects. Despite that, the Papua New Guinea legislature has not as yet enacted specific legislation to comprehensively deal with the infringement of customary water rights and customary riparian land (although the Mining Act 1992 and the Petroleum Act Chapter 198 does make a limited attempt). In view of that, the common law principles as presented albeit briefly above will no doubt become useful to pursue civil redress for any infringement of customary water rights.
Chapter 16

The Implications Of The Ok-Tedi - Fly River Land Owners' Case For The Protection And Enforcement Of Customary Water Rights

A. Introduction

The recently abandoned (AUD$) 4 billion dollars lawsuit by principal plaintiffs Alex Maun and Rex Dagi representing some 7,500 or so village people of the Ok Tedi River and Fly River systems\(^1\) of the Western Province of Papua New Guinea (PNG) against the operators of the Ok Tedi Gold/Copper Mine (OTML), Broken Hill Proprietary Limited (BHP) in the Victorian Supreme Court (Australia) and the PNG National Court attracted widespread public interest and media attention both in PNG and Australia. The issues and awareness generated by the lawsuit are arguably not restricted to issues of legal consequence and significance but also raise those of wider moral, ethical and political questions of acceptable standard of behaviour and conduct of multinational corporations doing business in developing countries. In here however I only consider the implications of the case for the enforcement of or protection of customary water rights by first presenting a brief background to the lawsuit itself and then considering the grounds upon which the lawsuit was based to offer some enlightenment for the future.

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\(^1\) The Ok Tedi River flows down from Mount Fubilan. Mt Fubilan is the mountain upon which the ore body is mined. Flowing southward, the Ok Tedi River meets the Fly River approximately 200 kilometers downstream. The Fly river then slowly meanders a further 800 km emptying into the Gulf of Papua. See Sakulas H. and Tjamei L., Ecological Damage Caused by the Discharge from the Ok Tedi Copper and Gold Mine Papua New Guinea, Case Document on the Ok Tedi Mine for the International Water Tribunal, Wau Ecology Institute, Wau PNG, November 1991; Rosenbaum H. and Krockenberger M., "Ok Tedi: Undermining the Future" (1994) 2(1) Taim Lain 5 and Kirsch S. (1997) "Indigenous Response to Environmental Impact Along the Ok Tedi" Toft S. ed, Compensation For Resource Development in Papua New Guinea Law Reform Commission of Papua New Guinea Monograph No. 6, Port Moresby 1997 143.
B. Background to the Lawsuit

The Ok Tedi Mining Limited (OTML) operates the Ok Tedi Copper Mine in the Western Province of Papua New Guinea (PNG). American transnational, Kennecott Copper Corporation, carried out the initial explorations in the late 1960s but withdrew from developing the mine in mid 1970s shortly before PNG gained independence from Australia in September 1975. Following the withdrawal of Kennecott, on the invitation of the PNG Government, BHP entered into agreement with the PNG Government in 1976 to develop the mine. BHP then took the lead in finding suitable partners to develop the mine. Then in 1981 amidst soaring gold prices, Ok Tedi Mining Ltd (OTML) was created as a truly transnational consortium with Australia's Broken Hill Proprietary Ltd (30%), American's Amoco Minerals Corporation (30%), a German industrial conglomerate (20%) and the PNG Government (20%) to operate the mine. OTML is operated by Broken Hill Proprietary Limited (BHP). In recent times, the ownership of OTML is being restructured to give BHP 52 percent, the PNG Government 30 percent and Metal Mining Corporation (MMC) 18 percent.

Gold production began in 1984 and ceased in 1989 but now only obtained as a by-product of copper smelting. Extraction of copper ore began in 1987 and is expected to continue until the end of the mine's life in 2008. In 1979, a feasibility study for the Ok Tedi project recommended that a permanent tailings dam should be built for the treatment or disposal of wastes (tailings, etc.) on the Ok Ma river and stable waste dump be constructed in the Ninga and Ok Gilor valleys adjacent to Mt Fubilan. Accordingly, construction work began at the Ok Ma dam site but major landslides in December 1983 and January 1984 caused the dam to collapse and the company abandoned the construction of a tailings retention dam. Since then OTML has argued that since the area was subject to

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3 See Recital G., Mining (Ok Tedi Restated Eighth Supplemental Agreement) Act 1995.

4 Work on infrastructure development began in 1981 and gold production began according to schedule on 19 May 1984: See Sakulas and Tjamei supra n.1 at p.11.

5 See Rosenbaum and Krockenberger supra n.1 at p.5.

6 Although natural disaster caused the collapse of the dam, improper engineering on the part of OTML (relating to non-consideration of the geological features of the site) played a major part in the collapse of the dam: See Townsend B., "Giving Away the River: The Environmental Issues in the Construction of the Mine, 1981-1984" in Pernetta J., ed., Potential Impacts of Mining on the Fly River, UNEP, Nairobi (1988) 113. In this regard, a commentator has also opined that: "... much as the collapse of the dam was the result of natural disaster, it was also
frequent landslides, high rainfall and seismic activity, the safe storage of tailings and other waste cannot be guaranteed and therefore the building of retention dam was too big a risk. Initially the PNG Government did not accept this argument. Nevertheless to allow gold production to commence in May 1984, the government gave approval to OTML allowing use of an interim tailings disposal scheme to operate whereby this involved the retention of the sand fraction at the Ok Ninga valley and "... the tailings (being) dumped directly into the river system without first being treated."7

In February 1986 Parliament passed the Mining (Ok Tedi Sixth Supplemental Agreement) Act 1986 where this legally bound the company to construct and operate a long-term copper mine. Initially however the other partners of OTML preferred to mine only the gold cap without a commitment to mine the copper ore until the world copper prices rose. This legislation (or Agreement) allowed for the suspension of the requirement for the construction of a permanent tailings disposal facility and stable waste dumps pending the outcome of a detailed, three year environmental study to be carried out by the company.8 Until then, the company was allowed to continue dumping tailings directly into the Fly River system. Commenting on this decision, a spokesperson for the Wingti Government said: "The government [did this] after giving much thought to the advantages and disadvantages of the project, [believing] at that time that the overall development advantage to the nation outweighed the environmental impact on the Fly River system as it was not considered permanent."9

After a successful vote of no confidence in the Wingti Government, there was a new government in 1989 with Rabbie Namaliu as Prime Minister. In mid 1989 there was partly the result of improper engineering on the part of the developers. Investigations revealed that the construction of the tailings dam was begun even before mapping of the geological features of the area on which it was to be situated ... This led to choice of the wrong site and the use of improper specifications for construction": Ongwamuhana K., "Mining and Environmental Protection in Papua New Guinea" (1991) EPLJ 133 at p.137.

7 The Ok Tedi gold and copper mine project is governed by a separate Act of Parliament, the Mining (Ok Tedi Agreement) Act 1976. This Act regulates all matters including the conduct of the environmental impact assessment (EIA) and all other environmental monitoring process by way of conducting and be made to the Agreement, etc., by enacting a Supplemental Agreement. The Ok Tedi project is exempted from the application of the Environmental Planning Act Ch.370 (see s.3(2)(b): the Times of Papua New Guinea, 17 May 1989, pp.17, 23.

8 Under this Sixth Supplemental Agreement, OTML accepted the obligation to conduct comprehensive environmental study on the impacts of the mine. Waste retention facilities were only then to be designed so as not to cause "unacceptable environmental damage." Based on these studies, in 1989, the Acceptable Particulate Level (APL) conditions became the only major monitoring tool. APL mainly measures the concentration of suspended sediment in the river system and on that basis determines the acceptable or non-acceptable environmental damage. In the case of OTML, the APL was set at any thing below 940mg per litre on average.
considerable public opinion and pressure on the new government to re-negotiate the Sixth Supplemental Agreement and force OTML to build a tailings dam and put immediate stop to the direct discharge of tailings into the Ok Tedi river. Hence in about June 1989, the new Minister for Environment and Conservation, Mr Jim Yer Waim, was understood to have undertaken a firm stand against pollution of the Ok Tedi River, Fly River and delta areas and was reported to have said: "unless OTML constructs tailings treatment facilities to limit or minimise environmental damage to acceptable levels, he will have no option but to advise Cabinet to close the mine."\(^{10}\) The Department of Environment and Conservation in support of their Minister released a statement that:

"The pollution of the river system and delta has been compounded as the mine moved from the gold to the copper phase and the amounts of mine tailing and waste rock discharged to the river increased two to three times."\(^{11}\)

And in spite of the above, the Namaliu Government in September 1989 decided not to force the company (OTML) to build a permanent tailings dam and "... opted for [the company] to dispose mine wastes direct into the river system and commit the government and the company to compensate the people living along the entire length of the Fly River."\(^{12}\) Minister Waim, after the decision was taken, said:

"Everybody (Ministers) were concerned with the effects on the Fly River and everybody was concerned with the welfare of the nation. We decided in favour of the people. It was [he claims!] the best decision any responsible government could take under the circumstances. In any thing there has got to be give and take. We risked our environment in favour of the people."\(^{13}\)

Bernard Narakobi, MP, (Minister for Justice) had this to say on the decision:

"After exhaustive briefings and careful questioning by Ministers, the Government has reached the view that the interests of all persons can be best served by allowing the mine to operate without the tailings dam."\(^{14}\)

Probably the best summation of the reasons behind the Government's decision is to be found in this statement:

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\(^10\) Ibid.
\(^11\) Supra n.9.
\(^12\) *Post Courier*, PNG, 24 September 1989, p.1.
\(^13\) Ibid.
\(^14\) *Post Courier*, PNG 16 October 1989.
“Because of political expedience, environmental experts say the government is foregoing the welfare and health of thousands of Western Province (Fly River) people and the environment of the nation to boost its financial capacity in a trying time.”  

Indeed, writing in 1991, Hyndman observes that:

“Understanding the national government decision was the pragmatic view that, with the Bougainville mine closed, it was essential to secure revenue from Ok Tedi in 1991. The decision 'in favour of the people' was one of political expediency that actually jeopardised the welfare and health of 40,000 Fly River people.”

Actually, the interim tailings disposal scheme was dropped in 1988. Since then, the mine has operated without any form of waste retention facilities.

The mine dumps about 80,000 tonnes of tailings every day into the Ok Tedi and Fly River systems. Non-governmental organisation (NGO) groups such as the Australian Conservation Foundation (ACF) and the German based Stamberg Institute have criticised the mine for polluting the 1,000 kilometre Ok Tedi and Fly River systems. Kyere and Kastel of the Stamberg Institute claim:

“The known effects on the environment so far have been very profound. Not only is the water in the two rivers, the lagoons and the Fly River delta under strain, but the sedimentary deposits also impose a burden on the river regions. Copper in solution and other heavy metals can make the water in both river toxic to fish and undrinkable for humans ... According to the mine administration, fish stock in the upper reaches of the Ok Tedi have already fallen by 50-80% after only a few years of operation.”

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17 Sakulas and Tjamei supra n.1 at p.12.
18 *(PNG)* *Post Courier*, 9 September 1992, at 1. According to the finding of the Stamberg Institute, the mine dumps up to a total of 150,000 tons of tailings per day: See infra n.13.
19 *Post Courier*, supra n.18.
20 Kyere and Castel, "Development and the Environment" (1991) 21(3) *Catalyst* (Special Issue).
David Hyndman, a respected anthropologist on the study of the Mountain Ok people who comprise the affected customary landowners, makes the following pertinent assessments (with the benefit of hindsight and) in my view with considerable authority and accuracy:

"Weak environmental protection plans coupled with a long series of ecological disasters starting in 1984 have endangered natural resources sustaining more than 40,000 indigenous peoples of the Ok Tedi and Fly River Basins, and the Ok Tedi project has been an ecological catastrophe ... Since the mid 1980s, pollution from suspended sediments and heavy metals has been 10,000 times greater than American Environmental Protection Agency standards and has threatened subsistence staples such as fish, crustaceans, turtles and crocodiles, and gardens and sago palms growing along the riverbanks and backswamps."22

Consequently, BHP, owners (52%) and operator of the mine, was sued on 5 May 1994 in the Victorian Supreme Court by some 7,500 villagers of the Miripiki Clan who live in the vicinity of the river systems. The villagers were claiming $2 billion compensation claim and $2 billion exemplary damages.23 The writ alleged that BHP Minerals Pty Ltd and the OTML had "negligently and in breach of the duties of care" discharged poisonous material into the Ok Tedi-Fly River systems and had destroyed the villagers' subsistence way of life. It also alleged that the PNG Government, a 30 percent share holder in OTML, had "failed, neglected and refused" to enforce environmental agreements and covenants. On 6 September 1994, more than 1,000 new writs were filed in the National Court in Port Moresby against BHP and the PNG Government.24 We will now consider in some detail the legal grounds upon which the lawsuit was instituted.

21 Ibid at 33.
C. Basis of the Lawsuit

According to the writs issued in the Victorian Supreme Court\(^\text{25}\) and the writ of summons issued in the National Court of Papua New Guinea,\(^\text{26}\) the lawsuit was based on trespass, nuisance (both private and public), negligence, breach of contract and strict liability as stated in the rule in *Rylands v. Fletcher*.\(^\text{27}\) The basis of breach of contract is not relevant for the purposes of this thesis and therefore will not be further pursued. In relation to all of the other bases, it will be recalled that the basic general principles at common law have been canvassed, albeit briefly, in the last chapter, Chapter 12. I will not revisit those here but will only make reference in dealing with the factual circumstances of the (now abandoned) Ok Tedi river water rights holders lawsuit.

The plaintiffs pleaded that they were proprietors of riparian land held under customary land tenure and were therefore entitled to the beneficial use of water and water resources from the Ok Tedi river and the floodplain adjacent to or in the vicinity of their riparian customary land.\(^\text{28}\) In the writ, the plaintiffs continued pleading that each of them:

\[\begin{align*}
(a) & \text{ lives on the said land;} \\
(b) & \text{ lives on the banks of the Ok Tedi adjacent to, or in the vicinity of, the land downstream from the Ok Tedi Copper Mine;} \\
(c) & \text{ lives on the floodplain downstream from the Ok Tedi Copper Mine;} \\
(d) & \text{ traditionally uses the water in its ordinary state from the Ok Tedi and floodplain for, inter alia, the following purposes:} \\
& \text{ (i) to fish for food for subsistence and commercial profit;} \\
& \text{ (ii) to supply drinking water;} \\
& \text{ (iii) to supply potable water for domestic purposes including water trees, shrubs, plants, grass and gardens;} \\
& \text{ (iv) for recreation;} \\
& \text{ (v) for irrigation of crops for subsistence and commercial profit;} \\
& \text{ (vi) for customary spiritual ceremonial purposes;} \\
& \text{ (vii) for hunting of crocodiles and other marine creatures for subsistence and commercial profit;} \\
\end{align*}\]

\(^{25}\) For example, see *Alex Maun and Others v. BHP and Ok Tedi Mining Limited* No.6862 of 1994, 11 July 1994.

\(^{26}\) For example, see *Gabia Gagarimabu v. Minister for Mining and Petroleum and the State*, WS No.305 of 1995, 2 May 1995.

\(^{27}\) (1868) L.R. 3 H.L. 330.

\(^{28}\) See supra n.25 at pp.1-3.
(viii) to replenish and augment top soils on the floodplain;
(ix) to supply drinking water for animals;
(x) to support their social, spiritual and cultural environment;
(xi) to supply the fundamentals of customary life; and
(xii) transport.”29

It will be recalled from the case studies on customary water use rights present in Part III of this thesis that the purposes for which the Ok Tedi river people apply their customary water rights as pleaded above are very similar, if not identical, to the uses to which customary water rights are applied in the other traditional communities of Papua New Guinea, some which have been presented in Part III of this thesis. It is quite apparent from the above that customary water rights which riparian communities claim in Papua New Guinea are nearly all pervasive and embracing of the total way of life which these people live. In other words, these communities not only rely on water for their domestic, agricultural and food gathering purposes but also those dealing with their social, cultural and spiritual purposes fundamental to customary way of life in these traditional societies.

In the writ, the plaintiffs continued on to plead that the defendants, BHP and OTML have since the mine commenced operation in 1984, continued to discharge intentionally or negligently effluent, refuse, tailings, waste products or other poisonous substances30 emanating from the defendant's operations at the mine into their river (Ok Tedi river) and floodplain and thereby polluted, disturbed or contaminated the waters of the Ok Tedi river and the floodplain. In this regard, the plaintiffs pleaded in the writ at clause 10 that:

“... since the conduct of the mining operations at the Ok Tedi Copper Mine commenced, the first Defendant and the second Defendant have known, or ought reasonably to have known or foreseen that if they discharged or passed the material, or caused the material to be discharged and passed, into the Ok Tedi:

(a) the waters of the Ok Tedi and the floodplain would become polluted, disturbed and/or contaminated with the material and poisonous substances;
(b) the waters of the Ok Tedi and the floodplain would become impure, unclean and noxious;

29 Supra n.25 at p.3.
30 These material consist of finely crushed rock containing copper and other minerals: supra n.25 p.4.
(c) the waters of the Ok Tedi and the floodplain would become detrimental to the health, safety and welfare of, and undrinkable, harmful and poisonous to the persons (including the Plaintiffs) who:-

(i) lived on the said land;
(ii) lived on the banks of the Ok Tedi adjacent to, or in the vicinity of, the land downstream from the Ok Tedi Copper Mine;
(iii) lived on the floodplain downstream from the Ok Tedi Copper Mine;
(iv) traditionally or otherwise used the water in its ordinary state from the Ok Tedi and the floodplain for, inter alia, the following purposes:
   A. to fish for food for subsistence and commercial profit;
   B. to supply drinking water for themselves;
   C. to supply portable water for other domestic purposes including watering trees, shrubs, plants, grass and gardens;
   D. for recreation;
   E. for irrigation of crops for subsistence and commercial profit;
   F. for customary spiritual ceremonial purposes;
   G. for hunting for crocodiles and other marine [rather aquatic] creatures for subsistence and commercial profit;
   H. to replenish and augment top soils on the floodplain;
   I. to supply drinking water for their animals;
   J. to support their social, spiritual and cultural environment;
   K. to supply the fundamentals of customary life; and
   L. transport.

and to the birds, animals, fish and plants upon which such persons traditionally or otherwise rely to sustain the fundamentals of their life, culture and religion or for commercial fishing operations.\textsuperscript{31}

Consequently, it was pleaded that the actions of the Defendants have unlawfully interfered with each of the Plaintiffs' use and enjoyment of their ownership, possession and occupation of their riparian customary land and their customary water use rights (as set out above) which inhere from their ownership, possession or occupation of the said land. Therefore, the Plaintiffs pleaded at paragraphs 13 and 14 of their writ that:

\textsuperscript{31} Supra n.25 pp.4-5.
"13. In the premises, [the Defendants] have committed, and been guilty of:
   (a) a private nuisance;
   (b) a public nuisance;
   (c) trespass,
   in respect of each of the Plaintiffs' rights and benefits attaching to each of
   the Plaintiffs' use and enjoyment of:
   (i) their possession and occupation of the said land;
   (ii) their ownership of the said land; and
   (iii) their customary rights [as set out above] in respect of the [use and
       enjoyment] of the Ok Tedi [river] and the floodplain.

14. In the premises, each of the Plaintiffs have suffered and will continue to
    suffer loss and damage."

Further or alternative to the torts of nuisance and trespass as pleaded above, the
Plaintiffs pleaded in the following terms to allege the tort of negligence. That the
Defendants "at all material times owed to each of the Plaintiffs:

"(a) a duty of care not to discharge or pass the material to be discharged or
    passed into the Ok Tedi [river];
(b) a duty of care not to pollute, disturb and/or contaminate the Ok Tedi, the
    floodplain, the land down river from the Ok Tedi Copper Mine and/or the
    said land with the material or poisonous substances;
(c) a duty of care not to cause the waters of the Ok Tedi and the floodplain to
    become impure, unclean and noxious;
(d) a duty of care not to dispose of the poisonous substances and other waste
    products from the Ok Tedi Copper Mine in a manner which interfered or
    disrupted the use of the Ok Tedi, the floodplain, the land down river from
    the Ok Tedi Copper Mine or the said land by each of the Plaintiffs;
(e) a duty of care not to cause the waters of the Ok Tedi and the floodplain to
    become detrimental to the health, safety and welfare of, or undrinkable,
    harmful or poisonous to each of the Plaintiffs or to the birds, animals, fish
    and plants upon which such persons traditionally or otherwise relied to
    sustain the fundamentals of their life, culture and religion or for commercial
    fishing operations;
(f) a duty of care not to interfere with or disrupt:-

32 Supra n.25 p.8.
(i) each of the Plaintiffs' possession, occupation, use and enjoyment of the said land;

(ii) each of the Plaintiffs' ownership of the said land; and

(iii) each of the Plaintiffs' customary rights [to the use of the Ok Tedi river and the floodplain]."33

The Defendants have negligently and in breach of that duty:

"(a) discharged and/or passed the material or caused the material to be discharged and/or passed into the Ok Tedi;

(b) polluted, disturbed and/or contaminated the Ok Tedi, the floodplain;

(c) caused the waters of the Ok Tedi and the floodplain to become impure, unclean and noxious;

(d) ...

(e) caused the waters of the Ok Tedi and the floodplain to become detrimental to the health, safety and welfare of, and harmful and poisonous to each of the Plaintiffs who traditionally or otherwise relied thereon to sustain the fundamentals of their life, culture and religion or for commercial fishing operations; ...."34

Consequently, the Plaintiffs have suffered and continue to suffer loss and damages.

Further or alternatively to the torts of nuisance, trespass and negligence as stated above, the Plaintiffs also relied on strict liability and pleaded that the Defendants by causing the discharge of the harmful and poisonous waste material from their copper mine to enter the Plaintiffs' riparian land and watercourses, were strictly liable for all harm, loss and damage suffered by each of the Plaintiffs by reason of the said discharge.35

The material presented immediately above on the grounds of the lawsuit by the riparian customary landowners of the Ok Tedi River against BHP (operators of the mine) and OTML as pleaded in their writ no doubt provides useful material as precedence for future action for the enforcement of customary water rights. Although the material is not binding legal precedent (since the case was eventually settled out of court), the value of this material as precedents for the future becomes apparent with realisation of the fact that this

33 Supra n.25 paragraph 15 p.10.
34 Supra n.25 paragraph 16 pp.10-11.
35 Supra n.25 paragraph 19 pp.11-12.
case was the first real attempt made in the (rather short) legal history of Papua New Guinea to enforce customary water rights through remedies available at common law.

D. Initial PNG Government Response to the Lawsuit and the Events Thereafter

At the time when the lawsuit was filed in 1994, the PNG Government was a 20% stakeholder in the copper mine through its shareholding in OTML, the second Defendant. It was therefore an interested party to the lawsuit. The then Wingti Government's initial response strategy was to introduce legislation with retrospective effect to:

1. limit the aggregate of claim for damages by the riparian customary landowners;
2. establish a compensation tribunal with exclusive power to deal with such claims "speedily and competently";
3. provide that resource developers either establish a fund or put up bond from which claims are then to be met; and
4. give the State power to sue developers for environmental or other damages for unlimited amounts of money.36

The then Prime Minister Wingti also added that his government would "seriously consider whether to abolish common law claims by landowners for compensation and instead give landowners a statutory basis."37

Following the Supreme Court ruling on 25 August 1994 that the snap resignation and purported re-election of the then Prime Minister Wingti on 23 September 1993 did not comply with s.142(3) of the Constitution and therefore a new Prime Minister had to be re-elected in the next sitting of Parliament, the Wingti Government was defeated. Consequently, the Wingti Government's proposed legislation did not live to see the light of day.

The new government of Sir Julius Chan with John Giheno as Minister for Mining and Petroleum brought a new approach and attitude to the issue. Giheno insisted that the government should pursue a compensation agreement with the Ok Tedi/Fly River landowners.38 The Chan Government then offered a compensation package of $113

37 Ibid.
million to the landowners and was hoping to win the landowner into an out of court settlement. At first the landowners did not accept the compensation package and continued to maintain their court actions both in the Victorian Supreme Court and the PNG National Court. However, later they accepted a total settlement package of $550 million about six months after the passage of the *Mining (Ok Tedi Restated Eighth Supplementation Agreement) Act* 1995 and the *Compensation (Prohibition of Foreign Legal Proceedings) Act* 1995.

The combined effects of these two statutes was to effectively outlaw all law suits by customary landowners, including the Plaintiffs in the Ok Tedi case, from claiming compensation for environmental damage, including pollution of watercourses, against mining and petroleum development projects. These statutes however do not prohibit compensation claims by other riparian customary landowners over pollution, etc. ... of their watercourses caused by other natural resource development projects, agricultural or agro-forestry development projects.

**E. Conclusion**

When the *Mining (Ok Tedi Restated Eighth Supplemental Agreement) Act* 1995 and the *Compensation (Prohibition of Foreign Legal Proceedings) Act* 1995 were enacted and came into effect, the Ok Tedi river customary landowners who filed an AUD$4 billion lawsuit against BHP and OTML were clearly intimidated and coerced into submission on 11 June 1996 and they dropped all legal actions in Papua New Guinea and Victoria.

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39 *The Daily Telegraph Mirror*, 19 April 1995 p.44.

40 In this regard note the following:

(a) under the *Mining (Ok Tedi Restated Eighth Supplemental Agreement) Act* 1995, section 5(5) provides that:

"Under the law of Papua New Guinea, no
(a) cause of action; or
(b) other right, existing
(c) in relation to an Existing Compensation Claim; or
(d) in relation to a Compensation Claim that is not an Existing Compensation Claim, which may form a basis for Compensation Proceedings.";

(b) under section 4 of the *Compensation (Prohibition of Foreign Legal Proceedings) Act* 1995, compensation proceedings in any foreign courts in relation to any mining and petroleum projects in Papua New Guinea is prohibited. Any person who contravenes this Act by pursuing compensation proceedings in a foreign court is guilty of an offence with a maximum penalty of a fine not exceeding K10,000.00 or imprisonment for a term not exceeding five years or both under s.5 of this Act.
(Australia)\textsuperscript{41} and accepted the compensation scheme under the Restated Eighth Supplemental Agreement. Nevertheless, under the terms of the settlement agreement, OTML and BHP have agreed to build a tailings treatment and disposal facility within two years (i.e., by 1998) and have also undertaken to dredge and/or excavate the Ok Tedi River where bulk of the fine material (tailings) have been deposited.\textsuperscript{42} BHP Minerals' Chief Executive and group Chairman elect, Mr John Ellis, is quoted during the announcement of the settlement agreement as saying that, the "challenge now is to reduce the environmental impact of the project and capture the opportunities for social and economic development."\textsuperscript{43} This statement, in my view, reflects some degree of admission on the part of BHP and OTML that they have in fact been responsible for environmental damage to the Ok Tedi River previously.

Nevertheless, some positive lessons have been learnt from the Ok Ted lawsuit.\textsuperscript{44} No doubt about that. For example, no one can deny the fact that the whole episode brought to the national and international front, issues which have previously been given scant regard both by the PNG Government and the mining companies including BHP and OTML. Particularly in PNG, this episode is an important precedent for the enforcement of customary water rights. Particularly so, this episode has undoubtedly increased awareness and seriously projected into calculation and hence into the "big picture" the plight of ordinary riparian customary landowners so that in future and in similar circumstances, such peoples' interests will then be seriously taken into account by all parties concerned.


\textsuperscript{42} Ibid.

\textsuperscript{43} Howarth and Pheasant supra n.41.

\textsuperscript{44} For example see: Callick R., "Ok Tedi Win for Villagers and Lesson for all Miners", \textit{Australian Financial Review}, 12 June 1996 p.31 and Hamau J., "Both sides learnt lessons from Ok Tedi lawsuit," \textit{The Independent}, 21 June 1996 p.9, but I object to his contention that the "lawsuit battle could be viewed more as a high powered battle between Australian lawyers over a piece of legislation in an Australian law." That is quite nonsensical. Without the involvement of Australian lawyers Slater & Gordon, the lawsuit would have even started and attracted the high level of attention and publicity it generated. Personally, I am grateful for Slater & Gordon for their involvement in taking up the battle for the ordinary Ok Tedi river people against the big Australian.
Chapter 17

Conclusion

Issues concerning the perceptions of the owners of land adjacent to rivers, lakes and other watercourses about their rights over water and water resources are becoming of ever increasing significance and importance in Papua New Guinea today and will no doubt continue to be so in the future. The Ok Tedi river landowners law suit against BHP and OTML prominently stands as testimony to this. Nonetheless, it is clear that this situation is largely attributable to factors such as population growth, diversification of uses and increasing mining and petroleum and forestry development activities which then directly create new pressures on water bodies and water resources.

Consequently, it is clearly imperative that we understand the customary regime and the perceptions of holders of customary water rights. This thesis has attempted to do exactly that mainly by first exploring and presenting the general and basic water law principles pertaining to indigenous water rights at common law in Part I by way of introduction; secondly by scrutinising the water law regime in Papua New Guinea, particularly as it may impact customary water rights in Part II; thirdly by presenting empirical field work data on the perception of customary water rights holders in Part III; and finally in Part IV, by ascertaining the nature in law of customary water rights and the mode of establishing and enforcing customary water rights available at Papua New Guinea law.

The *Water Resources Act* Ch.205 does not use the terminology "customary water rights" but rather the phrase "customary rights to the use of water" and defines that under s.2 as "rights to the use of water:--

(a) that are authorised by custom; and

(b) which are being availed of at the time in question or, in the normal course of land management would be availed in a customary manner within a reasonable period after that time."
By incorporating this definition, "customary water rights" can be broadly defined as the indigenous riparian peoples' right to have access to and utilise water and water resources for their daily sustenance and their total way of life as indigenous peoples and as accepted by custom pertaining in their local communities from time to time. Useful indicators of the incidents of customary water rights can be identified as:

- the right to draw water for domestic and all agricultural use;
- the right to use watercourses for transportation;
- the right to use the rivers, lakes and other types of watercourses for artisanal fishing;
- the right to utilise the watercourses for crocodile hunting;
- the right to erect fish traps and baskets to catch fish, shrimps, prawns, etc ... in the rivers, lakes and other watercourses;
- the right to attach and assert customary value and significance to rivers, lakes and other watercourses where such customary value may include genealogical, ceremonial and spiritual;
- to support their social, spiritual and cultural environment; and
- generally to supply the fundamentals of customary life in their societies.

Statute law such as the Customs Recognition Act Ch.19 and the Water Resources Act Ch.205 do specifically provide for the recognition and enforcement of customary water rights by such customary water right holders.

Ownership of riparian customary land by indigenous Papua New Guineans under customary land tenure is the dominant and primary bases of claiming customary water rights. Other lesser basis in order of seniority may include the fact of first discovery and use of the particular watercourse; the loss of an ancestor of a clan member when protecting and defending the particular watercourses from an enemy tribe attack; through long-term uninterrupted usage of a particular watercourse or parts of a particular watercourse; and by doing maintenance work on the watercourse. Strictly though, proprietary interest in watercourses are reserved to those who own riparian land. This therefore establishes that there is a difference between usufructuary rights and property rights in the customary legal order in Papua New Guinea where property rights to water resources and watercourses are held by the riparian land owning clan or clans only. Usufructuary rights are held by the other categories of water use rights holders.
Under s.5(2) of the Water Resources Act Ch.206, "customary rights to the use of water by the citizens resident in the area which those customary rights are exercised" are exempted from the regulatory framework of the Act. It is my view that this means that customary water rights are tacitly recognised and accommodated by this provision and therefore customary water rights can co-exist with any water use rights which may be conferred by the statutory licencing process. The situation however becomes tricky and to some extent dangerous when water use rights obtained under the statutory licencing process interfere with customary water use rights or vice versa. It is of course trite law that in the event of such conflict, statutorily obtained rights will prevail over customary water rights. The customary water rights holders however do not understand this. They are at a loss to comprehend the fact that if they own the land upon which the water flow, how then should people who don't own the riparian land have water use rights superior to theirs. This is when the question of ownership of watercourse (via ownership of riparian customary land) comes into play. This is when the indigenous riparian communities assert ownership claims to watercourses and argue since they "own" such watercourses, their rights are equally as important or if not, superior to those obtained by the licencing process.

In the field work conducted for this thesis (results of which are presented in Part III of this thesis), the following questions were put to elders in the villages.

"Does the clan, tribe or village assert ownership claims over a river, lake, etc ... or to parts of such rivers, lakes and watercourses?"

"Do these claims include ownership of a river, lake or watercourse bed?"

The answers to both questions in all instances was an emphatic "yes". Most of the elders I spoke with explained that since a river, lake or stream ran through their land, they owned those parts of the river, lake or stream. In the village of Iniok, Upper Sepik (see Chapter 8 of this thesis), an elder went to the extent of asking me whether the river (or part of the river) was hanging from thin air? When I replied "no", he explained that land holds the water and determines its course and direction of flow. That land is in turn owned by a clan or tribe and therefore by virtue of the ownership of riparian land, that clan or tribe owns the particular watercourse.

When these ownership claims at the customary legal order are considered in terms of the received common law, there are in deed some similarities. Common law recognises and accepts ownership rights to water use rights and water resources through the doctrine of
riparian rights. The riparian rights doctrine is premised on the same basis as customary water rights: the ownership of land abutting a watercourse.

It may be of some interest to note that the predecessors of the current legislation, *Water Resources Act* Ch.205, namely the *Water Resources Ordinance* (No.62 of) 1962 and the *Water Resources Act* (No.62) of 1967, vested some form of ownership rights together with the right to the use, flow and control of water in a watercourse in the State when those legislative instruments addressed ownership and resource use rights under a separate part of the heading of "OWNERSHIP OF WATER RESOURCES." Under the current legislation however, Section 5 does not speak in terms of ownership of water resources but rather in terms of "the right to the use, flow and control of water." By applying the normal rules of statutory interpretation in these circumstances, it necessarily follows that the intention of Parliament when it passed this current Act was to divest ownership rights from the State. Hence it is plausible to argue that such an action can legitimise any form of ownership rights to water and watercourses that may exist in the customary legal order. Hence by recognising and preserving customary water rights under s.5(2) of the *Water Resources Act* Ch.206, it is my submission that the State is bound to recognise and accept claims of ownership to watercourses that exist in the customary legal order (some evidence of which is presented in Part III of this thesis).

The customary water rights holders covered in the field work research in this thesis (see Part III) agreed with the view at common law that water as a substance cannot be owned in its wild state, but watercourses, i.e., rivers, lakes, creeks, etc., can be owned by the riparian landowning clans and are indeed where such watercourses flow through their land. It is through the ownership of the watercourse as determined by their riparian land that these people then go on to assert ownership rights to the water resources which occur at the part of the watercourse that they own. In other words, ownership of a watercourse or parts of a watercourse gives access rights to that particular area of the watercourse and all the resources that occur in that particular watercourse or part of the watercourse. People who have no ownership rights have no access rights and therefore cannot access the water resources in that area.

One other point that was strongly made by the village people I visited during the field work is that customary water rights to them as "river people" were paramount because they depended on water and water resources for their daily sustenance and their total way of traditional or customary living in their communities. As river people, they have developed food gathering skills and honed out all other skills required to enable them to survive in
these environments centred around the rivers, lakes, swamps and all other watercourse. The rivers, lakes and the other watercourses which they live in and around have become so central to their daily lives, both physically and spiritually. They depend on the watercourses for all their domestic requirements, transportation, food gathering, exploitation of water resources for commercial gains, and spiritual aspects of their lives such as conducting initiation rites. As river people, they tend to depend more on the watercourses for their daily sustenance rather than on the land. Many of them do not have good gardening skills but have excellent fishing, canoe making, crocodile and turtle hunting, and navigational skills. These skills enable them to live in the watercourse environment that they live in. In this regard, a distinction must be drawn between those other inland people such as the Mekeos of Angabanga river and the Gabadis of the Aroa river as seen at Chapter 10 and the typical river people such as those of the Sepik (Chapter 8) and Fly (Chapter 12). These other inland people such as the Mekeos and Gabadis do not depend on the watercourses to the same extent as the “river people” do. The Mekeos and the Gabadis are in actual fact “land based” people and have good gardening skills. They only use their watercourses for the extraction of water for domestic purposes, occasional or seasonal fishing (such as the seasonal prawn harvesting on the Aroa river) and the occasional use of the watercourses for transportation. The rivers and other watercourses do not play a central part in the conduct of their daily lives as opposed to the typical “river people”.

Based on my analysis in Chapters 3 and 14 and the case studies presented in Part III of this thesis, I make the observation that customary water rights are clearly properly rights and are therefore enforceable by the holders of these rights in the event of breach. No doubt, the aborted Ok Tedi River landowners’ lawsuit as presented in Chapter 13 is testimony of that. Since customary water rights are rights in property, they are accorded constitutional protection under s.53(4) of the Constitution and therefore are protected from any arbitrary and unjust abrogation.

At a more general doctrinal level, one must now realise that customary water rights as they occur in Papua New Guinea are not strictly restricted to the ordinary meaning of “water use rights” that occur in general water law as discussed in Part I, particularly in Chapters 2 and 4. Customary water rights as they occur in Papua New Guinea, are all embracing and therefore includes not only the right to take and use of water *per se*, but the access right to all of the other water resources, both living and non-living, that occur in the rivers, lakes and other watercourses which the indigenous people have rights over.
Finally, it is important to note that the law in Papua New Guinea allows for the customs of the indigenous peoples of the country to be pleaded and applied as law as seen in Chapter 14 of this thesis. In keeping with this, statute law on water resources management does not extinguish customary water use rights but allows for co-existence with statute based water use rights (see Chapter 6). Whilst on the one hand statute based water use rights are elaborately specified (as seen in Chapters 6 and 7), on the other hand, customary water rights are defined vaguely and left unspecified. This thesis, particularly the numerous case studies in Part III, has attempted to give some substance to and ascertain the nature of customary water rights.
Annexure 1 Questionnaire

Water Rights And Water Resources Ownership Claims
Questionnaire

Village: .................................................. Location: ..................................................
Elder/Leader: .......................................... Population: ..............................................

Names and Number of Clans in village:

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........................................................................................................................................

A. LAND USE

1. Is land held in common, or is individual ownership of land recognised?

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2. How is land delimited, and acquired?

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........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
B. RIVER/LAKE/WATERCOURSE USE RIGHTS

3. How are water use rights acquired?

4. Does the clan, tribe or village assert ownership claims over a river, lake etc. or to parts of such rivers, lakes and watercourses?

5. Does these claims include ownership of a river or lake bed?

6. Is the river, lake or watercourse or parts of such held in common or individually?

7. Are the ownership claims a river/lake etc., separate or related to ancestral right to riparian land?

8. What kind of rights may be claimed, and how are these rights delimited amongst members of the clan, tribe or village?
9. If one know that there is underground water/well water on the land, who would own the water?

C. RESOURCES USE

10. What water resources are utilized by the village or villagers:
   a) in the past?

11. Are there any restrictions as to what water resources are exploited?

12. Are there any restrictions to the use which may be made of water resources?

13. Are there any sanctions which may be imposed? If there are, by whom?
D. TERRITORIAL CLAIM

14. Does the clan, tribe or village make any claim to exclusivity over:

   a) river, lake or watercourses or parts of such?
   .................................................................
   .................................................................
   .................................................................
   .................................................................

   b) the fisheries in the river, lake, watercourses or parts of those?
   .................................................................
   .................................................................
   .................................................................
   .................................................................

   c) The non-living resources therein?
   .................................................................
   .................................................................
   .................................................................
   .................................................................

15. What is the geographical extent of these claims?
   .................................................................
   .................................................................
   .................................................................
   .................................................................

16. Is compensation a consideration for use of resources by:

   a) other people in the village or community?
   .................................................................
   .................................................................
   .................................................................
   .................................................................

   b) other outsiders?
   .................................................................
   .................................................................
   .................................................................
   .................................................................
17. If compensation is a consideration, what kind of compensation is expected in each instances in #12?

18. Does the village recognize any traditional right of outsiders to the use of a river, lake or watercourses and the resources therein?

E. MAGICO RELIGIOUS CONSIDERATION

19. Are there any magico religious consideration in parts of rivers, lakes or water courses

20. What are some of the magico-religious practices observed, if any?
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<tbody>
<tr>
<td>A-G v. Dorking Union Guardians</td>
<td>1882</td>
<td>20 Ch D 595 (CA)</td>
</tr>
<tr>
<td>Alfred F. Beckett Ltd v. Lyons</td>
<td>1967</td>
<td>1 Ch. 449 (CA).</td>
</tr>
<tr>
<td>Application of Chai Sheng</td>
<td>1993</td>
<td>PNGLR 105.</td>
</tr>
<tr>
<td>Attwood v. Llwy Main Collieries Ltd.</td>
<td>1926</td>
<td>Ch. 444.</td>
</tr>
<tr>
<td>Bailey &amp; Co. v. Clark Sons &amp; Morland</td>
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<td>1610</td>
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</tr>
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</tr>
<tr>
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<td>1887</td>
<td>21 l.r. iR 560.</td>
</tr>
<tr>
<td>Bell v. Pitt</td>
<td>1956</td>
<td>Tas SR 161.</td>
</tr>
<tr>
<td>Blount v. Layard</td>
<td>1891</td>
<td>2 Ch. 681.</td>
</tr>
<tr>
<td>Bradford Corporation v. Ferrand</td>
<td>1902</td>
<td>2 Ch. 655.</td>
</tr>
<tr>
<td>Chasemore v. Richards</td>
<td>1859</td>
<td>7 HL Cas 349.</td>
</tr>
<tr>
<td>Crossley &amp; Sons Ltd v. Lighthowler</td>
<td>1867</td>
<td>2 Ch. App 478.</td>
</tr>
<tr>
<td>Cunard v. Antifyre Ltd</td>
<td>1933</td>
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</tr>
<tr>
<td>Dakin v. Cornish</td>
<td>1845</td>
<td>6 eX. 360.</td>
</tr>
<tr>
<td>Dickinson v. Grand Junction Canal Co.</td>
<td>1852</td>
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