

**LEGAL REGIMES FOR THE CONSERVATION OF  
PACIFIC SHARKS AND CAPACITY FOR  
IMPLEMENTATION IN SMALL ISLAND  
DEVELOPING STATES**

**Dr Joytishna Jit**

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## **Abstract**

This dissertation examines the law and policy framework for shark conservation and management in the Pacific Island states and their capacity for implementation. Widespread distribution of sharks and associated threats make shark conservation and management complex. To ensure long-term protection of sharks, it is important to regulate threatening activities. Shark populations in the Pacific Islands are affected by fisheries and cultural utilisation. The Pacific Islands Regional Action Plan for Sharks (PI-RPOA) only addresses the impact of offshore commercial fisheries on sharks while acknowledging the importance of small-scale, artisanal and recreational fisheries and cultural utilisation. There is increasing amount of information and management tools proposed for mitigating shark bycatch and related finning but not for other impacts on sharks although more holistic regional actions is be warranted under international law. There is currently no comprehensive study to evaluate if the international and/or Pacific Islands legal regime addresses all key areas for shark conservation, and the capacity of implementation in small island developing states (SIDS).

The overall analysis of the legal regimes in this thesis reveals that there is an absence of a comprehensive and cohesive legal framework for the shark conservation of Pacific sharks. There are gaps in the international regulatory framework for protecting sharks due to the existence many general principles but few specific obligations that are applicable to sharks, and the focus on only a handful of threatened species. The international regime does not contain measures for shark bycatch mitigation in coastal fisheries, shark finning, and the regulation of traditional shark fisheries based on socio-economic values. Implementation by states may not specifically address the issue of shark overexploitation and wastage if provisions also do not address sharks.

**SUPERVISORS:**

Prof. Martin Tsamenyi

Dr. François Bailet

# Acronyms

ABNJ	Areas beyond national jurisdiction
BPOA	Barbados Plan of Action for Sustainable Development of Small Island Developing States
CBD	Convention on Biological Diversity
CCAMLR	Antarctic Treaty and the Convention for the Conservation of Antarctic Marine Living Resources
CI	Conservation International
CITES	Conventions on International Trade in Endangered Species
CMM	Conservation and Management Measure
CMS	Convention on Migratory Species of Wild Animals
CMT	Customary marine tenure
CNMI	Commonwealth of the Northern Marianas
CoP	Conference of Parties
CROP	Council of Regional Organisations of the Pacific
CSIRO	Commonwealth Scientific and Industrial Research Organisation
Cth	Commonwealth
DWFN	Distance Water Fishing Nation
EEZ	Exclusive Economic Zone
EPBC	Environment Protection and Biodiversity Conservation
FAO	Fisheries and Agricultural Organization
FFA	Foreign Fisheries Agencies
FSA	United Nations Fish Stocks Agreement
GEF	Global Environmental Fund
IATTC	Inter-American Tropical Tuna Commission

IGO	Intergovernmental Organisation
IMO	International Maritime Organization
IOSEA	Indian Ocean and South East Asia
IOTC	Indian Ocean Tuna Commission
IPOA	International Plan of Action
IUCN	International Union for the Conservation of Nature
IUU	Illegal, unregulated and unreported
IWP	International Waters Project
LMMA	Locally Managed Protected Areas
LOSC	United Nations Convention on the Law of the Sea
MEA	Multilateral Environmental Agreement
MPA	Marine Protected Area
MoU	Memorandum of Understanding
NBSAP	National Biodiversity Sustainability Action Plan
NGO	Non-Governmental Organisation
PIF	Pacific Island Forum
PITIA	Pacific Islands Tuna Industry Association
PNG	Papua New Guinea
PSSA	Particularly sensitive sea areas
RFMO	Regional Fisheries Management Organisation
SIDs	Small Island Developing States
SOPAC	South Pacific Applied Geoscience Commission
SPBEA	South Pacific Board for Educational Assessment
SPC	Secretariat of the Pacific Community
SPREP	South Pacific Regional Environment Programme
SPTO	South Pacific Tourism Organisation
TAP	Threat Abatement Plan

TDMP	Tuna Development and Management Plan
TSPZ	Torres Strait Protected Zone
TSSC	Threatened Species Scientific Community
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Programme
USP	University of the South Pacific
WCPFC	Western Central Pacific Fisheries Commission
WCPO	Western Central Pacific Ocean
WTP	Western Tropical Pacific
WWF	World Wildlife Fund for Nature
WWF-SPP	World Wildlife Fund for Nature–South Pacific Program



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# 1 Introduction

There is increasing concerns regarding the conservation status of sharks worldwide. Currently, 201 species of sharks (50 per cent) are listed under the Red List of endangered animals by the World Conservation Union (IUCN).<sup>1</sup> The primary concern is shark overexploitation and wastage due to fining. Dried shark fin can fetch over USD300 per kilogram on Asian markets and its economic value is driving the decline in global shark populations.<sup>2</sup> The high number of shark species, high inter-species variability in terms of habitat range and behaviour, and associated threats make shark conservation and management complex. To ensure long-term protection of sharks, it is important to regulate threatening activities.

Shark populations in the Pacific Islands are affected by fisheries and cultural utilisation. Fisheries activities may be commercial, small-scale, artisanal, recreational or illegal, unreported and unregulated (IUU). Longline and purse seine fisheries operations are a major activity impacting Pacific shark populations which are caught incidentally. Apart from fishing, coastal habitat degradation such as through coastal development activities is also a primary concern. The Pacific Islands Regional Action Plan for Sharks (PI-RPOA) only addresses the impact of offshore commercial fisheries on sharks while acknowledging the importance of small-scale, artisanal and recreational fisheries and cultural utilisation. Pacific ecological risk assessment reports guided by the PI-RPOAs are also centrally located around this common theme of offshore commercial fisheries

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<sup>1</sup> IUCN Red List <[www.redlist.org](http://www.redlist.org)> The conservation status of several shark species cannot not been assessed due to lack of data and information.

<sup>2</sup> James Larcombe and Gavin Beggs 2008, *Fishery status reports 2007: status of fish stocks*

(bycatch and related finning). In this regard, there is increasing amount of information and management tools proposed for mitigating shark bycatch and related finning but not for other impacts on sharks although more holistic regional actions may be warranted under international law. There is currently no comprehensive study to evaluate if the international and/or Pacific Islands legal regime addresses all key areas for shark conservation. Further, implementation by states may not specifically address the issue of shark overexploitation and wastage if provisions also do not address sharks. Recent regional species risk assessments and corresponding management options for bycatch mitigation also needs to be reflected in such regimes.

The international law and policy framework for regulating fisheries occurs under a number of agreements, organisations and intergovernmental instruments. These commonly include United Nations (UN) and its processes and organisations, and regional fisheries management organisations (RFMOs). Fisheries and bycatch may be governed by principles under the 1982 Law of the Sea Convention (LOSC)<sup>3</sup> and related fisheries instruments. Further, intergovernmental organisations have also developed multilateral environmental agreements (MEAs) that mainly respond to specific threats to the environment, species or habitats. Several MEAs are relevant to the regulation of direct take of threatened species, in particular the Convention on Migratory Species of Wild Animals, 1973 (CMS)<sup>4</sup>, Convention on International Trade in Endangered Species

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*managed by the Australian Government (Bureau of Rural Sciences, 2006).*

<sup>3</sup> *United Nations Law of the Sea Convention*, opened for signature 10 December 1982, 1833 UNTS 3(entered into force 16 November 1994).

<sup>4</sup> *Convention on Migratory Species of Wild Animals*, opened for signature 23 June 1979 1651 UNTS 356 (entered into force 1983).

of Wild Fauna and Flora, Washington, 1973 (CITES),<sup>5</sup> and the Convention on Biological Diversity Conservation, 1992 (CBD).<sup>6</sup>

This dissertation examines the law and policy framework for shark conservation and management in the Pacific Island states and their capacity for implementation. Law and policy for protecting sharks must reflect science and policy-based management mechanisms.

## **1.1 Conservation and Biology of Sharks**

There are 80 species of sharks which occur in Pacific Island states classified by the International Union for the Conservation (IUCN) Shark Specialist Group as Australian chondrichthyans (Table 1).

Sharks are inherently vulnerable to exploitation based on their biological attributes. In particular, sharks are a long-lived species which are slow to mature and have low fecundity. In contrast to the low recruitment rate of sharks, the demand for shark exploitation is high for fining and other products. Some shark species are sensitive to mortality in the adult and subadult life history stages.<sup>7</sup> A 2009 ecological risk assessment study indicated that Pacific shark constitute a group of relatively low-productivity

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<sup>5</sup> *Convention on International Trade of Endangered Species*, opened for signature 3 March 1973, 993 UNTS 244 (entered into force 31 December 1994).

<sup>6</sup> *Convention on Biological Diversity*, opened for signature 5 June 1992, 1760 UNTS 79 (entered into force 29 December 1993).

<sup>7</sup> Camhi et al, *Sharks and their Relatives: Ecology and Conservation* (IUCN/SSC SSG, 1998); T. R Sminkey, and J. A. Musick, demographic analysis of the sandbar shark, *Carcharhinus plumbeus* in the western North Atlantic (1996: 94) *Fishery Bulletin* 341; D. W. Au and S. E. Smith, A demographic method with population density compensation for estimating productivity and yield per recruit of the leopard shark (*Triakis semifasciata*) (1997: 54) *Canadian Journal of Fisheries and Aquatic Sciences* 415; K. K. Brewster-Geisz and

species which are subject to fishing mortality as bycatch.<sup>8</sup> Sharks are at a higher risk of extinction than the targeted tuna and billfish.<sup>9</sup>

There is little information available on the status of shark stocks in the Pacific region, except for the north pacific blue shark. For this species, the stock population is close to its maximum sustainable level.<sup>10</sup> The determination of shark stock status requires knowledge of biological characteristics, stock boundaries and fisheries impacts.<sup>11</sup>

Endangered shark species that are recognised as affected by the commercial fisheries in the Pacific Islands include:

- Bigeye thresher shark
- Thresher
- Silky shark
- Oceanic whitetip shark
- Shortfin mako
- Longfin mako
- Blue shark
- Pelagic shark

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T. J. Miller, Management of the sandbar shark, *Carcharhinus plumbeus*: Implications of a stage model (2000: 98) *Fishery Bulletin* 236.

<sup>8</sup> Mary Lack and Frank Meere, *Guidance for Pacific Island Countries and Territories on the Conservation and Management of Sharks* (FFA/SPC/SPREP, 2009) 64.

<sup>9</sup> Ibid.

<sup>10</sup> Ibid 62.

<sup>11</sup> Ibid 69.



There are additional species of concern for which the global or regional conservation status has not been determined due to data deficiency. These are:

- Blacktip shark
- Salmon shark
- Silvertip shark
- Galapagos shark
- Sandbar shark

**Table 1. Common shark species observed in Pacific Island states. Key: LL – longlines; PS – Purse seine; HMS – highly migratory species**

Common name	Scientific name	PICTs identified in distribution (Cavanagh <i>et al.</i> , 2003; Last and Stevens, 2009)	Identified by observers in PICTs in longline (LL) or purse seine (PS) fisheries	Classification	UNCLOS Annex 1
Banded eagle ray	<i>Aetomylaeus nichofii</i>	PNG		Coastal	
Basking shark	<i>Cetorhinus maximus</i>		LL (PNG only)	Coastal/Semi-pelagic	HMS
Bigeye sand shark	<i>Odontaspis noronhai</i>		LL (PNG only)		
Bigeye thresher	<i>Alopias superciliosus</i>	New Caledonia	LL, PS	Oceanic	HMS
Bignose shark	<i>Carcharhinus altimus</i>		LL, PS	Coastal/Semi-pelagic	HMS
Blackspot shark	<i>Carcharhinus sealei</i>	PNG		Coastal	
Blacktailed spurdog	<i>Squalus melanurus</i>	New Caledonia, Vanuatu		Coastal	
Blacktip reef shark	<i>Carcharhinus melanopterus</i>	Marshall Islands	LL, PS	Coastal	HMS
Blacktip shark	<i>Carcharhinus limbatus</i>		LL, PS	Coastal/Semi-pelagic	HMS
Blue shark	<i>Prionace glauca</i>		LL, PS	Oceanic	HMS
Blue-spotted fantail ray	<i>Taeniura lymma</i>	PNG, Solomon Islands		Coastal	
Bronze whaler	<i>Carcharhinus brachyurus</i>		LL, PS	Coastal/Semi-pelagic	HMS
Brown-banded bamboo shark	<i>Chiloscyllium punctatum</i>	PNG		Coastal	
Bull shark	<i>Carcharhinus leucas</i>		LL, PS	Coastal/Semi-pelagic	HMS
Bullhead sharks	<i>Heterodontiformes</i>		LL	Coastal	
Cookie-cutter shark	<i>Isistius brasiliensis</i>	Fiji, Cook Islands	LL	Oceanic	
Coral catshark	<i>Atelomycterus marmoratus</i>	PNG		Coastal	
Crocodile shark	<i>Pseudocarcharias kamoharai</i>		LL, PS	Oceanic	
Cyrano spurdog	<i>Squalus rancureli</i>	Vanuatu		Coastal	
Darksnout hound shark	<i>Hemitriakis abdita</i>	New Caledonia		Coastal	
Dusky shark	<i>Carcharhinus obscurus</i>		LL (PNG only), PS	Coastal/Semi-pelagic	HMS
Endeavour dogfish	<i>Centrophorus moluccensis</i>	New Caledonia		Coastal	
Epaulette shark	<i>Hemiscyllium ocellatum</i>	PNG and possibly Solomon Islands		Coastal/Semi-pelagic	
False pygmy shark	<i>Etmopterus pseudosqualiolus</i>	New Caledonia		Oceanic	
Galapagos shark	<i>Carcharhinus galapagensis</i>	Samoa, Cook Islands, French Polynesia	LL, PS	Coastal/Semi-pelagic	HMS
Giant shovelnose ray	<i>Rhinobatos typus</i>	PNG, Solomon Islands		Coastal	
Graceful shark	<i>Carcharhinus amblyrhynchoides</i>	PNG		Coastal	HMS
Great hammerhead	<i>Sphyrna mokarran</i>	PNG, New Caledonia, French Polynesia	LL, PS	Coastal/Semi-pelagic	
Great white shark	<i>Carcharodon carcharias</i>		LL	Oceanic	HMS
Grey bamboo shark	<i>Chiloscyllium griseum</i>	PNG		Coastal	
Grey reef shark	<i>Carcharhinus amblyrhynchos</i>		LL, PS	Coastal	HMS
Hardnose shark	<i>Carcharhinus macloti</i>	PNG		Coastal	HMS
Hooded carpet shark	<i>Hemiscyllium strahani</i>	PNG		Coastal	
Indonesian speckled carpet shark	<i>Hemiscyllium freycineti</i>	PNG		Coastal	
Longfin mako	<i>Isurus paucus</i>		LL, PS	Oceanic	HMS
Longnose hound shark	<i>Iago garricki</i>	Vanuatu		Coastal	
Mandarin shark	<i>Cirrhigaleus barbifer</i>	Vanuatu		Coastal	
Megamouth shark	<i>Megachasma pelagios</i>		PS	Oceanic	HMS
Milk shark	<i>Rhizoprionodon acutus</i>	PNG		Coastal	HMS
Nervous shark	<i>Carcharhinus cautus</i>	PNG, Solomon Islands		Coastal	
New Caledonia catshark	<i>Aulohalaelurus kanakorum</i>	New Caledonia		Coastal	

Oceanic whitetip shark	<i>Carcharhinus longimanus</i>		LL, PS	Oceanic	HMS
Papuan epaulette shark	<i>Hemiscyllium hallstromi</i>	PNG		Coastal	
Pelagic stingray	<i>Dasyatis violacea</i>	PNG	LL, PS	Oceanic	
Pelagic thresher	<i>Alopias pelagicus</i>	New Caledonia	LL, PS	Oceanic	HMS
Pigeye shark	<i>Carcharhinus amboinensis</i>	PNG, Solomon Islands		Coastal	HMS
Pink lantern shark	<i>Etmopterus dianthus</i>	New Caledonia		Coastal	
Pondichery shark	<i>Carcharhinus hemiodon</i>	PNG		Coastal	
Pygmy devilray	<i>Mobula eregoodootenke</i>	PNG		Oceanic	
Salmon shark	<i>Lamna ditropis</i>		LL (PNG only), PS	Oceanic	HMS
Sandbar shark	<i>Carcharhinus plumbeus</i>		LL, PS	Coastal/Semi-pelagic	HMS
Scalloped hammerhead	<i>Sphyrna lewini</i>	PNG	LL, PS	Coastal/Semi pelagic	HMS
Seal shark	<i>Dalatis licha</i>		LL (Cook Isl. only)	Coastal	
Shark ray	<i>Rhina ancylostoma</i>	PNG		Coastal	
Sharptooth lemon shark	<i>Negaprion acutidens</i>	PNG; other Pacific Islands		Coastal	HMS
Shortfin mako	<i>Isurus oxyrinchus</i>		LL, PS	Oceanic	HMS
Silky shark	<i>Carcharhinus falciformis</i>		LL, PS	Oceanic	HMS
Silvertip shark	<i>Carcharhinus albimarginatus</i>	PNG, Solomon Islands	LL, PS	Coastal/Semi-pelagic	HMS
Slender bamboo shark	<i>Chiloscyllium indicum</i>	PNG, Solomon Islands		Coastal	
Sliteye shark	<i>Loxodon macrorhinus</i>	PNG		Coastal	HMS
Smooth hammerhead	<i>Sphyrna zygaena</i>		LL, PS	Coastal/Semi-pelagic	HMS
Spinner shark	<i>Carcharhinus brevipinna</i>	Pacific Islands		Coastal/Semi-pelagic	HMS
Spurdog	<i>Squalus megalops</i>		PS	Coastal	
Tailspot lantern shark	<i>Etmopterus caudistigmus</i>	New Caledonia		Coastal	
Tasselled wobbegong	<i>Eucrossorhinus dasypogon</i>	PNG		Coastal	
Tawny nurse shark	<i>Nebrius ferrugineus</i>	PNG, New Caledonia, Samoa, Palau, Marshall Islands		Coastal	
Thresher shark	<i>Alopias vulpinus</i>		LL, PS	Oceanic	HMS
Tiger shark	<i>Galeocerdo cuvier</i>		LL, PS	Coastal/Semi-pelagic	HMS
Whale shark	<i>Rhincodon typus</i>		LL ( PNG only), PS	Oceanic	HMS
Whip stingray	<i>Dasyatis akajei</i>		LL, PS	Coastal	
Whitecheek shark	<i>Carcharhinus dussumieri</i>	PNG		Coastal	HMS
Whitenose shark	<i>Nasolamia velox</i>		LL ( PNG only)	Coastal	HMS
White-spotted eagle ray	<i>Aetobatus naninari</i>	Pacific Islands		Coastal	
White-spotted guitarfish	<i>Rhynchobatus australiae</i>	PNG		Coastal	
Whitetip reef shark	<i>Triacnodon obesus</i>		LL (PNG only)	Coastal	HMS
Whitish catshark	<i>Apristurus albisoma</i>	New Caledonia		Coastal	
Winghead shark	<i>Eusphyra blochii</i>	PNG		Coastal	HMS
Zebra shark	<i>Stegostoma fasciatum</i>	PNG, New Caledonia, Palau	LL( PNG only)	Coastal	

Source: Cavanagh *et al.* (2003); Last and Stevens (2009); Camhi *et al.* (2009); IUCN (the World Conservation Union) Shark Specialist Group (2007); Froese and Pauly (2009); SPC observer database

## **1.2 Problem Context**

Most shark fisheries are unmanaged, and trade in shark products is unregulated. The key threats to shark from fisheries are bycatch, direct exploitation and damage to habitats. Together with regional cooperation, these are referred to as ‘Key Areas’ in this thesis. This section outlines the nature of the key threats and their implications for regulation.

### ***1.2.1 Bycatch***

Bycatch generally refers to marine animals incidentally caught or injured during fisheries operations targeting other marine species. Shark bycatch is a global concern in coastal and offshore fisheries. In the Pacific Islands, sharks are known to constitute approximately 25 per cent of the total longline catch weight.<sup>12</sup>

Mitigation of bycatch requires regulation of state and regional fisheries. The threat to sharks from tuna and billfish fisheries has an international character due to fishing fleets belonging to Pacific island states as well as foreign states. Fishing fleets of one state may fish in other states’ jurisdiction or beyond governed by principles under the 1982 Law of the Sea Convention (LOSC)<sup>13</sup> and related fisheries instruments. In the South Pacific, fishing interests are of a global nature with large fishing fleets such as from Japan, Taiwan, Korea and United States of America (USA) targeting tuna and

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<sup>12</sup> Brett Molony, ‘Commonly captured shark and rays for consideration of the ecosystem and bycatch SWG at SC3’ 3<sup>rd</sup> Regular Session of the Scientific Committee (Honolulu, Hawaii – 13-24 August 2007).

<sup>13</sup> *United Nations Law of the Sea Convention*, opened for signature 10 December 1982, 1833 UNTS 3(entered into force 16 November 1994).

tuna-like fish.<sup>14</sup> The PI-RPOA shows that catch of sharks by vessels flagged to Pacific Island states are very small compared to the total portion of catches in the region. Pacific island states which have collected and reported data on shark catches in 2011 include Cook Islands (1.9MT), Fiji (0.94MT), Kiribati (24.5MT), Marshall Islands (3MT), Samoa (.95MT) and Tonga (14.2 MT).<sup>15</sup> Foreign states whose vessels landed highest quantities of sharks from the region, including the waters within national jurisdiction, include China (>1134MT), Chinese Taipei (28000MT<sup>16</sup>), Japan (593MT), Korea, New Zealand (>950MT) and USA (88MT).

Domestic fleets in the region constitute the offshore fishing industry, and there are also some coastal fishing industries in which sharks can also be caught. Shark bycatch mitigation measures will need to be incorporated into the domestic and regional fisheries governance regime consistent with a responsible and sustainable approach to fisheries management. It is important that regulations that apply to fisheries and the environment are clearly linked in terms of conservation and management measures for mitigating of shark bycatch. The South Pacific's environment is governed by principles under a number of MEAs through regional inter-governmental organisations and states. The distinction between fisheries and environmental governance is often made due to the regional geo-political settings consisting of distinct but not disparate fisheries and environmental organisations.<sup>17</sup>

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<sup>14</sup> *Cities, Seas and Storms: Managing Change in the Pacific Islands Economies* (World Bank, 2004) 34.

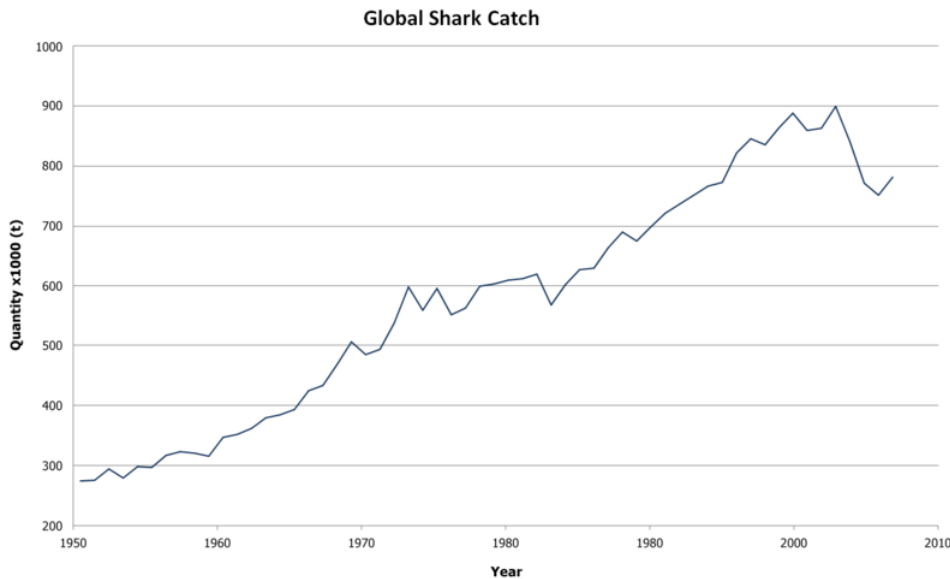
<sup>15</sup> Annual reports to the Western and Central Pacific Fisheries Commission at the 8<sup>th</sup> regular session of the scientific committee (Busan, Korea, 7 - 15 August 2012).

<sup>16</sup> May include sharks caught in its national EEZ.

<sup>17</sup> See Pacific Island Forum Secretariat 'CROP' Available at <http://www.forumsec.org.fj/pages.cfm/about-us/crop/>; See also discussion Martin Tsamenyi, 'The

### 1.2.2 Direct take for meat and fins

There are considerable numbers of sharks and/or shark fins taken by humans (Figure 1). Of particular concern is the international trade in shark fins consisting of 73 million sharks killed annually.<sup>18</sup> The international shark trade lacks an adequate monitoring and control program.<sup>19</sup> In the Pacific Islands, shark finning which occurs may be targeted or opportunistic based on incidental capture of sharks by coastal and offshore fisheries.



**Figure 1. Global capture of sharks (Huh, 2009).<sup>20</sup>**

The management of shark fisheries is challenging in the South Pacific. Sharks for international trade in fins are most likely targeted by foreign vessels operating in the

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institutional framework for regional cooperation in the ocean and coastal management in the South Pacific' (1999) 42 *Marine Policy* 465-481.

<sup>18</sup> Mary Lack and Glen Sant, *Illegal, Unreported and Unregulated Shark Catch: A review of current Knowledge and Action* (Traffic, 2008) 3.

<sup>19</sup> FAO International Plan of Action for Sharks (FAO, 2002) <<http://www.fao.org/fishery/ipoa-sharks/en>>

Pacific Ocean. However, the scale and dynamics of national or regional shark fisheries in the Pacific Ocean is yet to be determined and subsequently managed. Illegal, unreported and unregulated shark finning activities are known to occur.<sup>21</sup> IUU fishing for sharks has been identified in Cook Islands, Fiji, Federated States of Micronesia, New Caledonia, Palau, Papua New Guinea and Tonga.<sup>22</sup>

In this regard, shark finning related to shark bycatch in tuna and tuna like fisheries and IUU fishing is a primary concern among Pacific Island states. There is a need for holistic shark management principles at regional and national levels to advance in mitigating detrimental effects of fishing on sharks. The international legal framework for fisheries and environment provides some standards for collaboration and harmonisation. These will be evaluated in the context of the region. According to a 2008 report on IUU fishing, shark management, where it occurs, is often indirect, and does not include species-specific measures despite varying vulnerabilities.<sup>23</sup> Controls need to include control on mortality and catches without solely relying on finning controls. These will be integrated in the analysis of the legal framework in this thesis. Further, measures will need to take into consideration capacity for implementation in SIDS. These include capacity and constraints of SIDS, supporting IGO framework, external donors and NGOs.

There is also a heavy reliance by Pacific Islanders on marine resources, including

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<sup>20</sup> Chrs Huh, Global Capture Production FAOStat, 2009.

<sup>21</sup> Regional shark assessment, PI IPOA for sharks, 2009, 70.

<sup>22</sup> Mary Lack and Glen Sant, Illegal, Unreported and Unregulated Shark Catch: A review of current Knowledge and Action (Traffic, 2008) 3.

<sup>23</sup> Mary Lack and Glen Sant, Illegal, Unreported and Unregulated Shark Catch: A review of current Knowledge and Action (Traffic, 2008) 3.

shark meat. Sharks are exploited for artisanal and cultural uses. In some Pacific cultures, like Fiji shark capture is taboo (except Rotuma). Small-scale community based fisheries and conservation initiatives will play an important part in the conservation of sharks in Pacific Islands.

### ***1.2.3 Habitats***

Factors such as coastal development and pollution can affect coastal shark species. In this context, shark protection measures are required in addition to other common conservation and management measures related to overexploitation of other fisheries resources and degradation of the environment.<sup>24</sup> This is to preserve important shark habitats. High inter-species variability in shark habitat and behaviour means that large-scale protected areas are a good measure, and time-area closures are not optimal.<sup>25</sup>

The next chapters will provide more specificity in terms of relevant regulatory measures for shark conservation and management. There is an expectation that the international, regional and national frameworks also respond similarly within the context of sharks. Management responses to threats to Pacific sharks include sustainable utilisation in small-scale fisheries, protected areas and bycatch mitigation. Due to the transboundary nature of several species of sharks, an additional key area analysed in this thesis is cooperation of multiple nations.

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<sup>24</sup> See South et al., Pacific Islands: GIWA Regional Assessment (2004), UNEP 21, 48.. [http://www.unep.org/dewa/giwa/areas/reports/r62/giwa\\_regional\\_assessment\\_62.pdf](http://www.unep.org/dewa/giwa/areas/reports/r62/giwa_regional_assessment_62.pdf); P. R. Gonzales, 'Small island: A question of survival' (2004)(1) *World Conservation* 15.



### 1.3 Scope and Objectives

To analyse the laws and policies for protecting Pacific Island sharks based on relevant management mechanisms that lead to conservation and long-term sustainability of sharks.

### 1.4 Thesis Outline

Chapter	Purpose
1.0 Background and Context	Introductory chapter highlighting the problem context relating to the thesis topic and the line of argument that will be used in the thesis.
<b>Part I – Legal Regime</b> 2.0 International Law 3.0 Pacific Islands Framework for Conserving Sharks	Doctrinal analysis of the duty of states under LOSC, other MEAs and Pacific instruments as they apply to sharks. Principles and specific provisions relevant to sharks which oblige regions and states to enact further legal instruments will be identified. This is followed by an overall analysis of the legal regimes in terms of bycatch, direct take, habitat protection and regional cooperation.
<b>Part II: Key Areas,</b>	A synthesis of previous chapters to identify the overall

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<sup>25</sup> See Clarke et al, 'Identification of factors influencing shark catch and mortality in the Marshall Islands tuna longline fishery and management implications' (2012: 80) *Journal of Fish Biology* 1870.

<p><b>Capacity</b></p> <p>4.0 Implementation in the Pacific States and the Issue of SIDS capacity</p>	<p>gaps and opportunities in the regulatory framework for conserving sharks in Pacific Island states, including capacity for implementation.</p>
<p>5.0 Conclusion</p>	<p>Chapter five will provide a conclusion.</p>

## **PART I: The Legal Regime**

This part is an evaluation of the international and Pacific environmental framework for shark conservation and management. The first chapter in this part provides an analysis of LOSC, FSA, CITES, CMS and CBD, identifying relevant general and specific provisions applicable in the context of sharks. These provisions will assist in understanding compliance with MEAs through the regional and national legal regimes. In the next chapter in this part, the regional governance framework is evaluated in terms of its application to shark conservation and management.

## **2 Doctrinal Analysis of the Key Legal Instruments for Pacific Shark Conservation**

The analysis of each international regime is focused on Key Areas. These areas are bycatch, direct take, habitat protection, and regional cooperation. The overall analysis of all legal regimes is provided in Part II which synthesises findings in terms of opportunities and areas for improvement, including capacity for national implementation.

### **2.1 Law of the Sea Convention**

LOSC<sup>26</sup> was adopted in 1982, nine years after the Third United Nations Conference on the Law of the Sea (UNCLOS III) convened in 1973. LOSC entered into force in 1994 and has been ratified by 167 states.<sup>27</sup> This includes all South Pacific states. LOSC is also known as a constitution of the sea.

LOSC has essentially been based on zonation of oceanic space.<sup>28</sup> It provides the jurisdictional framework for states to govern marine resources. The ocean can be categorised into six main marine zones under LOSC. These are listed here and will be explained later in this section; internal waters, territorial seas, archipelagic waters,

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<sup>26</sup> *United Nations Law of the Sea Convention*, opened for signature 10 December 1982, 1833 UNTS 3 (entered into force 16 November 1994).

<sup>27</sup> 'Status of the United Nations Convention on the Law of the Sea, of the Agreement relating to the implementation of Part XI of the Convention and of the Agreement for the implementation of the provisions of the Convention relating to the conservation and management of straddling fish stocks and highly migratory fish stocks' (United Nations, 20 September 2011) <[http://www.un.org/depts/los/reference\\_files/status2010.pdf](http://www.un.org/depts/los/reference_files/status2010.pdf)>

continental shelf, exclusive economic zone (EEZ) and the high seas. The maritime zones are measured from baselines. A normal baseline is the low water line along the coast,<sup>29</sup> although where a coastline is deeply indented or adjacent to fringing islands, straight baselines that join outer points at the low-water line can be used.<sup>30</sup> Specific rights and responsibilities of states in the different LOSC maritime zones are examined in the context of shark conservation.

### ***2.1.1 Internal waters, archipelagic and territorial waters***

Sharks enter the internal waters, archipelagic and territorial waters of states. The territorial sea extends 12 nautical miles beyond the coastal baseline of a state.<sup>31</sup> Internal waters include lakes, canals, ports and harbours on the landward side of the territorial sea baseline. Archipelagic waters occur in archipelagic states. An archipelagic state can ‘draw straight archipelagic baselines joining the outermost points of islands and drying reefs of the archipelago’.<sup>32</sup>

Under LOSC, sovereignty of states extends to the waters enclosed by archipelagic baselines and the territorial sea, including internal waters such as bays.<sup>33</sup> Sovereignty of states in territorial waters was defined as ‘absolute and exclusive’.<sup>34</sup> Sovereignty is the right to exercise, within a territory, the functions of a state, exclusive of any other state, and subject to no other authority.<sup>35</sup> States have the right to regulate resources within their jurisdictions, and therefore have the

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<sup>28</sup> Ibid 496.

<sup>29</sup> LOSC art 7.

<sup>30</sup> LOSC art 8.

<sup>31</sup> LOSC arts 3-5.

<sup>32</sup> For full description, see LOSC art 47.

<sup>33</sup> LOSC Part IV, art 49. For more information about archipelagic baselines refer to LOSC art 47.

authority to apply domestic measures through legislation and policy tailored to domestic circumstances. In this regard, states may enact legislation to protect sharks.

There a general provision in Part XII Article 194 under LOSC that makes coastal states responsible for protecting the marine environment, ecosystems, and the habitats on which endangered species depend.<sup>36</sup> There is no specific obligation for coastal states to protect endangered species in these zones. There is no guidance or standards under LOSC for protecting species of sharks although they are shared by several states probably because some species are exploited in coastal jurisdictions which are under full sovereignty of states.

### ***2.1.2 EEZ and the high seas***

An EEZ extends to 200 nautical miles beyond the coastal baseline,<sup>37</sup> and the high sea is considered to be the area of the ocean not included in the marine zones already described.<sup>38</sup> These two oceanic jurisdictions are discussed together in this section as they are relevant to the same threats to sharks (fining and bycatch), and often in the same industry, the offshore tuna and tuna-like fisheries. These provisions are cross-cutting across fisheries and marine environment protection concerns.

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<sup>34</sup> Daniel P. O'Connell, *The International Law of the Sea* (Clarendon Press, 1982) 67.

<sup>35</sup> Robin R. Churchill and Alan V. Rowe (Manchester University Press, 1988) *The Law of the Sea* 60.

<sup>36</sup> LOSC Part XII, s 1, art 194, s 5.

<sup>37</sup> LOSC Part V, art 57.

<sup>38</sup> LOSC art 86.

Coastal states have jurisdiction to protect and preserve the marine environment of the EEZ.<sup>39</sup> Under LOSC, coastal states must take national measures to conserve and manage living resources on the high seas.<sup>40</sup> States are also obliged to cooperate in the conservation and management of living resources on the high seas.<sup>41</sup>

LOSC provides a list of highly migratory species to determine living marine resources for which specific measures, such as regional cooperation, are required for their management and conservation in the EEZ and high seas.<sup>42</sup> The list of highly migratory species includes a number of fish species, including tuna, sharks and even cetaceans, such as dolphins and whales.<sup>43</sup> Under Article 64, coastal states and states whose nationals fish in the region for highly migratory species are to cooperate directly or with international organisations to conserve and promote optimum utilisation within the region within and beyond the EEZs.<sup>44</sup> Regional cooperation mechanisms will be discussed in the next chapter. Coastal species of sharks are by their nature not included.

Specific measures for conserving and managing sharks are also provided through general provisions that apply to ‘stocks’ or ‘fish stocks’ under LOSC Part V, Articles

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<sup>39</sup> LOSC Part V, art 56(1)(b)(iii).

<sup>40</sup> LOSC Part VII, s 2, art 117.

<sup>41</sup> LOSC Part VII, s 2, art 118.

<sup>42</sup> LOSC, Annex I.

<sup>43</sup> LOSC Article 64 confers upon states the obligation to cooperate internationally to ensure the conservation and promotion of the objective of optimum utilisation of high migratory species listed in Annex I throughout the region. Annex I is limited to eight species of tuna, pomfrets, marlins, sailfishes, swordfishes, sauries, dolphins, oceanic sharks and cetaceans.

<sup>44</sup> LOSC art 64 (1).

61 to 63. In particular, LOSC Articles 61 to 62 relate to the conservation and utilization of living resources harvested in the EEZ.<sup>45</sup> Provisions include:<sup>46</sup>

- Determination of total allowable catch.
- Conservation and management measures to avoid overexploitation, and the use of regional or subregional cooperative arrangements.
- Maintain or restore stocks to maximum sustainable yield taking in to consideration environmental and economic factors, coastal fishing community needs, and special requirements of developing states. Such measures should also consider fishing patterns, interdependence of stocks and any generally recommended international minimum standards.
- Exchange of scientific information, catch and effort and other relevant data relevant to conservation.

Under Article 62, states are obliged to ‘promote the objective of optimum utilisation of living resources’. Scientific information and catch and effort statistics, even if available, has not led to the determination of any optimum shark utilisation limits in the Pacific region. This is challenging for shark species which are already endangered and fishing and finning continues. In addition, species level conservation action may also be required for species not listed in LOSC. There is a need to set optimum utilisation limits for shark species which are not threatened but severely limit or prohibit the capture and retention of the endangered sharks. Another issue already

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<sup>45</sup> These LOSC articles have been analysed by other authors mainly in the context of sharks as unused bycatch species in these jurisdictions.

<sup>46</sup> LOSC art 61 (1-5).



introduced is rather the controversial fining of sharks caught in all oceanic jurisdictions either directly or as bycatch attributed to the high value placed on fins.

Finning occurs regardless of species and such a matter is not covered clearly in LOSC. Wastage also needs to be controlled given also the increasing fisheries food security concerns. For example, in a Marshall islands tuna longline fishery in which shark finning occurs only two species of sharks were retained whole, while others were discarded.<sup>47</sup>

LOSC contains some provisions that promote measures to minimise adverse effects of fishing on non-target species (bycatch and related fining).<sup>48</sup> A coastal state could require fishing gear or technique modifications to ensure that sharks survive when caught in EEZs. At best, however, a coastal state's only obligation is to ensure that shark populations are not endangered by overexploitation (as bycatch and fining). To do this, coastal states need to adopt strong measures to minimise bycatch and utilise broad enforcement powers to ensure compliance.

All states can exercise their freedom of fishing in the high seas. However, LOSC provides specific conditions for fishing in the high seas. Article 116 grants all states a right to fish on the high seas. This right is subject to the treaty obligations of states, and provisions dealing with the conservation of the living resources on the high seas. Specific conservation obligations imposed on states fishing on the high seas include the:

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<sup>47</sup> Clarke, above n 25, 1888.

- adoption, with respect to their nationals, measures for the conservation of living resources on the high seas (Article 117);
- cooperation in the conservation and management of living resources (Article 118); and
- conservation of living resources on the high seas through the implementation of a number of management measures taking into account the need for associated species to be maintained at a level above that at which their reproduction may become seriously threatened (Article 119).

### ***2.1.3 Marine environment protection in all zones***

Part XII of LOSC outlines general provisions for the protection and preservation of the marine environment. Article 192 imposes an obligation on states ‘to protect and preserve the marine environment’. Article 194(5) provides that measures should be formulated by states to ‘protect and preserve rare and fragile ecosystems as well as habitat of depleted, threatened or endangered species, and other forms of marine life’. These provisions are open to interpretation in the context of sharks. Clearly, known habitats which include coral reefs on which shark populations are heavily reliant must be protected and preserved domestically. This principle can be extended to the protection of transboundary habitat areas to ensure that shark populations are protected in their entire habitat range. This applies within all zones.

The rest of the provisions of Part XII focus largely on pollution prevention. There are obligations with regard to specified sources of pollution, such as land-based

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<sup>48</sup> LOSC Part V art 61 and Part VII, s 2, art 116(1) b.

sources,<sup>49</sup> seabed activities subject to national jurisdiction,<sup>50</sup> activities in the Area,<sup>51</sup> dumping,<sup>52</sup> vessels,<sup>53</sup> and from or through the atmosphere.<sup>54</sup>

#### ***2.1.4 Gaps in the legal regime for protecting sharks under the integrated approach***

The lack of more comprehensive measures to promote an integrated approach under LOSC is not ideal for the conservation of sharks because of the existence of semi-pelagic and highly migratory nature of many species. Consequently, efforts to mitigate bycatch and fining in the EEZ and high seas under LOSC Part V and VII will be futile in states wherein domestic harvest/fining of sharks is also a prominent threat. The EEZ and high seas are the significant source for only some threats to sharks, that is, bycatch and related fining. Shark interactions with fishing gear and fining can occur in all maritime jurisdictions.

All key threats to sharks, not just one, must be mitigated and additional conservation measures taken to protect shark habitats. There is a general provision to cooperate in formulating standards in the interest of protecting the marine environment.<sup>55</sup> Since sharks are an important component of the marine environment, states should cooperate in developing integrated measures for the conservation of sharks. Further,

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<sup>49</sup> LOSC art 207.

<sup>50</sup> LOSC art 208.

<sup>51</sup> LOSC art 209. The Area refers to the 'seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction' (LOSC art 1).

<sup>52</sup> LOSC art 210.

<sup>53</sup> LOSC art 211.

<sup>54</sup> LOSC art 212.

<sup>55</sup> LOSC Part XII, s 1, art 197.

states are obliged under LOSC to cooperate to conserve and manage highly migratory species in all maritime zones of jurisdictions.

The policy flexibility given to coastal states in the EEZ also militates against effective conservation measures. For example, coastal states can determine the allowable catch of resources in its EEZ which is not sufficient for effective management of sharks.<sup>56</sup> This is because the high level of research required for determining sustainable yields or for enforcement might not be feasible for SIDs in the absence of regional cooperative measures.

## **2.2 The United Nations Fish Stock Agreement**

FSA, concluded in 1995, complements LOSC's fisheries regime.<sup>57</sup> It entered into force in 2001 and has 78 parties.<sup>58</sup> This includes all South Pacific states. The Agreement addresses some gaps in the fisheries provisions of LOSC framework.<sup>59</sup>

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<sup>56</sup> LOSC Part V art 61(1).

<sup>57</sup> The United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, open for signature 4 August

FSA aims to ensure ‘long-term conservation and sustainable use of straddling fish stocks and highly migratory fish stocks through effective implementation of the relevant provisions of LOSC’.<sup>60</sup> This is addressed through a number of provisions that oblige state parties to take measures to conserve and manage straddling fish stocks and highly migratory species that can apply to sharks. It acknowledges that while some fish stocks straddle EEZs and the high seas, they nevertheless need to be managed throughout their range.

About 50 per cent of sharks that are caught incidentally is included in the list of ‘highly migratory species’ in LOSC, but not all of the semi-pelagic and oceanic sharks. Franckx and Hayashi take a liberal definition of ‘straddling fish stocks’ as used in FSA, and state that most species found in the high seas cross the EEZs at some stage in their life cycles and therefore can be considered straddling fish

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1995, 2167 UNTS 3 (entered into force 11 December 2001). The UN Fish Stocks Agreement was adopted in 1995 and came into force on 11 December 2001, one month after the 30<sup>th</sup> ratification was received.

<sup>58</sup> ‘Status of the United Nations Convention on the Law of the Sea, of the Agreement relating to the implementation of Part XI of the Convention and of the Agreement for the implementation of the provisions of the Convention relating to the conservation and management of straddling fish stocks and highly migratory fish stocks’ (United Nations, 20 September 2011) <[http://www.un.org/depts/los/reference\\_files/status2010.pdf](http://www.un.org/depts/los/reference_files/status2010.pdf)>

<sup>59</sup> Chapter 17 of Agenda 21 was formulated because states realised that ‘current approaches to the management of coastal and marine resources [including LOSC]’ had not proved capable of achieving sustainable development, and coastal resources were being rapidly degraded. (Agenda 21 Chapter 17(3-4)). It recommends that urgent action be taken by coastal states and states whose nationals and vessels fish on the high seas to cooperate at the bilateral, sub-regional, regional, and global levels (Agenda 21 Chapter 17(1)). The aim is to develop effective conservation measures, particularly for highly migratory species and straddling stocks. Such action and cooperation should address inadequacies of fishing practices, as well as biological knowledge, fisheries statistics, and improvement of systems handling data. Emphasis should also be on multi-species management and other approaches that take into account the relationship among species, especially in addressing depleted species (Agenda 21 Chapter 17(5)).

<sup>60</sup> UN Fish Stocks Agreement, art 2.

stocks.<sup>61</sup> By this interpretation all species of semi-pelagic and oceanic sharks will be considered highly migratory species under FSA in this thesis (Table 1).<sup>62</sup>

The objectives of FSA apply principally to the high seas.<sup>63</sup> However, key conservation obligations under the Agreement (Articles 5, 6 and 7) also apply in ‘waters under the national jurisdiction’ of parties.<sup>64</sup> Articles 5, 6 and 7 relate to conservation and management in waters within national jurisdictions such as internal waters, archipelagic waters, territorial waters and EEZs. A number of provisions oblige states to take further measures to mitigate bycatch in all maritime jurisdictions, improving on the legal regime prescribed under LOSC. These provisions are discussed in the next section.

### ***2.2.1 Principles applicable to sharks***

This section analyses the provisions that apply to the conservation and management of straddling fish stocks, and to shark bycatch or non-target species (and related fining). The conservation and management obligations according to Article 5 (a, c-g) are the requirements for coastal states and states whose nationals fish on the high seas to:

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<sup>61</sup> Erik Franckx, *Pacta Tertiis* and the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks’ (FAO, 2000)8 *FAO Legal Papers* 3; Moritaka Hayashi, ‘The role of the United Nations in managing the world’s fisheries’, in Gerald Blake et al (ed) *The Peaceful Management of Transboundary Resources* (Graham & Trotman, 1995) 373-4.

<sup>62</sup> Coastal species of sharks are going to be considered as under national jurisdiction wherein LOSC Part XII promotes states conserved and manage marine environment. However, measures are not specific as with highly migratory species under LOSC.

<sup>63</sup> UN Fish Stocks Agreement, art 3(1).

<sup>64</sup> UN Fish Stocks Agreement, art 3.

- adopt measures to support long-term sustainability of straddling stocks and highly migratory fish stocks;
- apply the precautionary approach
- assess the impacts of fishing, other human activities and environmental factors on target species, and the rest of the ecosystem;
- apply conservation and management measures to the entire ecosystem so as to protect both target species and non-target species;
- minimise pollution, discards, waste, abandoned or lost gear etc, through various measures, including the development and use of selective fishing gear and techniques—in particular, endangered species must be protected; and
- protect marine biodiversity.

These measures are relevant in terms of Pacific shark conservation and management in the context of dealing targeted harvesting, habitat protection, bycatch mitigation and/or regional cooperation. Several of these areas are covered under the precautionary approach measures which also deal with data deficiencies.

### ***2.2.2 Precautionary approach***

Under Article 6, states are required to apply a ‘precautionary approach’ to conservation, management and exploitation in national jurisdictions and beyond. In terms of the precautionary approach, FSA Article 6(2) states that:

‘states shall be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information shall not be used as a

reason for postponing or failing to take conservation and management measures.’

Sharks are a keystone species in maintaining a healthy marine environment by acting as top predators and therefore injury or mortality of sharks in fisheries operations also harms the marine environment. A precautionary approach may be taken to minimise the impact of activities (e.g. pollution, bycatch, harvesting) on shark populations because of the data deficiencies in all these areas.

A precautionary approach can be taken in fisheries management ‘to protect the living marine resources and preserve the marine environment’.<sup>65</sup> In this context, legal measures taken to prevent environmental degradation (such as through overexploitation of straddling fish stocks) may be in the form of statutory powers. For example, laws may prohibit some types of fisheries in some areas or make the use of bycatch reduction devices mandatory.<sup>66</sup> However, the application of the precautionary approach in regulation of bycatch is complex as explained below.

Schomberg indicates that there are many normative challenges in applying the precautionary approach.<sup>67</sup> The challenges are in the form of politics, policy, society

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<sup>65</sup> UN Fish Stocks Agreement, art 6(1).

<sup>66</sup> See Jeffery E. Moore et al A Review of Marine Mammal, Shark and Seabird Bycatch in USA Fisheries and the Role of Policy in Shaping Management’ (2003) 33:3 *Marine Policy* 449.

<sup>67</sup> Renè von Schomberg, ‘The precautionary principle and its normative challenges’ in Elizabeth Fisher, Judith Jones and Renè von Schomberg (ed), *Implementing the Precautionary Principle: Perspectives and Prospects* (Edward Elger, 2006) 19.



and science which tend to be deliberated in order to derive an operational definition of the precautionary approach.<sup>68</sup>

The application of the precautionary approach may be particularly complex in the Pacific tuna fisheries. This is because there are a number of competing interests in the region creating a highly political as well as scientific forum for establishing an operational definition.<sup>69</sup> Most of the coastal states in the region are developing nations with limited technical, scientific and financial resources to implement provisions relevant mitigating bycatch or surveillance and monitoring under this Agreement. This limitation is recognised in FSA<sup>70</sup> which stipulates that ‘parties shall cooperate to establish special funds’ to aid developing states in implementing the Agreement.<sup>71</sup> This should include the implementation of the precautionary approach as it applies to shark bycatch and the marine environment they depend on.

#### **2.2.2.1 Direct harvest**

The application of precautionary approach to manage direct harvest of sharks is challenging due to the lack of substantive measures under FSA that are relevant in this context. There are also challenges in relation to the application of precautionary approach in general among SIDs.

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<sup>68</sup> Schomberg, above n 67, 20-21. See also Tom Polacheck, ‘Politics and independent scientific advice in RFMO processes: A case study of crossing boundaries’ (2012) 36 *Marine Policy* 132.

<sup>69</sup> For more information, see William Sutherland and Martin Tsamenyi *Law and Politics in Regional Co-operation: A Case Study of Fisheries Co-operation in the South Pacific* (Pacific Law Press, 1992).

<sup>70</sup> UN Fish Stocks Agreement, Preamble.

<sup>71</sup> UN Fish Stocks Agreement, art 25.

Parties are obliged to ‘adopt plans which are necessary to ensure the conservation of ‘species if its status is of concern.’<sup>72</sup> Article 6 provides that for species in which the population status becomes a concern, states shall enhance monitoring to review the status and efficacy of conservation and management measures.<sup>73</sup> Several shark species are listed as threatened under IUCN.

Further, catch and effort limits should be included in cautious conservation and management measures, and used to plan gradual development of the fisheries.<sup>74</sup> In terms of controlling catch and effort, the Agreement provides that ‘states shall take measures to ensure that, when reference points are approached, they will not be exceeded’.<sup>75</sup> Data and information on shark fisheries is scarce. Richards and Maguire state that scientific research is required to quantify uncertainties associated with reference points and their practical application in a management context. Reference points will need to be developed for different species of sharks and fisheries management must be able to discriminate non-viable from viable shark fisheries based on species stock assessments. In practice, finning does not allow for such discrimination of shark carcasses are disposed and only fins retained.<sup>76</sup>

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<sup>72</sup> UN Fish Stocks Agreement, art 6(3)(d).

<sup>73</sup> UN Fish Stocks Agreement, Article 6(6) states that ‘For new or exploratory fisheries, States shall adopt as soon as possible cautious conservation and management measures, including, inter alia, catch limits and effort limits. Such measures shall remain in force until there are sufficient data to allow assessment of the impact of the fisheries on the long-term sustainability of the stocks, whereupon conservation and management measures based on that assessment shall be implemented. The latter measures shall, if appropriate, allow for the gradual development of the fisheries.’

<sup>74</sup> Ibid.

<sup>75</sup> UN Fish Stocks Agreement, art 6(4).

<sup>76</sup> Mary Lack and Frank Meere, *Guidance for Pacific Island Countries and Territories on the Conservation and Management of Sharks* (FFA/SPC/SPREP, 2009).

Many Pacific Island states such as Palau, Commonwealth of the Northern Mariana (CNMI), Guam, French Polynesia and Marshall Islands have taken the lead in terms of legal developments by banning finning completely or declaring shark sanctuaries.<sup>77</sup> Since sharks are not a commercial industry in most Pacific island states, such an approach may be extended by more states. Fiji, for example, held wide consultations in early 2012 on a ban on shark fin trade or declaring shark sanctuary consisting of the EEZ, and there was evidence of the support of the domestic fishing industry mainly for the former.<sup>78</sup> However, the consultations indicate that although sharks are a taboo species culturally in Fiji, there may be an inshore fishing industry. Further, measures to conserve sharks through sanctuaries, banning fin trade, or other means needs to occur in wide consultation to ensure optimum compliance. This is because of monitoring and enforcement challenges prominent in SIDS.

#### **2.2.2.2 Reducing shark mortality in offshore fisheries**

Fishing areas in the EEZs and high seas often overlap with habitats of oceanic sharks, and therefore it is essential to apply measures to minimise shark mortality from fisheries operations. FSA contains provisions to implement the precautionary approach, which can be applied to reduce shark bycatch and damage to associated habitats. That is, coastal states are obliged to develop research programs to assess fisheries impacts on non-target species and their environment, and ‘adopt plans ... to ensure the conservation of such species and to protect habitats of special concern’.<sup>79</sup>

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<sup>77</sup> See Erik J. Techera, ‘Fishing, Finning and Tourism: Trends in Pacific Shark Conservation and Management (2012) *The International Journal of Marine and Coastal Law* 27 597.

<sup>78</sup> Samisoni Nabilivalu, ‘Support for shark sanctuary’ *Fiji Times* (3 May 2012).

<sup>79</sup> UN Fish Stocks Agreement, art 6(3)(d).

This provision is important in shark conservation because it gives states the authority to apply conservation measures to protect sharks and their critical habitats.

Peel indicates that mere invocation of the precautionary approach in policy or law will have little impact on practice unless substantive regulatory or management frameworks and measures are also applied.<sup>80</sup> The development of selective fishing gear and methods that reduces bycatch is recognised in FSA.<sup>81</sup> Measures to reduce shark bycatch are not substantially detailed in FSA itself, but there are provisions to ensure that measures to mitigate bycatch applied by fishing states reflect the latest science and technological research.<sup>82</sup> States are obliged under the Agreement to continually monitor the non-target species for which the status is a concern, and ensure ‘efficacy of conservation and management measures’ and ‘revise those measures regularly in light of new information’.<sup>83</sup> This is appropriate in ensuring that new research on shark bycatch mitigation is immediately applied into existing measures by coastal states.

A number of provisions in the Agreement relate specifically to minimising the adverse impact of fishing on non-target species through regional cooperative mechanisms. Some provisions also relate to specific flag and port state obligations in relation to bycatch mitigation. These are analysed below.

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<sup>80</sup> Peel, above n **Error! Bookmark not defined.**, 232.

<sup>81</sup> UN Fish Stocks Agreement, art 5(f).

<sup>82</sup> See a review of the latest science and technology to mitigate shark bycatch in Juan M. Molina and Steven J. Cook, ‘Trends in shark bycatch research: Current status and research needs’ (2012) *Rev. Fish Biol. Fisheries* 22, 719.

<sup>83</sup> UN Fish Stocks Agreement, art 6(5).

### ***2.2.3 Regional cooperation***

FSA clarifies the scope and content of regional cooperation under LOSC which has implications for shark bycatch and finning. It does this in a number of ways. First, all states that fish in the high seas, as well as coastal states, are required to cooperate in the conservation of these stocks. Cooperation is to be either direct or through appropriate mechanisms.<sup>84</sup>

Appropriate mechanisms for cooperation include developing regional fisheries management organisations (RFMOs) or arrangements. These must ‘take into account the specific characteristics of each subregion or region’ to enable effective conservation to take place.<sup>85</sup> An integral aspect of the obligation of party states to cooperate is the requirement that every RFMO which regulates straddling fish stocks and highly migratory species address a number of concerns. It must establish frameworks for scientific advice, including impact of fishing on non-target. Another concern is prescribing the standards for collecting and managing of fisheries data. Finally, appropriate cooperative mechanisms for effective monitoring, control, surveillance, and enforcement need to be established.<sup>86</sup>

It is apparent from these provisions that detailed data and information based of the straddling and highly migratory fish stocks is required, but there are no detailed data collection requirements for bycatch species, except catch, effort and catch

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<sup>84</sup> UN Fish Stocks Agreement, Art 7(1)(a).

<sup>85</sup> UN Fish Stocks Agreement, Art 8(1)(a).

<sup>86</sup> UN Fish Stocks Agreement, art 10.

composition.<sup>87</sup> The application of FSA in the central and western Pacific region is analysed in the next chapter on regional implementation. Additional provisions on bycatch relate to port state and flag state duties. Those that are explicitly related to the problem of bycatch are discussed below.

#### ***2.2.4 Monitoring and Enforcement***

FSA provides a number of enforcement measures relevant to RFMOs. Since finning occurs in the tuna fishing industry (or IUU fishing occurs for both tuna and sharks), enforcement of shark conservation and management in the same RFMOs. To ensure transparency in the activities RFMOs and arrangements, representatives from other bodies such as intergovernmental and non-government organisations can take part in meeting as observers. Representatives are also entitled to timely access to the records and reports within the RFMOs.<sup>88</sup>

Port state enforcement powers over fishing vessels have been significantly expanded by FSA. Article 23 (1-2) provides that a port state has the right and the duty to take measures, in accordance with international law, to promote the effectiveness of sub-regional, regional, and global conservation and management measures.

Observer programs can be designed as surveillance and/or scientific monitoring programs, and often involves a fisheries officer present on a fishing vessel during

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<sup>87</sup> UN Fish Stocks Agreement, art 6(b).

<sup>88</sup> UN Fish Stocks Art 12(2).

fisheries activities.<sup>89</sup> Their role is not to enforce fisheries legislation but to observe, record and report.<sup>90</sup>

### **2.3 The FAO Code of Conduct for Responsible Fisheries**

The FAO Code of Conduct for Responsible Fisheries was adopted in September 1995. The foundation of its development is LOSC, and it contains universal principles and standards for fisheries conservation and management.<sup>91</sup> It was formulated because additional measures to LOSC was required to control overexploitation of fisheries resources, especially on the high seas and in the case of straddling stocks within and outside EEZs.<sup>92</sup>

The FAO Code of Conduct remains a non-binding instrument designed to promote responsible fisheries, but may be considered as being in the process of gaining customary law status due to the adoption of various elements of the Code in regional and national legal instruments. Some of the provisions on fisheries management are referred to in other international instruments and have become mandatory to states that are a party to the referring instrument.<sup>93</sup> Examples include provisions relating non-target catch by states that fish in the high seas and the precautionary approach which are specifically referred to under FSA, Article 6 and made mandatory to party

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<sup>89</sup> Gus van Helvoort, *Observer Program Operations Manual* (FAO, 1986) iv.

<sup>90</sup> Ibid. The FAO Code of Conduct contains guidelines on minimising the capture of non-target species.

<sup>91</sup> David Douman, 'Coping with the Extended Vulnerability of Marine Ecosystems: Implementing the 1995 FAO Code of Conduct for Responsible Fisheries' (2007) 46 *Social Science Information* 193.

<sup>92</sup> FAO Code of Conduct, Preface.

<sup>93</sup> See Margarite Lizárraga, 'The Code of Conduct for Responsible Fisheries: Towards Implementation' (October, 1996) Paper presented at the South Asian Workshop and Symposium on

states. It represents guidelines for states to establish or improve the legal and institutional framework for responsible fisheries and implementation of appropriate measures.<sup>94</sup>

The FAO Code of Conduct recognises that the capacity of states varies in terms of monitoring the coastal environment, and so requires that states conduct monitoring in accordance with their capacities as part of the coastal management process.<sup>95</sup> Special requirements for developing states exist in the FAO Code of Conduct.<sup>96</sup> Research is supported and extends to include social, legal and institutional aspects. International governmental and non-governmental organisations and financial institutions are to consider the special circumstances of developing states, particularly SIDs, by the adoption of special measures to address these needs. Examples of measures include financial and technical assistance, technology transfer, training, and scientific cooperation.

## **2.4 FAO Plan of Action of Sharks**

The FAO Plan of Action on sharks is a voluntary agreement which is elaborated within the framework of the FAO Code of Conduct, Article 2 (d). The IPOA-Sharks encourages states to implement a national programme for conservation and management of sharks if their vessels operate a shark fishery or other fishery in which sharks are a bycatch. The IPOA contains detailed requirements of the National

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Fisheries and Coastal Area Management: Institutional, Legal and Policy Dimension, Madras, India, 26 September-2 October 1996 < <http://www.fao.org/DOCREP/006/AD373E/AD373E00.HTM>>

<sup>94</sup> FAO Code of Conduct, art 2(c).

<sup>95</sup> FAO Code of Conduct, art 10.2.4

<sup>96</sup> FAO Code of Conduct, art 5.2.



Plan of Action on Sharks (NPOA), including the need to incorporate the experience of existing RFMOs. Some state requirements related to NPOAs include:

- Regular stock assessment to determine the need for a NPOA.
- Data collection and made available to relevant RFMOs and FAO.
- International collaboration on data collection and data systems for highly migratory species.
- Inclusion of management measures and their effectiveness.

Compliance with IPOAs has been ‘low’ worldwide. Cook Islands and Marshall Islands have drafted NPOAs. A few additional states have included shark conservation and management measures as part of their tuna management plan or an additional plan. Reasons for low compliance are lack of political will, low priority status for fisheries due to their small economic contribution, and poor organisation of the fisheries sector.<sup>97</sup> Further, the potential for the development of an IPOA on sharks is minimal based on lack of political will, lack of economic priority status of sharks, and poor organisation of the fisheries sector to incorporate special measures for shark bycatch mitigation.<sup>98</sup> This is indicative of potential compliance issues with the FAO Guidelines on sharks.

LOSC, FSA and the FAO Code of Conduct and IPOA-Sharks are the primary instruments for bycatch mitigation. There are a number of provisions under LOSC and FSA which require states to mitigate the adverse impacts of fisheries on non-

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<sup>97</sup> FAO, Report on Progress of the Implementation of the Code of Conduct for Responsible Fisheries and Related International Plans of Actions (Committee on Fisheries, 2003) COFI/2003/3.

<sup>98</sup> Lugten, above n **Error! Bookmark not defined.**, 166.

target species. In this context, the FAO provides guidelines for implementing measures to mitigate shark bycatch. These should be adopted at regional and national levels depending on impact of fisheries in each state or region.

Together with the FAO Code of Conduct, the MEAs discussed below mainly provide measures for conserving and managing sharks from additional threats such as direct harvest and habitat damage. An overall analysis of the international legal framework for mitigating threats from bycatch, direct take and habitat damage is provided in the next chapter.

## **2.5 Convention on International Trade in Endangered Species of Wild Fauna and Flora, Washington, 1973 (CITES)**

### **2.5.1 Background**

CITES<sup>99</sup> came into force in 1973 and has 175 parties.<sup>100</sup> This convention provides measures to protect sharks from one of the key threats that affected sharks causing its decline. CITES contains provisions to prohibit or regulate direct harvesting for trade in globally endangered species or their products. International trade in sharks makes CITES a key convention for shark conservation and management. CITES Resolutions with application to sharks have been adopted since 1994, and revised periodically. In 2002, the FAO IPOA-Sharks were expected to become the key guiding document for managing shark finning. However, the slow uptake of the IPOA led to more policies

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<sup>99</sup> *Convention on International Trade of Endangered Species*, opened for signature 3 March 1973, 993 UNTS 244 (entered into force 31 December 1994).

<sup>100</sup> CITES Secretariat, *List of parties* <<http://www.cites.org/eng/disc/parties/alphabet.shtml>>

to evolve at CITES. The next section elaborates further on the principles that apply to shark conservation and management.

### ***2.5.2 Application to sharks***

Sharks are protected by a number of provisions in CITES. Few species of shark are listed in CITES under Appendix I and II since 2003. These include *Cetorhinus maximus*, *Rhincodon typus*, *Carcharodon carcharias* in Appendix II and *Pristidae* spp in Appendix I. In November 2012 at the 12<sup>th</sup> CITES Conference a majority of delegates voted to include *Rhincodon typus* (the famous whale sharks) and *Cetorhinus maximus* (basking sharks) in Appendix II. Negotiations to have these largest shark species were ongoing since 1994. A major reason for not listing many of the endangered shark species is the extensive lobbying of catching nations and fishing associations.

Species are listed in one of three appendices based on the impact of trade on their population status or survival. Species listed in Appendices II of CITES are those for which populations are at a risk of becoming threatened due to trade. No species of sharks are listed in Appendix I of CITES and so international trade of wild specimens are not prohibited. Trade is permitted for these species provided that it is not conducted in a manner that is detrimental to the species survival. Permits are required by the exporting state but not the importing state. There are fewer restrictions on states in regard to species listed in Appendix III compared with Appendices I and II.

## **2.6 Convention on Migratory Species of Wild Animals (CMS) or Bonn Convention**

### **2.6.1 Background**

The Convention on Migratory Species (CMS),<sup>101</sup> also known as the Bonn Convention, deals with the conservation of migratory species and the habitats on which they depend. The Secretariat of the CMS is administered by the United Nations Environment Programme (UNEP). CMS came into force in 1973 and has 116 member states, including parties from Africa, Central and South America, Asia, Europe, and Oceania.<sup>102</sup> Some key larger states that are rich in terms of biodiversity but are yet to become members include Brazil, Canada, China, Indonesia, Japan, Mexico, Oman, and the United States. South Pacific states that are a party include Australia, New Zealand, Cook Islands, Palau and Samoa.<sup>103</sup> Non-parties can participate in Memorandum of Understandings (MoUs) or other sub-agreements established under CMS, as explained in the next section.<sup>104</sup>

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<sup>101</sup> *Convention on Migratory Species of Wild Species*, opened for signature 23 June 1979 (entered into force 1983).

<sup>102</sup> Parties to the CMS and its Agreements as at 19 September 2011 (CMS, UNEP) <[http://www.cms.int/about/Partylist\\_eng.pdf](http://www.cms.int/about/Partylist_eng.pdf)>

<sup>103</sup> *Ibid.* There are many South Pacific island states participating in regional agreements established under CMS to protect specific species even though they are not yet parties to CMS. As at March 2011, participating states include Federated States of Micronesia (cetaceans), Fiji (cetaceans), Nauru (sharks), Niue (cetaceans), Papua New Guinea (sharks, cetaceans and dugongs), Solomon Islands (cetaceans and dugongs), Tonga (cetaceans), Tuvalu (cetaceans and sharks), and Vanuatu (cetacean and dugong).

<sup>104</sup> For example, Fiji has yet to ratify to CMS, but it has signed the CMS MoU for the Conservation of Cetaceans in the Pacific Islands Region.

### ***2.6.2 Application to sharks***

CMS aims to restore the migratory species concerned to a favourable conservation status or to maintain their status.<sup>105</sup> The definition of ‘migratory species’ under CMS includes:<sup>106</sup>

‘the entire population or any geographically separate part of the population of any species or lower taxon of wild animals, a significant proportion of whose members cyclically and predictably cross one or more national jurisdictional boundaries.’

A favourable conservation status is taken to exist under the following conditions:<sup>107</sup>

- Scientific evidence indicates that the species is being maintained at a viable level on a long term basis.
- The range of the species is not restricted.
- There is sufficient habitat to maintain population on a long-term basis, and
- Distribution and abundance of species approach historic coverage and levels to the extent that potential suitable ecosystems exist, and levels are also consistent with wise wildlife management.

These conditions provide criteria for range states to assess the conservation status of sharks. The rationale is that shark populations and associated ecosystems need to

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<sup>105</sup> CMS art II(1).

<sup>106</sup> CMS, art 1(1)(a).

<sup>107</sup> CMS, art 1(c)

be maintained over a long term. One of the main concerns in the implementation of the objective of CMS is the low membership of SIDs.<sup>108</sup>

### **2.6.2.1 Appendix I and II**

The Convention places species for which states need to endeavour to conserve and restore essential habitats in Appendix I. Species for which agreements for conservation needs to be developed are placed in Appendix II. Sharks are listed in both appendices. States are obliged to address adverse effects of activities that may impede migration, and other threats that endanger the species listed in Appendix I.<sup>109</sup> The taking of animals is prohibited with a few exceptions. Exceptions include taking for scientific purposes and to meet the needs of traditional subsistence users.<sup>110</sup> There is no specific reference to continued value of migratory species as small-scale socio-economic resources. In the context of Appendix II, agreements for conservation have to be based on population segments rather than the species as a whole, allowing for population-based conservation status to be determined.

CMS Article V provides comprehensive guidelines for agreements for migratory species conservation which focus on cooperation measures. The objective of such agreements is to restore species to a favourable conservation status or maintain it in such a status.<sup>111</sup> The whole range of the species must be covered and the instrument

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<sup>108</sup> ‘Why Should Small Island States Join CMS?’ (2008) UNEP/CMS.

<[www.cms.int/publications/pdf/SIDS\\_012006.pdf](http://www.cms.int/publications/pdf/SIDS_012006.pdf)>

<sup>109</sup> CMS, art III (4)(b).

<sup>110</sup> CMS, art III (5).

<sup>111</sup> CMS art V (1).

should be open to accession by all range states.<sup>112</sup> CMS requires states to develop coordinated conservation and management plans.<sup>113</sup> These provisions encourage states to cooperate in the conservation and management of sharks. Exchange of information, including research and statistics, on migratory species under established agreements is also mandatory.<sup>114</sup> CMS is advanced in that it specifically requires states to maintain a network of habitats favourable to migrating species.<sup>115</sup> The agreements should also provide procedures for coordinating action to suppress illegal taking.<sup>116</sup> Further, designated national authorities are needed for implementing agreements, monitoring effectiveness and establishing procedures for dispute settlement. These provisions provide an excellent basis for regional cooperative arrangement for conserving sharks.

#### **2.6.2.2 Membership**

Accession to CMS may be beneficial for the South Pacific because the convention is concerned with the protection of a wide variety of migratory species. Therefore, common habitat areas can be targeted worldwide to protect multiple endangered species such as seabirds, sharks and cetaceans, and all the South Pacific states that are parties under CBD are also obligated to do this. CMS allows for periodic review of the conservation status, coordinated management plans, information exchange, and

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<sup>112</sup> CMS art V (2). However, CMS Resolution 3.5 (COP 3, Geneva, Switzerland, 1991) states that agreements for migratory species conservation may not be able to cover the whole range of migratory species and be open to accession by all range states if this would adversely affect the conclusion or implementation of such an agreement.

<sup>113</sup> CMS art V (5) (b).

<sup>114</sup> CMS art V (5) (d).

<sup>115</sup> CMS art V (5) (f & g).

<sup>116</sup> CMS art V (5) (k).

recognition of the network of habitats in relation to migration routes. The latter supports regionally or internationally coordinated shark sanctuaries.

With a growing international and national focus on the conservation of migratory marine wildlife (particularly sharks and whales), SIDs in particular are being encouraged to become parties to CMS by the secretariat. Following the expected ratification of CMS by SIDs, changes to legislation will be a critical step towards shark conservation measures.<sup>117</sup>

## **2.7 The Convention on Biodiversity Conservation**

### **2.7.1 Background**

The Convention on Biological Diversity Conservation (CBD)<sup>118</sup> is derived from the 1992 United Nations Conference on Environment and Development (UNCED). The CBD entered into force in 1993. The objective is the conservation and sustainable use of biodiversity and the fair sharing of benefits arising from the utilisation of genetic resources.<sup>119</sup> There are 193 parties to this convention, including all South Pacific states.<sup>120</sup>

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<sup>117</sup> United Nation Environment Programme *CMS Accession Guidelines January 2006* <[http://www.cms.int/about/cmsMembership\\_howTo.pdf](http://www.cms.int/about/cmsMembership_howTo.pdf)>

<sup>118</sup> *Convention on Biological Diversity*, opened for signature 5 June 1992, 1760 UNTS 79 (entered into force 29 December 1993).

<sup>119</sup> CBD, art 1.

<sup>120</sup> CBD Secretariat, 'List of parties' <<http://www.cbd.int/information/parties.shtml>>



### 2.7.2 *Application to sharks*

The Convention is primarily concerned with biological diversity conservation through both species and habitat conservation. A holistic approach is applied with particular emphasis on marine parks.

The definition of biological diversity is provided in the convention:

‘...means the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems.’

States are obliged to identify ecosystems and habitats that are required by migratory species.<sup>121</sup> Threatened species are listed under the category ‘species and communities’.<sup>122</sup> Given the migratory nature of sharks and their threatened status, sharks are an important component of biological diversity under CBD. A number of articles under CBD are applicable to sharks. Articles 8 to 10 contain provisions for the conservation of their natural surroundings (that is, *in situ*),<sup>123</sup> conservation of shark outside their natural surrounding (that is *ex situ*)<sup>124</sup> and sustainable use.<sup>125</sup> Under CBD sustainable use refers to the use of components of biological diversity in

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<sup>121</sup> CBD, annex 1.

<sup>122</sup> *Ibid.*

<sup>123</sup> CBD, art 8.

<sup>124</sup> CBD art 9.

<sup>125</sup> Sustainable use measures are listed in CBD art 10.

a way that does not lead to a decline of biological diversity, thereby ‘maintaining its potential to meet the needs and aspirations of present and future generations’.<sup>126</sup>

#### 4.2.1.1 In situ conservation

Article 8 provides a number of measures that are applicable to shark conservation and management through a system of protected areas.<sup>127</sup> Further, states are to rehabilitate and restore threatened species through management plans or other strategies.<sup>128</sup> States are also to consider indigenous and local communities and their lifestyle where they are relevant for conservation and sustainable use of resources.<sup>129</sup>

CBD provides for states to enact legislations and/or other provisions to:

- regulate activities in protected areas;<sup>130</sup>
- protect threatened species;<sup>131</sup> and
- regulate processes and activities adversely affects biological diversity.<sup>132</sup>

These provisions provide for the establishment and regulation of protected areas for conserving sharks, mitigation of threats, implementation of relevant state legislations and plans, and the incorporation of societal values, especially traditional and lifestyle elements of local communities. Further, states are to cooperatively support developing states to meet the requirements of Article 8.

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<sup>126</sup> CBD art 2.

<sup>127</sup> CBD, art 8(a-c).

<sup>128</sup> CBD, art 8(f).

<sup>129</sup> CBD, art 8(j).

<sup>130</sup> CBD, art 8(c).

<sup>131</sup> CBD, art 8(k).

<sup>132</sup> CBD, art 8(l).

In the Ad Hoc Open-ended Working Group on Protected Areas in 2005, states agreed to address options for cooperation for the establishment of marine protected areas beyond national jurisdiction (ABNJ) and established a program within the framework of LOSC.<sup>133</sup> The COP to CBD actively promote conservation of biodiversity in ABNJ through the adoption of measures such as the United Nations Resolutions and the establishment of international and regional network of MPAs.<sup>134</sup>

This is important because of the high level of reptilian richness in the Pacific Ocean which makes it an important consideration for global biological diversity conservation on the high seas. This richness is partly attributed to sharks. There are currently no specific criteria or guidelines to ensure that coastal marine protected areas are established and sufficiently networked to protect distinct shark stocks.

#### **2.7.2.1 Ex situ conservation**

Under Article 9, states may complement in situ conservation measures by:

- adopting additional ex situ conservation measures;<sup>135</sup>
- establishing facilities for research;<sup>136</sup>
- regulating the collection of biological resources from natural habitats, except for research related to ex situ conservation; and
- promoting recovery and rehabilitation of threatened species and for their

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<sup>133</sup> UNEP, *Ad Hoc Open-ended Working Group on Protected Areas* (20 June 2005) UNEP/CBD/WG-PA/1/6, Annex I Recommendation 1/1.

<sup>134</sup> Decision VII/5 adopted by the Conference of Parties to the CBD at its 7<sup>th</sup> Meeting, Marine and Coastal Biodiversity, 9-14 February 2004, UNEP/CBD/COP/7/21.

<sup>135</sup> CBD, art 9(a).

<sup>136</sup> CBD, art 9(b).

reintroduction.<sup>137</sup>

Further, states are to cooperate in providing financial assistance and other support to developing states to develop such measures.<sup>138</sup> These measures are important for enabling further research to promote recovery efforts.

### **2.7.2.2 Sustainable use**

Article 10 provides for the integration of sustainable use into national decision-making processes.<sup>139</sup> Sustainable use includes customary uses which are consistent with ‘traditional cultural practices that are compatible with conservation or sustainable use requirements’.<sup>140</sup> Cultural utilisation of sharks which are endangered species cannot be ecologically sustainable from wild populations without applying conservation and management measures. However, the determination of sustainable use is a biological concept, and societal values associated with sharks means that sharks will continue to be harvested. Cooperation between government agencies and the private sector is encouraged for the development of methods for sustainable use, including areas beyond national jurisdiction or other matters of mutual interest.<sup>141</sup>

### **2.7.2.3 Harmonisation and integration of environmental strategies**

Under Article 5, states can cooperate through ‘competent international organizations, in respect of areas beyond national jurisdiction and on other matters of mutual interest’. Parties are obliged to develop national strategies for conserving and

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<sup>137</sup> CBD art 9(c).

<sup>138</sup> CBD, art 9(e).

<sup>139</sup> CBD, art 10(a).

<sup>140</sup> CBD, art 10(c).

<sup>141</sup> CBD, art 10(e).

sustainable utilisation of biological diversity, and integrate sectoral and cross-sectoral strategies.<sup>142</sup>

## **2.8 Summary and Conclusion**

States have a general obligation under LOSC, FSA, CITES, CBD and CMS to apply national measures to protect threatened species. This obligation is cross-cutting across all the key areas for protecting sharks. However, the provisions for the protection of threatened species do not provide an integrated compliance regime for states that is specific to sharks.

The law and policy obligations placed on parties that are relevant for conserving sharks can be categorised mostly into general principles and some specific measures. While a number of MEAs provided general principles applicable to sharks, only LOSC, FSA, CBD and CMS provided for specific law and policy measures directly applicable to the key areas.

Specific provisions in regard to implementing legislation under MEAs provide clear assessment criteria for assessing compliance in states. Lack of clear provisions with regard to implementing legislation (relevant to shark conservation principles) is indicative of difficulties in understanding the influence of MEAs on state compliance/non-compliance.<sup>143</sup>

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<sup>142</sup> CBD, art 6(a).

<sup>143</sup> Ibid.

Overall, international legal instruments provide a number of measures for conserving marine resources that could be applied in the context of sharks, but there were also a number of gaps which had implications for regional and national compliance. Gaps exist in all the four key areas for shark conservation management: direct harvests, bycatch and finning, habitat damage and regional cooperation.

Based on the discussion of the importance of MEAs in outlining measures for assessing tolerable levels of environmental harm in the context of sharks, it is apparent that the international framework falls short of providing a comprehensive set of minimum standards for mitigating threats to sharks according to the key areas. The exceptions are that the CMS provides specific implementing legislation on the regulation of traditional subsistence harvest, and management of protected areas. However, in the context of the latter, protected areas are designed for biological diversity protection and may not include significant shark habitats. Membership and participation in voluntary arrangements remain a key issue. Coordinated shark conservation strategies are necessary to conserve the entire habitat range of the sharks, and targeting all type of sharks from coastal to semi-pelagic and pelagic species.

International agreements provide a generic framework with specified objectives, such as to manage and conserve migratory fisheries resources, protect biodiversity in general, and prevent marine pollution. While these objectives appear to be helpful in terms of protecting sharks and their habitats, they are very highly dependent on state law and policies. For example, MPAs would satisfy objectives under one or more

MEAs, but they may do nothing to protect sharks if they do not utilise the MPA sufficiently. This shows how broad objectives under MEAs may or may not contribute to shark conservation.

There is potential for the importance of science in the international regimes to decline over time from agenda-setting stage due to governments and politics taking greater control of the process.<sup>144</sup> The gaps in the international environmental regime in terms of all conservation principles applicable to sharks show that this may be the case. This needs to be modified by the deliberate institutional design of the science-policy frameworks.<sup>145</sup> In this regard, the adoption of comprehensive national policies and regional cooperation arrangements for protecting sharks is important for states to adopt a coordinated and harmonised strategy for incorporating all conservation principles.

Compliance with legal and policy obligations derived from the international legal framework will be analysed at the regional level. The next chapter is an examination of the regional framework for conserving sharks.

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<sup>144</sup> Steiner Andresen and Jon Birger Skjærseth, 'Science and Technology' Ch. 9 in Jutta Brunnee, Daniel Bodansky and Ellen Hey, *The Oxford Handbook of International Environmental Law* (Oxford, 2007) 201.

<sup>145</sup> *Ibid.*

## **3 Pacific Islands Framework for Conserving Pacific Sharks**

### **3.1 Overview**

This chapter will examine cooperation and other regional measures for shark conservation and management in the South Pacific. The existing regional legal environmental framework of the South Pacific is analysed in terms of its application to shark conservation and management. This includes the doctrinal analysis of formalised regional agreements, guiding documents and responsibilities of implementing inter-governmental bodies. In Part II, formalised regional agreements specific to shark conservation and management are further evaluated in terms of implementation of obligations under MEAs.

There are no binding legal arrangements designed specifically to conserve sharks in the South Pacific. However, there are many principles under various MEAs that are applicable to shark conservation and management.

### **3.2 Background on the South Pacific**

Overall, the Pacific region has the most extensive coral reef system in the world, the largest tuna fishery, and the healthiest remaining global populations of many



marine species such as whales and sharks.<sup>146</sup> Of particular importance in marine conservation is the limited human and financial capacity for governments to monitor the health of the environment.<sup>147</sup> A recent Pacific Island marine biodiversity status report reaffirmed that there is a lack of human, technical, institutional and financial capacity in the region that compromise national and regional efforts to conserve and manage the marine environment.<sup>148</sup>

In 2010, a number of key marine environmental concerns in the Pacific Islands were identified. These include climate variability and climate change, habitat loss and the effects of coastal modification, invasive species, fishing pressure, increased sedimentation and nutrient loading and other forms of land-sourced and marine pollution.<sup>149</sup> Threats to sharks are intertwined with these matters.

### ***3.2.1 Need for regional cooperation***

A regional institutional framework has been adopted in the South Pacific because of the need for international cooperation under LOSC. There are overlapping geopolitical and ecological boundaries among the majority of SIDs in the South Pacific due to overlapping EEZs.<sup>150</sup> Many of the common environmental concerns among SIDs, such as coastal degradation, occur in areas that are outside the EEZ regime.

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<sup>146</sup> UNESCO, 'World Heritage Papers 4' in Annie Hillary, Marjaan Kokkonen and Lisa Max (ed) *Proceedings of the World Heritage Marine Biodiversity Workshop*, Hanoi, February 25 – March 1, 2002 35.

<sup>147</sup> Tamari'i Tutangata and Mary Power, 'The regional scale of ocean governance regional cooperation in the Pacific Islands' (2002) 45 *Ocean & Coastal Management* 876.

<sup>148</sup> Kinch et al *Outlook Report on the State of Marine Biodiversity in the Pacific Region* (SPREP and UNEP, 2010), 38.

<sup>149</sup> *Ibid*, 6.

<sup>150</sup> Martin Tsamenyi, 'The institutional framework for regional cooperation in the ocean and coastal management in the South Pacific' (1999) 42 *Marine Policy* 465.

This shows that regional cooperation applies to common concerns across all maritime jurisdictions.

### **3.3 Regional Governance Framework in the South Pacific**

The regional agreement for environmental protection in the region is the Convention for the Protection of the Natural Resources and Environment of the South Pacific Regions (The Noumea Convention).

#### ***3.3.1 The Convention for the Protection of the Natural Resources and Environment of the South Pacific Regions (The Noumea Convention)***

The Convention for the Protection of the Natural Resources and Environment of the South Pacific Regions (The Noumea Convention),<sup>151</sup> which entered into force in 1987, is the overarching regional environmental framework for the South Pacific.<sup>152</sup> This Convention has been ratified by 15 states.<sup>153</sup> Pacific states that have yet to ratify are Kiribati, Niue, Solomon Islands, Tonga and Vanuatu.<sup>154</sup>

##### **3.3.1.1 Principles applicable to sharks**

Under the Noumea Convention, parties are obliged to cooperate regionally through bilateral or multilateral agreements (including regional and sub-regional) for the protection of the marine environment.<sup>155</sup> The scope of Convention, however, excludes

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<sup>151</sup> Convention for the Protection of the Natural Resources and Environment of the South Pacific Regions (The Noumea Convention), open for signature 25 November 1986 (entered into force 28 May 1987) 16 ILM 38.

<sup>152</sup> Noumea Convention, art 4.

<sup>153</sup> SPREP, Regional Conventions <<http://www.sprep.org/legal/regional.htm>>

<sup>154</sup> Ibid.

<sup>155</sup> Noumea Convention, art 4.

internal waters and archipelagic waters.<sup>156</sup> However, the scope includes the rest of the coastal and marine areas, including pockets of high seas that are enclosed within the EEZs of states.<sup>157</sup>

A number of measures under the Noumea Convention promote harmonised protection of endangered species and their habitats at the regional level. Article 14 provides for states to ‘take all appropriate measures to protect and preserve’ threatened or endangered species and their habitats. States are obliged to take ‘all appropriate measures’ to ensure ‘sound environmental management’ and in doing so, harmonise their policies at the regional level.<sup>158</sup> States are obliged to establish (either individually or jointly) special protected areas and prohibit or regulate activities that adversely affect endangered species, ecosystems or biological processes in such areas.<sup>159</sup> The Convention further states that parties shall ‘exchange information concerning the administration and management of such areas’.<sup>160</sup> These provisions account for some of the gaps in the international framework in the context of sharks. States are also to take into account international standards, practice and procedures and cooperate with global and regional organisations to adopt measures to promote sustained resource management.<sup>161</sup> This includes cooperation measures for providing technical or other assistance related to pollution control or environment management,<sup>162</sup> and scientific and technical research and monitoring.<sup>163</sup>

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<sup>156</sup> Noumea Convention, art 1.

<sup>157</sup> Noumea Convention, art 1 and 2. See also art 49(1) regarding coastal and marine areas.

<sup>158</sup> Noumea Convention, art 5(1).

<sup>159</sup> Noumea Convention, art 14.

<sup>160</sup> Noumea Convention, art 14.

<sup>161</sup> Noumea Convention, art 5(4).

<sup>162</sup> Noumea Convention, art 18.

<sup>163</sup> Noumea Convention, art 17.

### 3.4 Implementation framework

Regional inter-governmental organisations (IGOs), non-governmental organisations (NGOs) and related regional plans/policies constitute the regional framework for the implementation of regional commitments, and are analysed in the next section. Regional inter-governmental organisations range from those that are political and economic, such as the Pacific Islands Forum (PIF), to specialised bodies that have been established to address specific matters, such as the fisheries, non-living resources, environment, agriculture and health, and tertiary education. NGOs in the region are also important in terms of administering programs for conservation and management.<sup>164</sup>

The Secretariat of the Pacific Islands Regional Environment Programme (SPREP)<sup>165</sup> and the World Wide Fund for Nature South Pacific Programme (WWF) are the main regional organisations that have been actively promoting marine conservation in the Pacific Islands region. Other key regional institutions like the Secretariat of the Pacific Community<sup>166</sup> (SPC) and the Western Central Pacific Fisheries Commission (WCPFC) under FFA are instrumental in regional fisheries

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<sup>164</sup> NGOs include World Wildlife Fund for Nature, Conservation International and IUCN. These have set up regional offices in the South Pacific, mainly based in Suva, Fiji.

<sup>165</sup> Established under the *Convention for the Protection of Natural Resources and Environment of the South Pacific Region and Related Protocols*, opened for signature 25 November 1986 (entered in force 22 August 1990). Members of SPREP include American Samoa, Australia, Cook Islands, Federated States of Micronesia, Fiji, France, French Polynesia, Guam, Kiribati, Marshall Islands, Nauru, New Caledonia, New Zealand, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, United States of America, Vanuatu and Wallis and Futuna. <[www.sprep.org/legal/documents/NoumeaConvProtocols.doc](http://www.sprep.org/legal/documents/NoumeaConvProtocols.doc)>

management context. The regional oceans policy clarifies the regional context for ocean resource management, discussed below.

### ***3.4.1 Pacific Islands Forum (PIF)***

The South Pacific region consists of members of the Pacific Islands Forum (PIF). PIF is the political grouping of 16 independent and self-governing states in the South Pacific. It was established in 1971 to develop a collective response to regional issues.<sup>167</sup> The Secretary General of PIF is also the Chair of the Council of Regional Organisations in the Pacific (CROP).<sup>168</sup> Ten geopolitical and technical agencies under CROP are mandated by Pacific Island Forum Leaders to implement specific regional initiatives to assist in sustainable development.<sup>169</sup> A series of cross-agency sectoral working groups ensure collaboration on regional issues and activities.

### ***3.4.2 Secretariat of the Pacific Islands Regional Environment Programme (SPREP)***

SPREP is the regional implementation agency for the Action Plan for Managing the Natural Resources and Environment of the South Pacific Region under the

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<sup>166</sup> Secretariat of the Pacific Community, formerly known as the South Pacific Commission, was founded under the Canberra Agreement in 1947, Australian Treaty Series 15. <[www.spc.int/coastfish/canberra.htm](http://www.spc.int/coastfish/canberra.htm)>

<sup>167</sup> Australia, Fiji, Cook Islands, Nauru, New Zealand, Samoa and Tonga were founding members. Federated States of Micronesia, Palau, Kiribati, Papua New Guinea, Solomon Islands, Vanuatu, Tuvalu, Marshall Islands and Niue.

<sup>168</sup> For further information, see Corporate Plan 2008 – 2012, PIF <<http://www.forumsec.org/resources/uploads/attachments/documents/Forum%20Corporate%20Plan%20FINAL%20FINAL.pdf>>

<sup>169</sup> The CROP agencies relevant to shark conservation include PIF, Pacific Islands Forum Fisheries Agency (FFA), Pacific Islands Development Programme (PIDP), and Secretariat for the Pacific Community (SPC), South Pacific Board for Educational Assessment (SPBEA), South Pacific Regional Environment Programme (SPREP), South Pacific Tourism Organisation (SPTO), South Pacific Applied Geoscience Commission (SOPAC) and University of the South Pacific (USP). See generally Pacific Island Forum Secretariat ‘CROP’ Available at <http://www.forumsec.org.fj/pages.cfm/about->

*Convention for the Protection of Natural Resources and Environment of the South Pacific Region (Noumea Convention).*<sup>170</sup> In 2012, SPREP included a shark action plan on areas not covered by the joint PI-RPOA.

### **3.4.3 Forum Fisheries Agency**

The roles of SPC and FFA include awareness raising and training of commercial fishers in bycatch avoidance and in techniques for releasing sharks alive if caught. FFA coordinates subregional workshops, preparatory meetings for the WCPFC Scientific Committee and Technical Committee meetings and FFA meetings so that all its 17 members have information and discussions to prepare for their participation in the WCPFC at its annual meetings. This support is an important part of FFA's ongoing efforts to increase national capacity and strengthen regional solidarity so that member countries can manage their fisheries for the benefit of people today and for future generations. The WCPFC is established under the Western and Central Pacific Fish Stocks Convention, described later.

## **3.5 Regional Ocean Policies**

### **3.5.1 Pacific Islands Regional Oceans Policy (PIROP)**

PIROP is the first oceans policy framework that has been developed at a regional scale.<sup>171</sup> The development of the policy was endorsed by Forum Leaders in 1999.<sup>172</sup>

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us/crop/; See also discussion Martin Tsamenyi, 'The institutional framework for regional cooperation in the ocean and coastal management in the South Pacific' (1999) 42 *Marine Policy* 465-481.

<sup>170</sup> Agreement Establishing the South Pacific Regional Environment Programme, opened for signature 16 June 1993, 1982 UNTS 4 (entered into force 31 August 1995). This Convention includes 19 Parties from throughout the Southwest Pacific Ocean: Australia, Cook Islands, Federated States of Micronesia, Fiji, France, Kiribati, Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New

The development of the regional policy was a four year process, completed in 2004. Through PIROP, the region has an agreed reference point for developing and presenting regional positions at the international level.<sup>173</sup> The goal of the PIROP is to ‘ensure sustainable use of our ocean and its resources by Pacific Island communities and partners’.<sup>174</sup> The policy adopts five guiding principles:<sup>175</sup>

- improving our understanding of the oceans;
- sustainably developing and managing the use of ocean resources;
- maintaining the health of the ocean;
- promoting the peaceful use of the ocean; and
- creating partnerships and promoting cooperation.

The five principles commit Pacific Island nations to meet national obligations under the United Nations Millennium Development Goals on environmental sustainability, reduction of poverty, improving health and livelihood of the people.<sup>176</sup> Due to the high dependence of the region on donor funding, the principles are also to encourage the international community to guide development in this context.<sup>177</sup>

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Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, United Kingdom, United States, and Vanuatu. <<http://sedac.ciesin.org/entri/texts/natural.resources.south.pacific.1986.html>>

<sup>171</sup> Pacific Islands Regional Ocean Forum Communiqué, *The Pacific Islands Regional Oceans Policy – From Policy to a Framework for Integrated Strategic Action*, 2-4 February 2004.

<sup>172</sup> Endorsed at the 30<sup>th</sup> Pacific Island Forum Meeting, 3-5 October 1999, Koror.

<sup>173</sup> Pacific Islands Regional Ocean Forum Communiqué, *The Pacific Islands Regional Oceans Policy – From Policy to a Framework for Integrated Strategic Action*, 2-4 February 2004.

<sup>174</sup> Ibid 8.

<sup>175</sup> Ibid 5.

<sup>176</sup> See generally United Nations Millennium Development Goals (United Nations) <<http://www.un.org/millenniumgoals/>>

<sup>177</sup> Pacific Islands Regional Ocean Forum Communiqué, *The Pacific Islands Regional Oceans Policy – From Policy to a Framework for Integrated Strategic Action*, 2-4 February 2004

Concurrent with the development of PIROP, Forum Leaders called for follow-up actions, including the development of a Framework of Integrated Strategic Action to implement PIROP. PIROP's Framework of Integrated Strategic Action (PIROP-FISA) was endorsed by a newly formed Pacific Islands Regional Oceans Forum in 2002.<sup>178</sup> The Oceans Forum consisted of state governments, development partners, non-state actors, private sector and civil society representatives. The implementation strategy was released in 2004 and aimed to assist in the implementation of PIROP.<sup>179</sup>

PIROP-FISA identifies the need for a central coordinating agency to streamline marine sector development and conservation to achieve the aspirations of PIROP through national ocean policies.<sup>180</sup> National ocean policies were intended as the outcome of state and local community stewardship and ownership objectives of PIROP-FISA.<sup>181</sup> However, implementation of PIROP under FISA has been limited by lack of funding and resources at the regional and national levels.<sup>182</sup> To date, national oceans policies have not been developed among the majority of states. This reflects a lack of political will to implement national programs that may conflict with sectors supporting national economic growth.<sup>183</sup>

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<sup>178</sup> Pacific Islands Regional Ocean Forum Communiqué, 2-4 February 2002, Suva, Fiji.

<sup>179</sup> Pacific Islands Regional oceans Policy and Framework for Integrated Strategic Action (Marine Sector Working Group, CROP, 2004), 9 <<http://map.sopac.org/data/virlib/JC/JC0188.pdf>>

<sup>180</sup> Ibid 10.

<sup>181</sup> Ibid.

<sup>182</sup> Laurence Cordonery, 'Implementing the Pacific Islands Regional Oceans Policy: How difficult is it going to be?' (2005)36 *Victoria University of Wellington Law Review* 728.

<sup>183</sup> Pio Manoa and Joeli Veitayaki 'Regional ocean governance in the Pacific revisited' (2009)23 *Ocean Yearbook* 503.



Donor assistance and NGOs projects are usually targeted to specific objectives,<sup>184</sup> but not necessarily shark conservation projects. There is also potential for conflicts of interests between donor and state interests, such as between states and their donor agencies that also have fishing interests in the region.<sup>185</sup>

Since the release of FISA in 2002, a number of key developments in marine biodiversity conservation have occurred this contributed to an updated regional framework. In 2006, the 8<sup>th</sup> Conference of Parties to CBD encouraged the establishment of marine protected ABNJs (or high seas MPAs).<sup>186</sup> A UN consultative process on oceans and LOSC in 2006 also invites states to implement an ecosystem-based approach through the establishment of marine protected ABNJ and the elimination of destructive fishing practices.<sup>187</sup> In 2008, scientific criteria for MPAs and representative networks of MPAs were adopted at COP 9.<sup>188</sup> In 2008, a United Nations General Assembly Ad Hoc working group acknowledged an urgent need for the implementation of existing agreements on conservation and sustainable use of marine biological diversity on ABNJ.<sup>189</sup> Developments in marine biodiversity conservation at the international level together with regional and national conservation aspirations have led to the development of an updated framework for

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<sup>184</sup> The main donors in the South Pacific are Australia, USA, China and New Zealand. See Roland Seib, *China in the South Pacific: No New Hegemon on the Horizon*, PFIF-Reports No. 90 (Peace Research Institute, 2009) 15.

<sup>185</sup> Quentin Hanich and Martin Tsamenyi, 'Managing fisheries and corruption in the Pacific Islands region' (2009) 33 *Marine Policy* 386.

<sup>186</sup> COP 8 held 20-31 March 2006, Curitiba, Brazil.

<sup>187</sup> *UN Open-ended Informal Consultative Process on Oceans and the Law of the Sea A/61/156*.

<sup>188</sup> COP 9 held 19-20 May 2008, Bonn.

<sup>189</sup> *UN General Assembly Ad Hoc Open-ended Informal Working Group on Conservation and Sustainable Use of Marine Biological Diversity in Areas Beyond National Jurisdiction* held April-May 2008.

implementing the guiding principles under PIROP in 2010. This is through the Pacific Oceanscape.

### ***3.5.2 Pacific Oceanscape***

In August 2010, 15 states endorsed a draft Pacific Oceanscape framework which is guided by PIROP principles.<sup>190</sup> The framework covers the largest marine area in the world, an area of 38.5 million square kilometres of ocean. The framework was designed to mitigate increasing threats to the integrity of the marine environment, particularly climate change. The concept of Pacific Oceanscape was initiated in response to the need for collective efforts, principally through a series of Pacific Ocean Arcs or large-scale MPAs.<sup>191</sup>

The Pacific Oceanscape aims to implement, inter alia, strategies for adapting to climate change impacts, multiple user management in MPAs, and ocean security. Overall, the priorities for national implementation are targeted towards sustainable activities.<sup>192</sup> Sustainable activities can equate to more opportunities for the development of socio-economic activities in coastal communities than provided under the Pacific Plan prior to Pacific Oceanscape. Further, Forum Leaders have given the Pacific Oceanscape priority under the Pacific Plan.<sup>193</sup> This is an important decision because the Pacific Plan reflects the region's priorities consistent with and in support

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<sup>190</sup> Forum Communiqué, Forty-First Pacific Islands Forum, Port Vila 4-5 August 2010. Countries include Australia, the Cook Islands, the Federated States of Micronesia, the Republic of Kiribati, Nauru, New Zealand, Niue, Palau, Papua New Guinea, the Republic of Marshall Islands, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu.

<sup>191</sup> President Anote Tong (Kiribati), 'Pacific Oceanscape: A secure future for Pacific Island Nations based on ocean conservation and management', Pacific Island Leaders Meeting.

<sup>192</sup> Ibid 9.

of international frameworks. It provides a platform for regional cooperation guiding collective positions through international forums that advocate the special case of SIDs.

Pacific Island leaders must ensure that lack of political will does not impede regional shark conservation and management efforts. The Pacific Oceanscape addresses political will in a more general context. This is by promoting stewardship at local, national, regional and international levels. Political will is addressed through clear directives (including an outlook on financial aid), the scope for integrating the framework into the Pacific Plan, and through the integration of sustainable ocean management into national development plans.

The Pacific Oceanscape does not provide strategies for key areas that are important in shark conservation such as strengthening fisheries and conservation legislation.<sup>194</sup> Conservation of threatened migratory species such as sharks and cetaceans are not given any special consideration or priority, except protection that may ensue from large-scaled MPAs.

Limitations of SIDs are addressed in the Pacific Oceanscape concept, particularly through its strategy for sustained action and cost effectiveness. Long term and coordinated funding will be required to complete implementation. One of the key

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<sup>193</sup> The Pacific Plan: For Strengthening Regional Cooperation and Integration. See <[http://www.forumsec.org.fj/resources/uploads/attachments/documents/Pacific\\_Plan\\_Nov\\_2007\\_version.pdf](http://www.forumsec.org.fj/resources/uploads/attachments/documents/Pacific_Plan_Nov_2007_version.pdf)>

<sup>194</sup> See generally Jeff Kinch 'Summary Report on the Status of Coastal Fisheries in the Southern Pacific Island Countries and Territories', Regional Workshop on Ecosystem Approach to Management of Coastal Fisheries in Pacific Islands, 17-21 November 2008.

priorities under the Pacific Oceanscape concept is discovering financial mechanisms to assist institutional set-up and processes arising from implementation, both regionally and nationally.

Implementation of the framework in the Pacific Islands may be dynamic and complex because at the core of the regional policy implementation are two governance regimes, 1) domestic implementation by states, and 2) regional implementation by intergovernmental organisations. However, there has not been a formal review and gap analysis of existing regional projects for the Pacific Oceanscape to be implemented. This can potentially also be reflected in shark conservation activities in the region given that there is no regional framework to guide IGOs and NGOs involved in shark conservation.

Regional and national cost-effectiveness may be achieved if the framework objectives can be more carefully aligned to ongoing and emerging regional projects where synergies exist (such as coastal fisheries and poverty alleviation) and close gaps through new or modified projects. Synergies can occur in national level programs, CROP agencies and NGOs, even through collaborative efforts. Implementation of strategies by utilising prevailing synergies can minimise duplication of efforts and strengthen ongoing initiatives that are relevant.

### ***3.5.3 The Western and Central Pacific Fish Stocks Convention***

The Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (Western and Central Pacific Fish

Stocks Convention)<sup>195</sup> concluded in September 2000, and is one of two regional Conventions<sup>196</sup> negotiated to give effect to FSA.

The objective of the Western and Central Pacific Fish Stocks Convention is to ‘ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks in the western and central Pacific Ocean’.<sup>197</sup> This objective of the agreement is consistent with the obligation of states to cooperate through RFMOs to conserve and manage migratory fish stocks under FSA.<sup>198</sup>

The Western and Central Pacific Fish Stocks Convention entered into force on 19 June 2004. The area of application of the Western and Central Pacific Fish Stocks Convention is defined broadly in Article 3(1) to include the geographical range of highly migratory tuna stocks in the western and central Pacific region.

The Commission for the Conservation and Management of Highly Migratory Fish Stocks (WCPFC) in the Western and Central Pacific Ocean is established under the Convention.<sup>199</sup> All state parties to the Convention are members of the Commission,<sup>200</sup> although other states with an interest in the fishery, or whose vessels fish or intend to

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<sup>195</sup> Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (Western and Central Pacific Fish Stocks Convention), opened for signature 5 September 2000, 2275 UNTS, 111 (entered into force 19 June 2004).

<sup>196</sup> The other is the South East Atlantic Fisheries Organization (SEAFO). For a discussion, see Are K. Sydnés, ‘New regional fisheries management regimes: Establishing the South East Atlantic Fisheries Organization’ (2001) 25 *Marine Policy* 353.

<sup>197</sup> Western Central Pacific Fish Stocks Convention, art 2.

<sup>198</sup> UN Fish Stocks Agreement, art 7(1)(a).

<sup>199</sup> Western Central Pacific Fish Stocks Convention, art 9.

<sup>200</sup> Members of the Commission include Australia, Canada, China Cook Islands, European Community, Federated States of Micronesia, Fiji, France, Japan, Kiribati, Korea, Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Tonga,

fish in the Convention Area, may be given the status of cooperating non-members.<sup>201</sup> For example, the Convention allows for the full participation of Taiwan in the Convention as a Fishing Entity.<sup>202</sup>

The Commission may access a Special Requirements Fund to assist developing state members in implementing the Guidelines.<sup>203</sup> A total of about USD6 million was proposed for WCPFC's work program for 2012.<sup>204</sup> The source of the funds was included contributions from Commission members and cooperating non-members; the largest assessed contributions (based on catch and national wealth) are from the US and European Union.<sup>205</sup>

#### ***3.5.4 Application to sharks***

The Commission is assigned a number of functions and those of direct relevance to the conservation of sharks include:

- adoption, where necessary, of conservation and management measures and recommendations for non-target species and species dependent on or associated with the target stocks, with a view to maintaining or restoring populations of such

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Tuvalu United States of America and Vanuatu. French Polynesia, New Caledonia, Wallis and Futuna and Tokelau are participating territories.

<sup>201</sup> Western and Central Pacific Fish Stocks Convention, *Conservation and Management Measure 2008-03*, adopted 12 December 2008 (entered into force 10 February 2009). Cooperating non-members include Belize, Indonesia, Senegal, Mexico and El Salvador.

<sup>202</sup> Annex 1 to the Western and Central Pacific Fish Stocks Convention.

<sup>203</sup> *Proposed Budget for the Commission's Work Programme for the Financial Period 01 January to 31 December 2012 and Indicative Budgets for 2013 and 2014*, WCPFC8-2011-FAC 5/12, Western and Central Pacific Fisheries Commission 6<sup>th</sup> Regular Session, Apia, Samoa, 15 November 2011.

<sup>204</sup> Ibid, Annex 1.

<sup>205</sup> Ibid.

species above levels at which their reproduction may become seriously threatened;<sup>206</sup>

- adoption of generally recommended international minimum standards for the responsible conduct of fishing operations;<sup>207</sup> and
- discussion of any question or matter within the competence of the Commission and adoption of any measures or recommendations necessary for achieving the objective of this Convention.<sup>208</sup>

The Western and Central Pacific Fish Stocks Convention enhances the conservation of sharks in the western and central Pacific Ocean. This Convention gives expression to LOSC and FSA within the Western and Central Pacific region through regional cooperation for the management of living marine resources, in particular to reduce the impact of fisheries on associated bycatch (sharks).

The conservation and management functions of the Commission allow it to make binding decisions with regard to the conservation of sharks. Conservation and Management Measures (CMM) are binding on all members; whereas, Resolutions are non-binding.<sup>209</sup> In 2008, the Commission first adopted the CMM 2008-06 which has since been replaced twice based on constant review with CMM 2010-07. This is a best practice example of regulative action take to formalise non-binding measures specific for shark conservation. However, a coping strategy for the inherently changing guidelines will be required due to continual progress in bycatch mitigation.

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<sup>206</sup> Western and Central Pacific Fish Stocks Convention, art 10(1)(c).

<sup>207</sup> Western and Central Pacific Fish Stocks Convention, art 10(1)(h).

<sup>208</sup> Western and Central Pacific Fish Stocks Convention, art 10(1)(o).

For example, the PI-RPOA released in 2009 refers to the older CMM 2008-06 which has been replaced with improvements in ecological risk assessment. It is expected that with further improvements in science and management policies, future CMMs will reflect these in a timely manner.

The conservation and management measure for sharks obliges parties to incorporate international scientific findings on reducing shark bycatch in fisheries operations to date. The measure also requires that Commission members annually report on the progress of implementation of FAO Guidelines and the measure, including information on shark interactions in the fisheries operations in the Convention Area.

Under Article 23(1) of the Convention, each member of the Commission is required to promptly implement the provisions of the Convention and any conservation, management and other measures or matters that may be agreed upon from time to time.

#### *3.5.4.1.1 Bycatch, data shortage and precautionary approach*

One of the main issues in fisheries management is lack of data and information on bycatch in tuna fisheries.<sup>210</sup> FSA the Convention contains provisions that relate to the application of the precautionary approach in fisheries management which may deal

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<sup>209</sup> Western and Central Pacific Fish Stocks Convention, WCPFC/Comm2/29 (14 December 2005).

<sup>210</sup> See Davies et al, 'Defining and estimating global marine fisheries bycatch' (2009) 33 *Marine Policy* 661.



with issues of uncertainties in bycatch risks. In accordance with Annex II paragraph 4 of FSA:

‘[m]anagement strategies shall seek to maintain or restore populations of harvested stocks, and where necessary associated or dependent species, at levels consistent with previously agreed precautionary reference points.’<sup>211</sup>

Since sharks are captured in tuna fisheries, they are an ‘associated species’ for the purpose of assigning precautionary reference points.<sup>212</sup> In applying the precautionary approach, members of the Commission are to take into account uncertainties relating to the impact of fishing activities on non-target and associated or dependent species.<sup>213</sup> According to this provision, states must ensure that the impact of fisheries on shark bycatch is regulated by setting limits of numbers of sharks caught. Precautionary reference points for target species are not determined taking into account bycatch under the Convention.

Fishing states are required to monitor and review the status of non-target species that are of concern to Commission members, and improve conservation and

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<sup>211</sup> Western and Central Pacific Fish Stocks Convention, Article 6 (1) obliges members of the Commission, in applying the precautionary approach, to apply the guidelines set out in Annex II of the Agreement, which shall form an integral part of this Convention.

<sup>212</sup> FSA does not define associated species. In Jean-Jacques Maguire, *The State of World Highly Migratory, Straddling and Other High Seas Fishery Resources and Associated Species* (FAO, 2006) section 2.2, ‘associated and dependent species are caught and/or impacted in fisheries for straddling fish stocks, highly migratory fish stocks, and high seas fish stocks. Since any landed catch that is not from a straddling fish stock or highly migratory fish stock may be regarded as from high seas fish stocks, this review considers associated species as impacted species that are not part of the landed catch.’

<sup>213</sup> Western and Central Pacific Fish Stocks Convention, Article 6 (1b).

management measures.<sup>214</sup> However, there are limited provisions for data collection related to bycatch. This gap in the legal framework for fisheries management was also identified in FSA.

Precautionary reference points for sharks are difficult to determine because there are bycatch data deficiencies and the multiplicity of bycatch species – as already discussed. However, bycatch limits or species biodiversity indices are some examples of measures that can be used as precautionary reference points.<sup>215</sup> Even in the absence of precautionary reference points (to be determined by nations), the region needs to ensure that shark populations are not further endangered by tuna fishing operations. In applying the precautionary approach, members of the Commission are also required to:

‘develop data collection and research programs to assess the impact of fishing on non-target and associated or dependent species and their environment, and adopt plans where necessary to ensure the conservation of such species and to protect habitats of special concern.’<sup>216</sup>

The Commission is able to monitor the impact of tuna fisheries on sharks (catches, discards alive, discards dead, retained) and the efficacy of conservation and management measures in minimising impacts of tuna fisheries on sharks through an observer program. The Pacific Island Regional Fisheries Observer (PIRFO) program has been developed through collaboration among SPC, FFA and WCPFC.

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<sup>214</sup> Western and Central Pacific Fish Stocks Convention, Article 6 (4).

<sup>215</sup> See Daniel Hoggarth et al, *Stock Assessment for Fishery Management: A Framework Guide to the Stock Assessment Tools of the Fisheries Management Science Programme* (FAO, 2006) 73-5.

<sup>216</sup> Western and Central Pacific Fish Stocks Convention, Article 6 (1c).

Under PIRFO, shark bycatch data is recorded by trained scientific observers placed on offshore tuna vessels<sup>217</sup> operating in the Pacific Islands. The Commission is obliged to annually review the observer program based on appropriate recommendations from subsidiary bodies, which should lead to gradual improvements in observer coverage. However, the observer coverage has improved from one per cent in the 1990s to six per cent in 2011.<sup>218</sup> Observer data is useful for research on bycatch mitigation, and comparing trends in the Western and Central Pacific subregions to locate shark hotspots.

Flag states must ensure that all vessels flying their flag accurately record and report catch and effort data for both target species and non-target species, and provide them to the Commission in a timely manner.<sup>219</sup> The regional observer program established by the Commission could be used to assess catches and discards of sharks and finning in tuna fishery catches and the impact of different techniques and gear on shark bycatch.<sup>220</sup> Fisheries observers, trained by regional organisations, could be systematically placed on fishing vessels to record fisheries activities, especially non-target species interactions.

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<sup>217</sup> The tuna fishery in the Western and Central Pacific is very large on the global scale; it alone accounts for two thirds of the global tuna catch, and is valued at USD 1.5 to 2 billion per year (*Tuna Development and Management Plan* (Fiji) (Department of Fisheries, 2001)).

<sup>218</sup> SPC & FFA, *Pacific Islands Regional Fisheries Observer (PIRFO) Debriefing Policy* (2006) 3.

<sup>219</sup> Western and Central Pacific Fish Stocks Convention, Annex III Article 5.

<sup>220</sup> Western and Central Pacific Fish Stocks Convention, Article 28 (6e): ‘the activities of observers shall include collecting catch data and other scientific data, monitoring the implementation of conservation and management measures adopted by the Commission and reporting of their findings in accordance with procedures adopted by the Commission.’

The Commission is also obliged to cooperate and collaborate regionally and internationally to meet its objectives.<sup>221</sup> The Convention allows, in the interests of transparency, for the participation of intergovernmental organisations and non-governmental organisations as observers at meetings of the Commission and its subsidiary bodies. Such bodies may also report on the impact of tuna fishing on sharks within the Convention Area.<sup>222</sup> Independent observers to the WCPFC Meetings include FFA, SPC, SPREP, PIF, USP, Greenpeace, Pacific Islands Tuna Industry Association (PITIA) and WWF. However, the Commission needs to allow active participation by environmental and conservation groups to ensure that these interests are not sidelined by fisheries interests.

### ***3.5.5 The Pacific Islands Regional Plan of Action on Sharks (PI-RPOA)***

The PI-RPOA is a guideline for conserving and managing sharks in Pacific Island states and is non-binding. It is the first regional POA on sharks released in the world. Funding for the plan was primarily available through Part VII of FSA. The objectives of the PI-RPOA are:<sup>223</sup>

- to enable states to meet their obligations arising under relevant measures under their RFMO,
- promote data collection, monitoring and analysis of fisheries,

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<sup>221</sup> Western and Central Pacific Fish Stocks Convention, Article 22.

<sup>222</sup> Western and Central Pacific Fish Stocks Convention, Article 21.

<sup>223</sup> Pacific Islands Regional Plan of Action for Sharks: Guidance for Pacific Island Countries and Territories on the Conservation and Management of Sharks (FFA/SPC/SPREP-PROE, 2009), launched on 16 November 2009.

- promote consistency in approaches to conservation and management of sharks,
- facilitate the adoption by the PICTs of best practice in the conservation and management of sharks in their national waters, and
- provide a platform from which the PICTs can respond to more exacting regional management measures for sharks as they emerge.

While these objectives provide an opportunity to protect sharks holistically, the implementation framework in the plan focuses primarily on the offshore tuna and tuna-like fishing industry. This is especially the case of the ecological risk assessment. SPREP has included a new mandate of shark conservation and management to address 'gaps' in the PI-RPOA through its regional species actions plans (which already includes cetaceans and turtles).

The action plan does not provide specific guidance on the following activities to improve protection of sharks in the region:

- Increased regional collaboration and partnership in activities other than offshore fishing;
- Reduction of coastal threats to sharks;
- Increased capacity-building in each state;
- Cohesive policy and legislation for protecting sharks;
- Protection of traditional knowledge, practices and resource management;
- Promote sustainable use of shark;
- Implementation of the regional database on sharks for domestic shark fishing

activities;

- Further research and monitoring of shark stocks and their habitats;
- Compliance and enforcement framework for domestic and offshore areas.

The next step after the release of this plan was an invitation for Pacific Island states to request for assistance to consider and implement proposed actions. The current status of national measures for shark conservation and management is discussed below.

### **3.6 Current Status of Shark Conservation and Management in the Pacific States**

While the Pacific Islands have been recognised as taking a leading role in the shark conservation and management, this is based on comprehensive measures taken by few states especially to establish shark sanctuaries, ban finning and measures taken at RFMO levels. There is a lot to be done to further improve measures in states.

There is a high level of variability in the management of shark in the region. Marshall Islands, Tokelau, Palau, and French Polynesia have declared shark sanctuaries under their national legislation. The USA NPOA applies in Micronesia states. In September 2009 Palau declared its waters a shark sanctuary prohibiting them from being commercially fished. Palau forbids all commercial shark fishing within its Exclusive Economic Zone (EEZ) waters. The sanctuary protects about 600,000 square kilometres (230,000 sq mi) of ocean. Tokelau declared its entire EEZ a shark sanctuary in 2011.

In May 2010, Hawaii passed a state law prohibiting the possession, sale or distribution of shark fins. Hawaii's measures are significant because it was a major entry port of landing of fins in the USA. In January 2011, the Commonwealth of Northern Mariana Islands passed a bill similar to that passed by Hawaii.

Guam, a major fishing hub, joined other island states in support of shark conservation after seeing the impact of the shark fin trade on Guam's waters. University of Guam Associate Professor of Fisheries Dr Jenny McIlwain shared her findings on Guam's shark populations at a legislative hearing. She found four times as many sharks off Fiji and northwest Australia as she did in Guam's waters. In these countries, sharks are shown to be worth far more alive as a tourist draw than dead. However, it must be noted that shark-based tourism may be feasible in some coastal communities, but not all communities (simply due to the lack of tourism activities associated with infrastructural issues).

Specific measures for managing sharks do not apply in many states such as Fiji, Kiribati, Nauru and Tuvalu. Some states use a fin to weight ratio (5 per cent) as a management measure. This includes Samoa and Cook Islands. Papua New Guinea (PNG) and Solomon Islands license shark fin exporters. Kiribati operates the largest marine reserve. PNG applies further measures such as total allowable catch of 2000 T.

There is concern on the validity of approaches due to lack of catch and effort data, inadequate knowledge of stock status and inter-species variabilities. The fin to weight

ratio, while used widely elsewhere, is also not ideal due to issues with monitoring for compliance and enforcement. This is because removal of carcass from fins prevents officers from identifying species caught unless the carcass is maintained (or even otherwise).

To improve compliance and to minimise wastage it is better to adopt measures that prevent the large scale finning of sharks. However, such measures are not to be implemented abruptly because of the additional socio-economic considerations to fishers. In some cases, shark finning is a supplementary income to fishers onboard tuna fishing vessels.

The Action Plan does not provide a time frame to implement actions to achieve reductions in activities. For example, establishing shark-based tourism activities in local communities that rely on consumptive-use of sharks can take several years and need sustained support at the national and regional levels throughout the process.

The Action Plan indicates that successful implementation of bycatch measures will be determined by a reduction of the threats to marine sharks by a 75 per cent increase in the number of Pacific Island states involved in the regional observer program. However, the regional indicators listed above do not include bycatch, possibly because SPC, WCPFC and FFA are primarily responsible for bycatch mitigation. Bycatch has both fisheries and conservation elements, but RFMOs are likely to 'sideline' bycatch matters.



Polacheck indicates that political pressures and intervention in science and the crossing of boundaries between scientific and political processes' are common in the operation of RFMOs. This indicates that conservation science should play a larger role in shark conservation, and political parties must recognise its significance. There is a need to ensure that environmental/conservation interests are independently represented in the fisheries management regimes. The involvement of NGOs is an important indication of closer collaboration between environmental and fisheries agencies. The regional approach for marine conservation and management can also include measures such as avoidance of shark hotspots by fishers within protected ABNJ (such as recommended under CBD and IPOA-Shark).

There are some opportunities for economic and sustainable development in the marine action plan through tourism. There are currently no regional guidelines on shark eco-tourism. The benefits of shark-based tourism may include income and employment opportunities and cultural enrichment for locals, and additional conservation benefit to shark populations and their habitats.

## **Part II Implementation and Capacity**

This part of the thesis assimilates relevant provisions identified in the earlier parts, and provides an overall evaluation of the legal regime based on the implementation capacity and issues relevant to priority areas for shark conservation. A supplementary consideration in the analysis was integration and harmonisation of measures at the regional level.

## **4 Implementation in Pacific States and the Issue of SIDS Capacity**

### **4.1 Overview**

There was a diversity of legal regimes at international, regional and national levels that were evaluated, each with specific objectives and scope. For example, LOSC and FSA together with WCPFC provide obligations for states to cooperate in conserving and managing marine resources in the different maritime jurisdictions. Other MEAs are aimed at protecting endangered species and/or specific habitats or threats. Some MEAs are aimed at protecting entire biodiversity, and some are targeted at single species or specific threats, corresponding to the work of one or more Pacific IGOs.

From the doctrinal analysis of regional agreements and guiding documents, it is apparent that the region has adopted many of the recent environmental decisions made by international bodies, such as the concept of large-scale MPAs under the Pacific Oceanscape and national measures such as shark sanctuaries.

## 4.2 Implementation Gaps in the Legal Regime

### 4.2.1 *Issues of regulating of direct harvest*

Regulation of small-scale coastal fisheries is best suited to a sustainable use approach. Permitted direct take under international law can be grouped as traditional subsistence harvest, and conservation-based, socio-economic take.

CBD provides for the traditional and sustainable use of living resources by indigenous communities.<sup>224</sup> In accordance with CBD, states are obliged to support local communities to develop methods of sustainable use.<sup>225</sup> This means that states should provide a supportive law and policy framework for management tools like community-based management and adaptive co-management approaches based on shark fisheries. CMS provides for the regulation of the use of migratory species for traditional subsistence or scientific purposes only.<sup>226</sup> Apart from these measures, there is no clear compliance regime for sustainable utilisation of migratory species that are fished in coastal waters.

There are very limited provisions in MEAs suited to sustainable shark use that are not based on traditional subsistence use. Of particular concern is the lack of measures for supporting livelihoods-based shark fisheries and small-scale domestic shark

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<sup>224</sup> Sustainable use measures are listed in CBD art 10.

<sup>225</sup> CBD, art 10(e).

<sup>226</sup> CMS, art III (5).

finning. Implications of the lack of clear guidelines in terms of protecting livelihoods based on sharks may include compliance and enforcement problems.<sup>227</sup>

At the same time, there is a need to manage state fisheries based on catch and effort controls. This is limited by lack of catch and effort data. Further, this type of national management of these shared species of sharks may be particularly an issue in developing states due to limited resources for alternative income generation or enforcement capacity. The absence of clear guidelines on the law and policy obligations of states under MEAs relevant to sustainable shark may also be reflected at the national levels.

#### ***4.2.2 Precautionary approach***

The fisheries agreements mainly exclude measures for the conservation of coastal fisheries based on sharks even though many shark species are a shared resource. FSA provides that states are obliged to regulate fisheries based on straddling fish stocks that occur in national jurisdictions,<sup>228</sup> and a precautionary approach is to be taken into consideration in the management and conservation.<sup>229</sup>

A precautionary approach may be applied in the management of traditional shark fisheries. For states to apply precautionary measures for shark conservation, especially in terms of data and information requirements under FSA, they will need to

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<sup>227</sup> Brendan Moyle, 'Regulation, conservation and incentives' in Sara Oldfield (2003) *The Trade in Wildlife: Regulation for Conservation* 42-5.

<sup>228</sup> FSA art 5-7, art 18-23.

<sup>229</sup> FSA, art 6(2).

ensure that coastal communities cooperate in managing traditional subsistence fisheries.<sup>230</sup> This is because shark population monitoring and research requires a regional database based on their wide range and distribution. Traditional fisheries communities are an important element of such wide-scale research because of their high priority.

### ***4.2.3 Habitat protection, including protected areas networks***

A major threat that sharks face is unsustainable human activities, primarily fisheries, pollution and development.<sup>231</sup> Coastal states have jurisdiction under LOSC to protect and preserve the marine environment of the EEZ.<sup>232</sup> The key threat to sharks in this zone is bycatch and finning. Bycatch mitigation and finning are dealt with later.

LOSC also states that coastal states must take national measures to conserve and manage living resources on the high seas.<sup>233</sup> This policy flexibility given to coastal states in maritime zones under their sovereignty could provide the basis for the development of more stringent conservation standards to protect coastal areas, including the habitats of sharks.

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<sup>230</sup> See discussion in Steiner Andresen and Jon Birger Skjørseth, 'Science and Technology' Ch. 9 in Jutta Brunnee, Daniel Bodansky and Ellen Hey, *The Oxford Handbook of International Environmental Law* (Oxford, 2007) 201.

<sup>231</sup> Above n 18, 2-3

<sup>232</sup> LOSC Part V, art 56(1)(b)(iii).

<sup>233</sup> LOSC Part VII, s 2, art 117.

Measures for habitat protection are provided under CBD and CMS. Under CBD, states are obliged to identify ecosystems and habitats that are required by migratory species within their national jurisdiction,<sup>234</sup> and take additional measures in areas beyond national jurisdictions. More specifically, states are to enact legislation and/or other provisions to regulate activities in protected areas, protect threatened species, and regulate processes and activities that adversely affect biodiversity.<sup>235</sup> Additional measures include establishment of a regional network of protected areas.<sup>236</sup> However, there is no clear standard to ensure that all coastal areas that are important for sharks are included in protected areas. Further, several endangered shark species are yet to be listed in MEAs and therefore excluded from specific obligations at the international level.

#### ***4.2.4 Bycatch and Finning***

LOSC contains some provisions that call for measures to minimise adverse effects of fishing on non-target species (bycatch) during fishing activities in the EEZs and high seas.<sup>237</sup> At best, however, a coastal state's only obligation is to ensure that shark populations are not endangered by overexploitation (as bycatch) in the EEZ. To do this, coastal states need to adopt strong measures to minimise bycatch, stop finning and utilise broad enforcement powers to ensure compliance with measures under LOSC.

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<sup>234</sup> CBD, art 6(a), 8, 10.

<sup>235</sup> CBD art 8(c), (k) and (l).

<sup>236</sup> UNEP, *Ad Hoc Open-ended Working Group on Protected Areas* (20 June 2005) *UNEP/CBD/WG-PA/1/6*, Annex I Recommendation 1/1.

<sup>237</sup> LOSC Part V art 61 and Part VII, s 2, art 116(1) b.

The examination of FSA demonstrates that there are additional measures to those under LOSC that are applicable in the conservation of sharks. In particular, management and conservation measures under FSA provides a binding framework for the development and implementation of practical measures for addressing bycatch at the national, sub-regional, and regional levels to conserve sharks in both these zones.

Further, relevant provisions in the Agreement are those relating mainly to mitigating fisheries impacts (bycatch, finning, marine environment), precautionary approach, regional cooperation (bycatch), and enforcement of measures under RFMOs by states. To achieve the conservation of sharks, international cooperation among all states that have interest in the stocks is fundamental. Detailed data and information on sharks is required, but there are no detailed data collection requirements for bycatch species, except catch, effort and catch composition under FSA.<sup>238</sup>

The provisions relevant to the mitigation of bycatch and associated species (such as sharks for finning) under LOSC and FSA have three implications for states. First, states can promulgate domestic legislation to enable data collection on non-target species from fishing vessels operating in all its national maritime zones and in the high seas, and set up research programs to assess impact of fishing on non-target species. Second, states can also adopt plans that are necessary to conserve non-target species, and to protect habitats of special concern in all maritime jurisdictions, including the high seas. Third, states are obliged under LOSC and FSA to conserve of

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<sup>238</sup> UN Fish Stocks Agreement, art 6(b).



species affected by fisheries in the high seas and EEZs, cooperate with the aim of forming RFMOs. RFMOs should aim to conserve all non-target, associated and dependent species that are affected by the fisheries.<sup>239</sup> There are also port state and flag state duties designed to assist in the enforcement of regional measures under RFMOs.

#### ***4.2.5 Issues with the Implementation of the Legal Regime to Mitigate Shark Bycatch and Finning***

There are gaps in the regime for mitigating bycatch and preventing environmental damage, particularly due to the zonation approach under LOSC. Zonation of the ocean under LOSC and the different legal regime within each jurisdiction make the international and regional scope for conserving highly migratory species cooperatively complex, especially for shark fisheries because of the doctrine of sovereignty in the coastal waters. However, FSA provides conservation and management measures for straddling fish stocks and highly migratory species mainly for fisheries operating in the EEZs and high seas.

Since FSA was prepared arising from concerns about the sustainability of the tuna fishery, measures do not protect sharks from all fishing activities. For example, a limitation of the Agreement is that it does not obligate states to cooperate regionally to conserve and manage resources in waters of national jurisdiction (archipelagic waters and the territorial sea, for example). States have a duty under customary

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<sup>239</sup> LOSC Part V.

international law to cooperate in mitigating shark bycatch in all maritime jurisdictions and all fisheries because sharks are a shared resource.

Non-binding measures are also important in this discussion because voluntary measures are also for bycatch mitigation and finning, and also provide more specific measures for reducing bycatch. Compliance with IPOAs has been ‘low’ worldwide, including the IPOA-Sharks. Enforcement options available for measures which are voluntary is problematic. Segerson indicates that voluntary approaches by industry to reduce bycatch are dependent on strong participation incentives, clear standards for behaviour or performance and sufficient monitoring to determine voluntary compliance.<sup>240</sup>

Developing states may also not have the capacity to conduct technological, economic and social research at the national or regional levels to facilitate the implementation of measures outlined in the technical guidelines for reducing shark mortality. However, voluntary measures have also been proven effective in facilitating the development and introduction of environmentally-friendly technology over the long term.<sup>241</sup>

Since the FAO Code of Conduct is voluntary other MEAs will be instrumental in referring to the relevant provisions from the code that may assist in developing

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<sup>240</sup> Kathleen Segerson, ‘Can voluntary programs reduce sea turtle bycatch? Insights from the literature in environmental economics’ in R. Quentin Grafton et al (ed) *Handbook of Marine Fisheries Conservation and Management* (Oxford, 2009) 625.

<sup>241</sup> Steiner Andresen and Jon Birger Skjærseth, ‘Science and Technology’ Ch. 9 in Jutta Brunnee, Daniel Bodansky and Ellen Hey, *The Oxford Handbook of International Environmental Law* (Oxford, 2007) 202.

regional and national frameworks. Measures in this framework can also be formalised through regional and national legal frameworks for protecting sharks.

#### ***4.2.6 Regional cooperation for shark conservation and management***

States are obliged to cooperate regionally for marine resource conservation under a number of MEAs. Under LOSC, related fisheries instruments and Agenda 21, international and regional cooperation is necessary for the management of living marine resources.<sup>242</sup> Under CMS, agreements for conservation should be based on population segments that allow population-based conservation status to be determined. The scientific basis for the inter-linkages between South Pacific Islands' shark populations makes this an important population segment for determining regional conservation status of sharks. States are also obliged to cooperate internationally in enforcing CITES. Measures for regional cooperation in each of the priority areas occurred under different MEAs.

CBD addresses regional cooperation on the basis of marine resource conservation but there are no specific measures that apply directly to sharks. CMS provides measures for regional cooperation in the conservation of migratory species by range states through regional agreements. The role of CMS in the international environmental framework is to provide an umbrella regime for coordinating and harmonising all migratory species protection measures, including bycatch, habitat degradation and direct harvest.

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<sup>242</sup> LOSC Part VII, s 2, art 118; Agenda 21, Chapter 17; UN Fish Stocks Agreement.

Measures to implement CMS may differ regionally based on the interest of states in each region. For SIDs, the compliance with this principle in regional policy will need to be consistent with national priorities and interests should all Pacific SIDs become members under CMS and cooperate in the conservation of sharks.

Bycatch reduction in the LOSC and FSA instruments through regional cooperation measures has been discussed in the earlier section. The measures include the need to incorporate best available scientific information and data for bycatch reduction. However, there are gaps in framework in terms of bycatch in coastal fisheries, or those based on fisheries that are neither migratory nor straddling.

### **4.3 Status of Cooperation in the Pacific Islands**

States in the South Pacific are obliged under Noumea Convention to cooperate regionally in the protection of endangered species. Further, this Convention provides for specific implementing legislation in relation to endangered species: the establishment of joint or individual special protected areas; and regulation of activities that adversely affect such species within these areas.<sup>243</sup> In addition, states are obliged to harmonise policies to protect endangered species at the regional level.<sup>244</sup>

A limitation is the few states which are not parties to the Noumea Convention. This limits the legal obligations of non-members in the South Pacific from complying

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<sup>243</sup> Noumea Convention, art 14.

<sup>244</sup> Noumea Convention, art 5(1).

with integrated and harmonised measures for shark conservation. This is further justification for a formalised South Pacific regional agreement for protecting sharks.

Regional IGOs, states and other supporting agencies do not have a holistic regime under which to coordinate and integrate fisheries, environmental, conservation and sustainable development activities in the context of sharks. Further, the holistic regional framework for protecting Pacific sharks must also address obligations of states under other MEAs and the gaps and other matters identified in this Chapter.

#### ***4.3.1 Protection of habitats through MPAs***

There are limited measures for threatened species protection under the regional governance framework. The regional governance framework provides for the protection of threatened species through PIROP principles, mainly through the designation of MPAs or networks of MPAs. However, there is no regional effort to protect sharks by cooperation among states in the establishment of marine protected areas beyond the limits of national jurisdiction as is encouraged under CBD.<sup>245</sup>

One of the largest constraints for developing a regional framework in the Pacific is the lack of information on critical shark habitats consisting of foraging, spawning,

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<sup>245</sup> CBD Decision VII/5.

breeding grounds, and migratory pathways. The Noumea Convention also provides specific measures for protecting special areas important to endangered species.

Since lack of political direction has been identified as a constraint to the implementation of compliance measures at national levels, and given resource constraints, a more formalised and structured framework is needed to develop a comprehensive regime for protecting sharks. Further, the Pacific Plan does not provide a strong framework for the protection of threatened species in the region. In the absence of a framework for sharks in the South Pacific, sharks are treated generally as a part of each nation's biological diversity rather than a shared resource.

Biological diversity conservation reflects the obligations of states under CBD and CITES. Regional cooperation in the South Pacific is governed by the Pacific Plan, PIROP and the Pacific Oceanscape. Priorities for regional cooperation involve projects regarding economic and sustainable development. A shark conservation framework that incorporates economic or sustainable development opportunities may generate political will for shark protection measures.

#### ***4.3.2 Regional cooperation for the protection of living marine resources***

Under CMS, cooperative action beyond national jurisdictions to conserve highly migratory wildlife species is encouraged. LOSC and related fisheries instruments provide for the establishment of RFMOs to manage fisheries, and this includes

measures for bycatch mitigation. The only South Pacific legal instrument specific to sharks is the Western Central Pacific Fish Stocks Convention.

The obligations for regional cooperation under MEAs are fragmented due to the ocean zonation approach to conservation and management under LOSC, and this is reflected in the regional framework. One example is the Western and Central Pacific Fish Stocks Convention. Since the Convention does not cover bycatch mitigation/finning adequately, an overarching holistic regional regime is needed.

There are many common interests and issues within SIDs in the Pacific which can be addressed through cooperative action beyond national jurisdictions because of the existing geo-political setting. Common issues include limited capacity for states to individually manage shark populations and habitats or fund related research.

### ***4.3.3 Role of NGOs in shark conservation***

NGOs can assist in protecting sharks by ensuring that the implementation of the Pacific Oceanscape includes shark conservation. This is important for promoting the conservation of sharks in the region.<sup>246</sup> The roles of NGOs are not clearly outlined in regional policies, or the Western and Central Pacific Fish Stocks Convention and the tri-national partnership. The regional involvement of NGOs such as WWF have been

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<sup>246</sup> Agenda 21 recognises the importance of NGOs in implementing international environmental law (para. 27.12). NGOs often focus on specific issues to address environmental challenges, including delivery of programmes to different stakeholders.

long term,<sup>247</sup> but measures to coordinate NGO and IGO activities across all shark conservation activities have either not been developed, or is ineffectively implemented. For example, NGOs are only permitted as observers in the WCPFC meetings.

The only requirement under FSA's enforcement measures for NGOs is 'representation'. The roles of NGOs need to be clearly defined in regional policies to allow them to effectively implement shark conservation activities within a harmonised regional arrangement. Such a policy will need to be endorsed by PIF Leaders.

#### **4.4 Implications of Gaps to Implementation**

In the analysis and evaluation of the international environmental regime, a number of gaps were identified that may explain the 'limited success' of the international and regional regimes on protecting sharks. An additional plausible reason may be that international law does not provide a clear framework for protecting sharks making it difficult to assess compliance levels at the national level.

Participation by states to some but not all relevant agreements may also contributed to limited success of the international environmental regime for protecting sharks. This is due to inconsistencies in the regional and international

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<sup>247</sup> Michelle Lam, *Strategy to promote and Strengthen Environmental NGOs Stakeholder Participation and Public Awareness of Pacific Oceanic Fisheries Management Issues* (FFA, 2006) 6, 15, 37. This policy provides a strategy for collaboration among FFA and NGOs in oceanic fisheries activities,



obligations imposed on each range state creating a ‘gap’ in cooperation and harmonisation opportunities.

LOSC provides the coastal state jurisdiction framework in the different maritime zones, and therefore can result in segmented protection mechanisms for sharks and other species in each zone. Additional MEAs provide more integrative approaches for conservation and management.

Overall, many principles and measures in MEAs that apply to shark conservation are not substantiated beyond fisheries matters. There is a delicate balance between the conservation of biological diversity and species-specific conservation for sharks because of their biology and nature of threats.

Coordinated management of protected areas is essential to ensure that shark habitats are protected along migratory routes and destinations. There are some obligations under CBD to establish large MPAs to provide increased resilience to climate change effects and this can be useful for shark habitats that are included in MPAs. Climate change concerns have also triggered census among parties to establish high seas MPAs, and mechanisms for this to occur can potentially be planned through regional arrangements. High seas MPAs may be useful in developing further measures to reduce bycatch by states agreeing to cease fisheries in high seas MPAs.

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including bycatch. However, NGOs are only permitted as observers in the WCPFC meetings. The only requirement under FSA’s enforcement measures for NGOs is ‘representation’.

#### **4.5 Low participation by states in the overall regime**

Table 6 shows that among states in the South Pacific region, developed states are parties to all conventions relevant to shark conservation while the developing states are only members of a few. Mostly, membership of the South Pacific Island states is limited to LOSC, FSA, CITES and CBD.

This membership pattern of developing states will potentially limit the impact of the overall legal regime which also includes CMS. This is because of a restricted scope of measures that may be based solely on the instruments in which states are parties.

**Table 6. International legal instruments and the membership among states in the South Pacific.**

	LOSC	FSA	CMS	CITES	CBD	Total
<i>Developed States:</i>						
Australia	Y	Y	Y	Y	Y	5
New Zealand	Y	Y	Y	Y	Y	5
<i>Developing States:</i>						
Cook Islands	Y	Y	Y		Y	4
Federated States of Micronesia	Y	Y		Y		3
Fiji	Y	Y			Y	3
Kiribati	Y	Y			Y	3
Marshall Islands	Y	Y			Y	3
Nauru	Y	Y			Y	3
Niue	Y	Y			Y	3
Palau	Y	Y	Y	Y	Y	5
Papua New Guinea	Y	Y		Y	Y	4
Samoa	Y	Y	Y	Y	Y	5
Solomon Islands	Y	Y		Y	Y	4
Tonga	Y	Y			Y	3
Tuvalu	Y	Y			Y	3
Vanuatu	Y	Y		Y	Y	4
<i>Total</i>	<i>16</i>	<i>16</i>	<i>5</i>	<i>8</i>	<i>15</i>	<i>-</i>

## **4.6 Improving Capacity for Implementation**

### ***4.6.1 Issues of Monitoring and Enforcement***

Although environmental legislations in some Pacific Island states may be very comprehensive and institution structures are sound compared to other South Pacific island countries, there have been difficulties and inefficiencies in enforcement and monitoring, especially with regard to IUU fishing complexities.

Major constraints include areas of manpower, financial resources, and technical expertise to design legislation to enable better compliance and enforceability, and even conflict of interest with states and developer and protector of environment. The latter is seen in coastal development projects which impact on coral reef ecosystems.

Overall, there is a need to use innovative strategies to combine compliance assistance, increase community and public consultation in the design and implementation of law and policies, incentives together with monitoring and enforcement tools. The purpose of compliance assistance is for industries and communities to understand why and how they can meet environmental regulations.

### ***4.6.2 Local Context***

It is necessary for states to comply with MEAs in the context of sharks so that they reflect the intentions of measures established under the conventions. Due to the biology and ecology of sharks, threats and associated conservation values, states also

need to develop additional shark-specific measure. Such measures need to be applied within the local context.

The local context provides opportunities to promote national and regional priorities and interests, also under the existing South Pacific regional governance framework. The international and regional governance framework provides a scope for sustainable development which is relevant to shark conservation measures.

#### ***4.6.3 Regional Risk Assessment***

Species- based ecological assessments of shark populations are fragmented. Those available for offshore fisheries show that the many species of sharks are endangered so state, regional and international measures are proposed to conserve sharks. For societies that are dependent on sharks for small-scale fisheries, livelihoods and cultural well-being, measures that prohibit the take of sharks deprive them of food, income and cultural well-being. In the case of sharks which are not threatened, fishers lose out on maintaining a sustainable shark fishery which is a source of sustainable development (income and employment prospects).

Consequently, measures proposed in international instruments that are adopted in the national legal framework will have a high chance of failure (due to associated non-compliance) unless states adopt additional measures to ensure that the socio-economic, subsistence and cultural aspects of conservation are also preserved.

The threat risk to sharks may vary across sub-regions and by species. For example, recreational activity (water sports) is an example of an additional activity that is highly significant to Australia and few other states (such as PNG) which are high risk but confined to a sub-region. Finning also is more dominant in Pacific states close to the SE Asian states which are some of the key exporters of fins. Another high risk wide-spread activity is local finning fisheries.

A regional risk assessment of threats to sharks is required to identify localised high risk areas, species and/or activities, and this should take into account existing measures for conservation and management which may reduce the threat risk. In this regard, there is a significant need for greater research to identify any localised high risk areas for urgent action.

#### ***4.6.4 Sustainable Development: A Solution to Capacity Issues in SIDs***

Shark conservation measures that are integrated with sustainable development and poverty alleviation goals under the Pacific Plan and Pacific Oceanscape may provide a framework, especially for SIDs in the South Pacific,<sup>248</sup> to enact supporting laws for shark protection. Such integration within the regional governance framework can provide a source for funding and foreign aid among states in the area of shark conservation and management.

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<sup>248</sup> The Pacific Plan does not set a clear direction for the protection of all regionally shared resources such as sharks, except in the context of sustainable development (The Pacific Plan, 3). The United Nations Barbados Plan of Action for Sustainable Development of Small Island Developing States (BPOA) 1994, which reaffirms the principles and commitments to sustainable development embodied in the Rio Declaration on Environment and Development and CBD, provides an additional framework for directional setting. Barbados Plan of Action for Sustainable Development of Small Island Developing States, *Report of Global Conference of the Sustainable Development of Small Island Developing States*, 25 April-6 May 1994, Barbados, United Nations General Assembly A/CONF.167/9 s IX sub-s 45ABPOA, s II.

For example, the 2010 Pacific Oceanscape provides the regional strategy for long-term and coordinated funding for actions, donor harmonisation and aid effectiveness. Through regional governance frameworks, linkages with developed states such as Australia, France and USA which are members of PIF and developing states in the South Pacific may be utilised for sharing information, scientific input, and best practices on shark conservation.

A strategy for funding industry and community-based shark conservation is important for marine resource conservation in SIDs in the region because of the limited capacity to develop legislation and policy in a participatory manner.<sup>249</sup> The Pacific Oceanscape encourages integrated ocean management that responds to nation's priorities and aspirations.<sup>250</sup> The success of the Pacific Oceanscape will depend on the level of regional cooperation in responding to 'national development aspirations and priorities which in turn would ... focus attention on critical issues'.<sup>251</sup>

In this context, states need to clearly link conservation values associated with sharks to national aspirations and priorities through a national policy, and commit to cooperative measures to protect sharks with other range states.

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<sup>249</sup> See also Tara Hewitt, 'Implementation and enforcement of the Convention on International Trade in Endangered Species of Wild Flora and Fauna in the South Pacific Region: Management and scientific authorities' (2002) 6 *Queensland University of Technology Law and Justice Journal* <<http://www.austlii.edu.au/au/journals/QUTLJJ/2002/6.html#fn85>>

<sup>250</sup> *Our Sea of Islands – Our Livelihoods – Our Oceania: Framework for Pacific Oceanscape* (Draft), Forty-First Pacific Islands Forum, Port Vila 4-5 August 2010 8.

<sup>251</sup> *Ibid* 3.

Pacific SIDs in which local fishing communities remain reliant on socio-economic benefits derived from sharks and funding for conservation activities is scarce, sustainable development should lead to alternate livelihoods or the development of shark-based income or food generation ventures (ecotourism). Without alternative livelihoods, it would be impossible to manage depleting marine resources sustainably.

## **4.7 Conclusions**

There are a number of areas that need to be improved through a formalised regional arrangement for conserving and managing sharks. These include:

- The application of the precautionary approach in fisheries management to deal with direct harvesting and bycatch (including finning);
- Integrated management arrangements for all endangered shark species in their entire habitat range, and enable small-scale sustainable shark fisheries for other species;
- Special consideration is needed for sharks to be included in the protected area networks; and
- Inclusion of the high seas component in bycatch mitigation and anti-finning measures.

There is a need for a formalised regime for the integration and harmonisation of the region's economic, ecological, cultural and managerial considerations for shark conservation and management. Based on the commonalities in conservation and management principles in the region, a formalised regional arrangement may also



assist in providing implementing legislation to support and enable sustainable use of sharks through regional networks of communities.

In addition, a regional MoU on sharks in the South Pacific can provide opportunities to increase the ecological knowledge on sharks in the region, protect and preserve livelihoods and traditional subsistence values associated with sharks, and engage states to resolve common shark conservation and management concerns (exacerbated by limitations characteristic of SIDs) cooperatively.

Due to the gaps in the international and regional framework in terms of protecting sharks, a formalised regional agreement or MoU is recommended to ensure comprehensive legal and/or political regime for protecting pacific sharks. There is no formal directive to protect sharks as a shared migratory resource in the South Pacific in the regional governance framework. Components of political will in the context of shark conservation and management, such as full participation of states, recognition and understanding of common problems, commitment through sustained resource and effort allocation, and commonly perceived and developed solutions have been identified as essential requirements for developing a regional agreement.

A regional framework for shark conservation may provide the impetus to include shark conservation measures in broader environmental strategies such as climate change, poverty alleviation and sustainable development.

## **5 Conclusion**

Pacific shark conservation and management is challenging at international, regional and national levels due to several unique attributes. These include the varying range and distribution of migratory sharks, the large numbers of species to be managed with their high inter-species variabilities, high value of fins and high wastage of remaining carcasses, as well as their use as a coastal resource for fisheries security.

Threats and biological and ecological features provide a basis to assess shark conservation and management measures. This study reveals several gaps within the regulatory framework at all three levels that justify the development of a formalised South Pacific regional cooperation arrangement that is inclusive of offshore and inshore issues. Such an arrangement is needed for states to protect Pacific sharks in compliance with a number of principles and specific obligations under international law.

### **5.1 Gaps in the Regulatory Framework**

The overall analysis of the legal regimes in this thesis reveals that there is an absence of an adequate legal framework for the shark conservation of Pacific sharks. There are gaps in the international regulatory framework for protecting sharks due to the existence many general principles but few specific obligations that are applicable to sharks, and few species to which they are applied.

The international regime does not contain measures for shark bycatch mitigation or in coastal fisheries,<sup>252</sup> shark fining, and the regulation of traditional or small-scale shark fisheries based on socio-economic values.<sup>253</sup>

Some measures such as the application of precautionary reference points are dependent on the existence of baseline data for establishing controls. Data deficiencies in term of harvest, bycatch, finning and conservation status means that there is a need for Pacific IGOs and states to focus on sharks within the short to medium term.

Under CMS, there are specific measures addressing key areas for shark conservation, including regional collaboration and management of local fisheries. This makes CMS a key instrument for shark conservation together with LOSC and FSA (bycatch and related finning). Many Pacific Island states are mainly not parties to CMS. Under their existing range of MEAs, these states have no specific obligation to cooperate regionally to protect sharks or to regulate traditional shark fisheries under CMS.

## **5.2 Features of Regional Collaboration**

Formalised bilateral, multilateral or regional arrangements needs to be supported

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<sup>252</sup> This is attributed to the zonation approach used under LOSC to protect the rights and responsibilities of coastal states in different maritime jurisdictions. LOSC and related fisheries instruments address bycatch mitigation in fisheries based on straddling and migratory fish stocks.

<sup>253</sup> Traditional subsistence use is addressed under CMS and CBD.

within the existing IGO frameworks. Based on the gaps in the international and national legal frameworks for protecting sharks, a regional cooperation agreement should aim to:

- Promote large-scale marine protected areas to protect inter-species variabilities, and consider harmonising such activities with the existing Pacific Oceanscape concept.
- integrate and harmonise environmental, fisheries and sustainable development measures in the context of shark conservation and management;
- improve regulatory design for supporting enforceable management measures in shark conservation and management,
- promote shark-based research to fill information gaps in SIDs; and
- address bycatch mitigation and finning.

A formal regional framework for protecting sharks should provide specific obligations for states to adopt shark protection measures into their national policy and legislation addressing all key areas, and to ensure that measures are integrated and harmonised.

Regional measures for shark conservation and management must ensure cooperation among Pacific states for the conservation of sharks and technical/financial assistance to coordinate shark-based conservation projects across range states.

### **5.3 Integration and Harmonisation of Measures**

Integration and harmonisation of measures is also important at regional and national levels. For example, national biodiversity action plans can provide an overarching framework for integration and harmonisation of measures for threatened species conservation.

One of the key features of regional collaboration should be integration and harmonisation of measures that address shark harvest, fining, habitat protection and bycatch. There was a lack of integration and harmonisation within existing regional measures in terms of:

- varying levels of protection to sharks accorded through legislation and policy among range states;
- lack of sectoral coverage (in environment/ fisheries/ conservation laws); and
- an absence of a framework for coordinated conservation actions between SIDs and developing/donor states.

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