INDEPENDENT STATE OF PAPUA NEW GUINEA

FISHERIES MANAGEMENT ACT 1998

NATIONAL SHARK FISHERY MANAGEMENT PLAN

THE NATIONAL FISHERIES AUTHORITY, by virtue of the powers conferred by section 28 of the Fisheries Management Act 1998 and all other powers it enabling, draws up the following Fisheries Management Plan to take effect on and from the date approved by the Minister.

Abbreviations

CPUE - catch per unit effort
EEZ - Exclusive Economic Zone
FAO - Food and Agriculture Organization of the United Nations
IPA - Investment Promotion Authority
Mt - metric tonne
NFA - National Fisheries Authority
PNG - Papua New Guinea
PNGFZ - Papua New Guinea Fisheries Zone
SPC - Secretariat of the Pacific Community
TAC - Total Allowable Catch
WPRFMC - Western Pacific Fisheries Management Council
TABLE OF PROVISIONS

PART I. - PRELIMINARY INFORMATION

1. Introduction
2. Citation
3. Application of Plan
4. Review of Plan

PART II. - MANAGEMENT FRAMEWORK

Division 1 - Description of the shark resource

5. Description of the Shark Resource

Division 2 – Objectives of the Plan

6. Objectives of the National Shark Fishery Management Plan

Division 3 – Management and Development of the shark Fishery

7. Strategies
8. Precautionary Approach to Fisheries Management
9. Total Allowable Catch
10. Control of By-Catch
11. Control of Fishing Effort
12. Closed Areas
13. Allocation of Licenses
14. Scientific Research

Division 4 – Policy on Shark Fishery Development

15. Domestication Policy
16. Customary and Artisanal Fishers
17. Game Fish Fishery

Division 5 – Monitoring of the Plan

18. National and Regional Shark Research and Monitoring
19. Monitoring, Compliance and Surveillance
PART III – APPLICATION FRAMEWORK

Division 1 – Interpretation

20. Interpretation

Division 2 - Shark Longline Fishery

21. Preamble
22. Limits of Fishing Licences
23. Type of Operations
24. Allocation of License
25. Total Allowable Catch
26. Guidelines for the Operation of finned Frozen shark Longline Vessels
27. Areas of Operation
28. Prohibited Areas
29. Transfer at Sea
30. Related Activities

PART I. - PRELIMINARY INFORMATION

1. INTRODUCTION

(1) The National Goals and Directive Principles require the Nation’s fisheries resources to be managed in a manner, which maximises Papua New Guinean participation through the wise use and development resource as a renewable asset.

(2) The Fisheries Management Act and this Plan, to the extent that it is applicable, must be capable of supporting this level of resource management.

(3) This National Shark Fishery Management Plan has been developed to be in accordance with Government policy and Papua New Guinea’s international and regional commitment.

(4) This plan is divided into Preliminary Information, Management Framework, and Application Framework sections.

(5) Part I provides the Preliminary Information outlining the parts of the plan;
Part II provides the Management Framework for the sustainable development of the shark fishery. It acknowledges the sovereign rights of Papua New Guinea to manage pelagic fish stocks, and develop its domestic shark fishing industry, thus ensuring that the state and its people gain optimal benefit from the shark resource. In considering the fragility of shark species, the Management Framework adopts the precautionary approach to management, taking into account the scientific information available for developing the resource; the need for regional and international cooperation in conserving and managing the shark resource; taking into account the need to continue to carry out research; and consideration of the customary, artisanal, and other users of the shark resource.

Part III provides the Application Framework in accordance with the management requirement provided for by the Fisheries Management Act. The Application Framework covers the principal shark fishery and its associated organisations.

2. CITATION

This plan shall be cited as the National Shark Fishery Management Plan.

3. APPLICATION OF THE PLAN

(1) The Plan applies to all activities by way of “fishing” as defined in the Fisheries Management Act 1998.

(2) The species covered by this Plan include;

(a) all commercial shark species; and
(b) all non-target, dependent or associated species taken in the course of fishing for shark.

(3) The area of waters covered by this Plan includes all Papua New Guinea fisheries waters, including the

(a) internal waters
(b) territorial sea
(c) archipelagic waters
(d) offshore waters

(4) This Plan covers

(a) all methods of fishing for shark, including but not necessarily limited to:
(i) longlining
(ii) droplining
(iii) trolling
(iv) purse seining
(v) handlining or single line fishing

(b) all related activities, including but not limited to
   (i) use of Fish Aggregating Devices
   (ii) transshipment
   (iii) port calls
   (iv) bunkering
   (v) bait fishing
   (vi) provisioning; and
   (vii) mothership operation

4. REVIEW OF THE PLAN

The National Shark Fishery Management Plan shall be kept under review and revised when necessary. Each review of the Plan shall be endorsed by the National Fisheries Board, submitting to the Minister for approval and notified in the National Gazette.

PART II – MANAGEMENT FRAMEWORK

Division 1 – Description of the shark Fishery.

1. The PNG shark resource and the fishery can be best described in the following manner;

   (a) Sharks are abundant in PNG waters as a result of its geographical and climate location. At least 29 species were recorded from PNG waters in 1987 from two orders; Carcharhinid or sometimes known as requiem sharks and pristid sharks. There may be other species probably occurring within the fisheries waters.

   (b) Carcharhinid and pristid shark stocks supporting the commercial fisheries in PNG waters are those associated with turbid waters on the continental shelf, and oceanic species. Sharks are also caught as by-catch from other fisheries including artisanal fisheries for subsistence consumption. Commercial operators generally target shallow water reef sharks using bottom longlining and pelagic species using longline gears. Sharks are also caught as by-catch from;

   (i) longlining operations
   (ii) purse seining
(iii) bottom longlining
(iv) Other fishing activities specified in section 4.

(c) Commercial shark species includes common black tip sharks, *Carcharhinus limbatus*, Australian black tip shark, *C. tilstoni*, white cheek sharks, *C. dussumieri*, pigeye sharks, *C. amboinensis*, and spot tailed sharks, *C. sorrah*. Very similar to black tip sharks, nervous sharks, *C. caurus*, are probably included in commercial catches. Other commercial species include oceanic white tip shark, *C. longimanus*, silky shark, *C. falciformis*, blue shark, *Prionace glauca*


(e) Sharks occupy a variety of demersal, midwater to pelagic habitats over continental and insular shelves and commonly found close to inshore. Although the majority of the shark species are truly marine, a number of them readily enter lower salinity estuaries, bays, lagoons, and sometimes rivers and lakes. Blue shark (*Prionace glauca*) segregate by sex and size and may only move to the mating area once they reach sexual maturity. Almost all sharks present in PNG waters are also distributed in Australia and the Western Pacific waters.

(f) The majority of commercially important shark species of western Pacific are ovoviviparous or viviparous, have long gestation period, low fecundity, and slow growth rate. Sharks take a long time to reach maturity. In most cases it takes 4 to 20 years to reach their age at maturity and differs with species and sex. The reproductive strategy for sharks are either placental viviparity or oophagy with litter size raging from 2 to 135 pups depending on different shark species. Carcarhinid and pristid sharks may grow as low as 90cm in total length to 700cm.

(g) The shark species of principal interest are those in the family of carcharhinidae and pristidae. Shark longline in PNG targets carcarhinus species of which both the trunks and fins are retained and frozen. Other species caught had their fins retained while the trunk is either discarded or used for bait. Smaller size sharks that are less than 100cm in total length
are also discarded either dead or barely alive. Observer reports showed approximately 98% of the sharks retained for finning are either killed onboard prior to removal of fins or are dead when brought to the side of the vessel.

(h) The Oceanic Fisheries Programme of the Secretariat of the Pacific Community (SPC) maintains a regional Database from which catches from member countries are analysed. NFA database also keeps record of all the catches landed in PNG ports as well as export figures.

(i) Shark landings has increased in the proceeding years and is believed to increase both in quantity landed and the participating vessels. The general variability in shark catch is believed to be due mainly to a shift in target species, as longline vessels targeting tuna tend to catch sharks other than tuna. Gear specification on board confirmed that longline vessels licensed for tuna are targeting sharks.

(j) At the same time, domestication of the shark longline fishery is strongly encouraged. The small to medium scale of this fishery, in terms of investment, work force, work skills and infrastructure requirements, combined with its potential to generate product with high market value, are characteristics which lend this fishery to domestication.

Division 2 –Objectives of this Plan

5. OBJECTIVES OF THE SHARK FISHERY MANAGEMENT PLAN

The objectives of the National Shark Fishery Management Plan is to give effect to this fisheries management objectives obtained in the Fisheries Management Act 1998, and specially;

(a) Maximise benefits to Papua New Guinea from sustainable use of its shark resource to achieve economic growth, human resource development, employment creation and a sound ecological balance; and
(b) Satisfy Papua New Guinea’s regional and International obligations in regard to the management and conservation of shark resources, while holding the country’s national interest paramount; and
(c) Minimise any adverse impacts of shark fishing and related activities on the marine environment and the resource itself.
(d) Minimise any adverse impacts of non-industrial sectors, including the artisanal and traditional sectors; and
(e) Improve decision making and data flow in relation to the shark through effective communications; and
(f) Ensure that the provisions of this Plan are developed, implemented, administered and monitored in an efficient and cost effective manner.
6. STRATEGIES

A. The following management strategies are adopted from the fishery:

(a) establish a National Total Allowable Catch (TAC) for the fishery by license category;

(b) implement limits on fishing effort for shark species, consistent with the national TAC levels;

(c) encourage and facilitate the sustainable development of Papua New Guinea’s domestic industry for shark;

(d) develop and apply criteria for license consideration, which gives preference to only PNG operators;

(e) regulate the gear specification for shark gear that may have adverse impacts on the standing stocks of shark;

(f) draw up measures to restrict the retention of sharks other than target species; prohibit, limit, or condition the use of specified types and quantities fishing gear;

(g) Support incentives to invest in the domestic shark industry;

(h) Where necessary, implement management strategies at species level or implement zoning to prevent localized shark stock depletion, and assist in enhancing the longer term viability of locally based industry;

(i) Collect and validate data on the status of stock through the use of national or regional logbooks, port sampling, scientific observers, and other methods;

(j) Promote active industry involvement in research, including the use of industry vessels and knowledge to improve stock assessment processes as well as providing economic data on their operations for the purpose of reviewing the plan;

(k) Monitor the impact of shark fishing on associated or dependant species or non target shark species and where necessary, adopt measures to ensure sustainable management;

(l) Develop and implement a policy to recover the cost of management;
(m) Monitor interactions between the licensed shark fishery and other users of the resource, and where necessary, implement measures to address any adverse impacts;
(n) Monitor the economic performance of the shark fishery, including information on catches, sales, processing and other relevant information from both the catching and processing sectors;
(o) Implement a strategy for responsible fishing, as required under international or regional conventions to which PNG is a party;
(p) Facilitate ongoing consultations on management arrangements.

Specific management and development measures for the fishery are outlined under PART III of this plan.

7. PRECAUTIONERY APPROACH TO FISHERIES MANAGEMENT

Papua New Guinea will apply a precautionary approach to the sustainable management of the shark resource and non-target, associated species, taking into account the best scientific evidence available on the status of stocks and the uncertainties inherent in that advice.

8. TOTAL ALLOWABLE CATCH.

(1) A Total Allowable Catch (TAC) will be set for the fishery and license category;

(2) NFA may review the TAC, taking into account results of scientific research, economic performance of the fishery, and any other factors that the NFA may consider as relevant to the development of an efficient and sustainable operation of shark fisheries, and advise the Minister through the National Fisheries Board. The Minister may announce a new TAC from time to time.

(3) The TAC for the fishery is as described in Part III of this Plan.

9. CONTROL OF BY-CATCH

By-catch of shark fisheries will be managed through fishing license conditions and/or subject to the management planning process for other species or fisheries. Where necessary the by-catch may be given as a percentage component of the fishery in the licence condition.

10. CONTROL OF FISHING EFFORT.

(1) The NFA may, from time to time, review the level of catch of each shark species and/or licensing arrangements, and recommend
changes to the level of fishing effort, type or methods of fishing, or categories of licence available in one or more sectors of the shark industry.

(2) Such a review may be prompted by, but restricted to:-

(a) the TAC been approached generally, or by the fishery or by licence category;
(b) an opportunity to expand, or the need to reduce the level of fishing effort in line with the new scientific evidence on the status of the stock;
(c) a need to adjust fishing effort because of adverse interactions with other fishery, or localised depletion;
(d) management initiatives taken at the regional or multilateral level, particularly regarding sustainable levels of fishing on a stock-wide basis; and
(e) Following any Government Policy initiatives.

11. CLOSED AREAS

(1) The Minister may, from time to time, delineate specific areas to be closed to the fishery and other related operations for various reasons including conservation and interaction between commercial fishing vessels and non-commercial fishing operations.

(2) The closed area applied to the fishery is specified Division 2 of Part III of this plan.

12. ALLOCATION OF LICENCES.

Allocation of Licences will be granted by the Domestication Policy set out in this plan and in accordance with the Application Framework set out for the fishery under Division 2 of Part III of this Plan.

13. SCIENTIFIC RESEARCH.

(1) Scientific research programmes shall be drawn up to coordinate research priorities that ensure the sustainability of the shark resource. This may include the biology and ecology of shark stocks, stock assessment and economic operation of shark fishery

(2) In accordance with the Fisheries Management Act, licensed operators are obliged to submit data on catch and effort and marketing for the purpose of this plan. Data will be collected through approved forms, which may be amended from time to time.

(3) The NFA shall place observers on fishing vessels on every fishing trip, taking into account the fragility of the fishery for the purpose of research and compliance. Fishing operators are obliged to
cooperate with observers in accordance with the provisions of the Fisheries Management Act. Cost incurred by this exercise shall be the met by the industry.

Division 4 –Policy on Shark Development

14. DOMESTICATION POLICY

(1) The Minister may, from time to time,

(a) announce major initiatives designed to boost the development of the domestic shark industry, and maximize benefits to Papua New Guinea from the management and development of PNG’s shark stocks.
(b) Announce polices setting out conditions of operation for domestic charter vessels, including fees and charges to be paid, provided that an increase in this category reduces foreign access.

(2) Notwithstanding the overall objective of the National Shark Fishery Management Plan, which is aimed at sustainable exploitation of the shark resource, the principle objective of this policy is to promote participation by Papua New Guineans in the shark fishery.

(3) Guidelines and conditions, which support the policy, are therefore required for licensing and operation of all vessels in the shark fishery, so that potential investors are aware of the Government’s requirements. Guidelines and conditions for allocating licenses are set out in Part III of this Plan.

15. CUSTOMARY AND ARTISANAL FISHERS

Special consideration should be given to avoiding any adverse impacts on customary resource owners in accordance with Section 26 of the Fisheries Management Act, which directs that the rights of customary owners of fisheries resources and fishing rights shall be fully recognised and respected in all transactions affecting the resource or the area in which the right operates.

16. GAMEFISH FISHERY

(1) Papua New Guinea’s game fishing is expanding. Shark longline vessels also target species, which are caught by gamefishers. To be able to understand the degree of interaction, scientific quality data and comprehensive information on catch and effort from licensed operators are required.
(2) Invocation of Section 29 of the *Fisheries Management Act* will be necessary, which requires licensed operators in the shark fisheries, including the game fish fisheries, to supply records, returns and other information deemed necessary for the management, development and conservation of the fishery resources in PNG waters.

Division 5 – Monitoring of the Plan.

17. NATIONAL AND REGIONAL SHARK RESEARCH AND MONITORING

(1) The NFA will carry out a programme of research on PNG’s shark stock including monitoring of the fisheries with a view to developing an information base and capability to quantify inter-annual variability on the status of the stock.

18. Interpretation

In this Plan, unless the contrary appears, each word or group of words has the same meaning, if any, as it has in the Fisheries Management Act, except where this differs as provided below;

“Act” means the *Fisheries Management Act*, and the Fisheries Management Regulations or as amended from time to time;
“Archipelagic waters” means the area of the water defined in the *National Seas Act*;
“Bunkering” means taking on fuel;
“By-Catch” means all other species of fish caught in the course of fishing where shark is the target species;
“Fishery Management Area” means the specified area to which the fishery plan relates;
“Freezer Operation” means a fishing operation that stores shark trunk below minus 4 degrees celcius and where shark trunks are frozen;
“Locally Based Foreign Fishing Vessels” means a foreign fishing vessel which operates from Papua New Guinea during its licensing period and lands or transships an approved portion of its catch to a carrier vessel in port for shipment to overseas markets. This term refers only to Papua New Guinea registered and flagged vessels.
“Carrier Vessel” means a marine vessel, which has the capability to carry and store shark trunk and fins and to transport the catch to designated overseas markets.
“Territorial Sea” means that sea area within the twelve-(12) miles of any land, island, or declared reef.