

# *WHITE PAPER*

## Guidance For The Development Of New Ireland Provincial Fisheries Policies

March 2018

*Hugh Govan*

## *Foreword*

In 2016, the New Ireland Provincial Administration (NIPA) officially requested the Wildlife Conservation Society (WCS) to provide the Fisheries and Marine Resource Division of the Economic Services Department with technical advice and assistance to build sustainable fisheries management that recognizes and sustains the livelihoods of coastal communities while also promoting economic development. The present white paper is part of this support and aims to provide technical guidance to NIPA on how they could structure their provincial fisheries policy and approaches such that it meets provincial needs for fisheries management and development and aligns to national and regional fisheries policy (e.g., The New Song, Melanesia Spearhead Group Roadmap for Inshore Fisheries, PNG National Roadmap for Inshore Fisheries). This report is the result of interviews and research in October 2017 and feedback from a Technical Working Group meeting, March 13<sup>th</sup>, 2018.

## Executive summary

The present white paper is part of support from the Wildlife Conservation Society (WCS) to the Fisheries and Marine Resource Division of the Economic Services Department of New Ireland Provincial Administration (NIPA) aiming to provide technical guidance on how to structure and deliver provincial fisheries policy such that it meets provincial needs for fisheries management and development and aligns to national and regional fisheries policy.

The strong international, Pacific regional and Melanesian commitment to sustainable management and development of coastal fisheries and recognition of their vital importance to livelihoods is matched by Papua New Guinea's (PNG) legislation and policy which lays out the roles of national and provincial government agencies in coastal fisheries management, provides opportunities for the involvement of districts and local-level governments (LLGs) and offers mechanisms for provincial level funding. So far, implementation and operation of these mechanisms has been challenging but the new national policy, Roadmap for Coastal Fisheries and Marine Aquaculture for Papua New Guinea: 2017 – 2026 (RCFMA) lays out three key thrusts:

1. Establish an enabling environment.
2. Ensure suitable capacity development and access to information for communities and fishers.
3. Manage coastal resources for sustainable development.

Provincial neglect and problems with the national delegation of powers has led to a decayed and inadequate infrastructure for the Provincial Fisheries Office (PFO) and a staff limited not only in number but with little motivation for any productive work practices in New Ireland Province (NIP).

The draft NIP Provincial Fisheries Development Plan gives indications of priorities but remains uncompleted after several years. It is considered unlikely that improved resourcing alone would enable implementation of such a plan or even ensure basic operations if there are not appropriately skilled and motivated staff in the NIP PFO.

NIP fisheries policy would likely centre on fisheries and aquaculture development underpinned by sustainable management of the resources and development of institutional capacity. Developing, let alone implementing, a full blown policy is an unrealistic challenge until basic institutional capacity is developed. It is proposed that the vision, goal and priorities from the draft FDP could be adopted as the shared policy statement or position in the interim period with a minimum of effort.

However, the NIPA may have the necessary leadership and an increasing will to prioritize and address coastal fisheries. NIP has a variety of strongly motivated and capable institutions in the academic, private and NGO sector which could support NIPA aspirations. With these two supporting elements there may be an opportunity.

This paper proposes building basic capacity for planning, management, financial control, monitoring and reporting through the development of a simple, though proactive, provincial fisheries extension service. This could provide the best opportunity to build administrative capacity and a service delivery mentality upon which future activities and policy can be built.

It is noted that, priority attention to future openings of the sea cucumber fishery could generate additional millions of kina for coastal and island communities through basic awareness of regulations and selected training events.

An initial one year action plan that establishes functioning extension services is proposed for support by NIPA that should be affordable with a combination of funds available from NFA, NIPA and WCS that would use one or two junior staff with mentoring from external organizations and aim to achieve:

- Annual work plan for basic extension services suitable for application for NFA grants;
- Key awareness and information to 80% of fishing communities;
- Specific awareness and training e.g. for sustainable harvest of sea cucumbers and post-harvest processing of beche de mer;
- Inventory of key issues from communities and needs for provincial planning or project identification;
- Identification of priority or suitable areas and entry or contact points for future projects and training; and
- Liaison with LLGs and Districts and the development of inputs to a Provincial Fisheries Development Plan.

## Contents

1	Coastal fisheries management policy framework.....	5
1.1	Coastal fisheries management policy in the Pacific Islands.....	5
1.2	Coastal fisheries management in Papua New Guinea .....	5
1.3	Main elements proposed for coastal fisheries management in PNG .....	7
2	New Ireland Province and coastal fisheries .....	8
2.1	Institutional context of coastal fisheries management in NIP .....	9
2.2	Implementing coastal fisheries management and development in NIP .....	10
3	Ways forward for NIP coastal fisheries management and sustainable development.....	14
3.1	Challenges and opportunity .....	14
3.2	Proposed way forward for the NIP .....	14
3.3	Start small: rebuild fisheries extension capacity .....	14
3.4	Learning by doing: a proposed way forward .....	16
4	Sources and acknowledgements.....	19
4.1	References .....	19
4.2	Government reports, policy and planning documents .....	19
4.3	Interviewees.....	20
4.4	Acknowledgements.....	20

## Acronyms

BdM	Bêche de mer / bislama	PFDP	Provincial Fisheries Development Plan
LLGs	Local-Level Governments	PDF	Project Development Funds
LMMA	Locally Managed Marine Area	PMAC	Provincial Management Advisory Committee
MSG	Melanesian Spearhead Group	PFO	Provincial Fisheries Office
MinPA	Minimum Priority Activities	PM	Prime Minister
MoU	Memorandum of Understanding	R&D	Research and Development
MPA	Marine Protected Area	RCFMA	Roadmap for Coastal Fisheries and Marine Aquaculture for Papua New Guinea: 2017 – 2026
NGO	Non-Government Organization	SDGs	Sustainable Development Goals
NIP	New Ireland Province	SPC	Pacific Community
NIPA	New Ireland Provincial Administration	UBA	Underwater Breathing Apparatus
NFA	National Fisheries Authority	WCS	Wildlife Conservation Society
NMAC	National Management Advisory Committee		

# Guidance for the Development of New Ireland Provincial Fisheries Policies

---

## 1 Coastal fisheries management policy framework

### 1.1 Coastal fisheries management policy in the Pacific Islands

In the Pacific Island Region and particularly in the Melanesian countries, the increasing fishing pressure on limited coastal resources exerted by a rapidly growing population is being exacerbated by access to improved or destructive fishing technology and the increasing need for cash. These pressures combined with increasing pollution, coastal development and the impacts of watershed activities such as mining and logging will impact the economic livelihoods and food security of coastal and island communities unless sustainable resource management is urgently undertaken.

The importance of increased attention to coastal fisheries management has been recognised at the United Nations (UN) level in the following recent policy and guidance:

- The Food and Agriculture Organisation (FAO) Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries (SSF) in the Context of Food Security and Poverty Eradication (SSF Guidelines 2015).
- UN Small Island Developing States (SIDS) Conference 2014 Accelerated Modalities of Action [S.A.M.O.A.] Pathway calls for “sustainable development of small-scale fisheries, improved mechanisms for resource assessment and management” (Art. 58h).
- The UN 2015 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs) include SDG 14, which references marine resource management and small-scale fisheries, in particular SDG 14.2 “sustainably manage and protect marine and coastal ecosystems”, 14.4 “effectively regulate harvesting, and end overfishing...”, 14.7 “increase the economic benefits to SIDS and LDCs from the sustainable use of marine resources”, 14.b. “provide access of small-scale artisanal fishers to marine resources and markets”.

The Pacific Island Forum leaders and respective ministries have in many ways taken global initiative and, starting well before 2013, put in place processes resulting in the following regional policies and declarations:

- Melanesian Spearhead Group (MSG) Roadmap for Inshore Fisheries Management and Sustainable Development 2015-2024 signed by Prime Ministers (MSG Roadmap 2015).
- The Noumea Strategy: A new song for coastal fisheries – pathways to change (Noumea Strategy 2015).
- Future of Fisheries: A Regional Roadmap for Sustainable Pacific Fisheries (Future of Fisheries 2015).
- Pacific Island Forum Leaders’ Communique 2016; article 10. (Leaders Communique on coastal fisheries).

There is strong international, regional and sub-regional commitment to sustainable management and development of coastal fisheries and recognition of their vital importance to livelihoods. The most notable policy is probably the MSG Roadmap which was signed by member countries’ Prime Ministers themselves.

### 1.2 Coastal fisheries management in Papua New Guinea

Control over PNG’s coastal fisheries resources is constitutionally vested in the people under customary ownership rules. PNG’s laws (the Constitution, the 2015 Maritime Zones Act, and the 1998 Fisheries Management Act [amended in 2015]) provide the State with sovereignty and territorial rights only to the national seas and acknowledge “rights of the customary owners of fisheries resources and fishing rights” (Govan et al. 2013, Gillett 2011).

The 1998 Fisheries Management Act (amended in 2015) defines the role and responsibilities of the NFA and empowers the NFA to manage, control and regulate all of PNG’s fishery resources, whether these be inland, coastal or offshore. The Act recognises customary uses, rights and traditional resource ownership, but it does not in itself empower provincial or LLGs to manage fisheries in what they may consider to be their areas of jurisdiction. However, these powers are covered under the 1995 Organic Law on Provincial and Local-level Governments which gives provincial governments the responsibility for fisheries, certain other development activities and the provision of basic services.

Govan et al. (2013) reported that only the Louisiade LLG in the Milne Bay Province had taken the opportunity to make its own regulations under the Organic Law and passed an Environment Bill in 2000, whilst the Maramatana LLG in Milne Bay Province drafted one with the assistance of the NGO, Conservation International, and is still waiting formalization through the Milne Bay Provincial Executive Council. The Talasea, Bialla, and Hoskins LLGs in West New Britain Province also developed Marine Environment Laws in 2004, again with assistance from a conservation NGO, The Nature Conservancy. The Lavongai LLG Marine Environment Management Law (NIP) was submitted to the Department of Provincial and Local Level Government in 2014 with assistance of Wildlife Conservation Society. Manus Province developed both a 1989 Manus Marine Resources Protection Act, and accompanying Regulations but it is not known if this is actually enforced or superseded by other later legislative instruments. More recently, the Manus PFO has developed the Manus Provincial Management Policy for the Fish Aggregating Devices (FADs). There is no indication of progress since 2013 in provincial fisheries management based on the Organic Law.

At the national level PNG has established a large number of policies that specifically relate to fisheries management, these include: National Aquaculture Policy, National Tuna Long-line Policy and a National FAD (Fishing Aggregating Device) Management Policy, but until 2017 there was no specific coastal fisheries management policy. Fisheries management plans in PNG are prepared under the authority of, and in accordance with, Section 28 of the 1998 Fisheries Management Act (amended in 2015) and include:

- National Tuna Management Plan (amended in 2014)
- National Beche-de-mer Management Plan (amended in 2016)
- Barramundi Fishery Management Plan
- Torres Strait and Western Province Tropical Rock Lobster Management Plan
- Gulf of Papua Prawn Fishery Management Plan
- National Shark Long-line Fishery Management Plan
- National Live Reef Food Fish Fishery Management Plan (drafted, and reviewed in 2009 to incorporate Ecosystem Approaches to Fisheries Management)
- National Aquarium Fishery Management Plan (draft).

Mechanisms that the NFA uses to support sustainable development and management of coastal fisheries and marine aquaculture with the provinces include:

- Memoranda of understanding (MoUs) between NFA and Provincial Fisheries Offices/Authority (PFOs/A)
- Provincial Fisheries Grants to PFOs
- Provision of Project Development Funds (PDF)
- Micro-financing arrangements with various agencies
- Provincial fisheries planning support.

The MoUs (previously referred to as Memoranda of Agreement) intend to provide a framework for support by NFA for certain statutory functions undertaken by PFOs (e.g. hosting of staff, inspections, supervision, certification, licencing, surveillance) and commitment by NFA to fund these and specific projects or grants<sup>1</sup>. NFA agrees to support internet costs, communications, a computer/printer and allocate PGK35,000 annually to “Provincial Fisheries Administration and extension functions” as per the Annual Provincial Work Plan (APWP). These MoUs are functioning and disbursing funds to the provinces which solicit them up to around PGK100,000, only requiring a cover letter from the Provincial Administrator and costed work plan.

Some Provincial Fisheries Grants, ranging from PGK 1-3 million each year, have been disbursed subject to 5 year Provincial Fisheries Development Plans (PFDPs/PDPs) prepared by the Provinces with NFA support. By the end of 2015 most provinces had finalised PFDPs, but low capacity to request or administer these funds as well as some instances of misuse seem to have limited their accessibility or implementation and as of 2017 it is not clear how many are active (Ilakini 2015, Barclay et al. 2016). Most recent changes in allocation of NFA revenue by Government will likely reduce the likelihood of disbursements in the short or medium term.

Project Development Funds (PDF) valued at up to PGK 100,000 were openly contestable on application (to communities, individuals, commercial groups, small businesses), subject to endorsement by PFOs. Initial disbursements have been followed by a moratorium while guidelines are reassessed due to accountability issues.

---

<sup>1</sup> For the rationale and evolution of the MoAs see Benson, C.S. 2012. Shifting accountabilities? Understanding the connections between national and provincial fisheries in Papua New Guinea. *Marine Policy* 36. 859-866.

PNG has a full suite of legislation and policy which lays out the roles of national government and provinces in coastal fisheries management, provides opportunities for the involvement of districts and local-level governments (LLGs) and offers further opportunities for provincial level funding. The main instruments are NFA-Provincial MoUs based on Annual Provincial Work Plans and Provincial Fisheries Grants subject to Provincial Fisheries Development Plans, but so far implementation and operation of these mechanisms has been challenging.

### 1.3 Main elements proposed for coastal fisheries management in PNG

In response to ministerial directive as well as national and international policy, the NFA developed a Roadmap for Coastal Fisheries and Marine Aquaculture for Papua New Guinea: 2017 – 2026 (RCFMA).

The RCFMA summarised the status of coastal fisheries in PNG in a few words:

**“Coastal fisheries development has not met expectations and coastal resources are yet to be sustainably managed”.**

The RCFMA uses the MSG Roadmap as a framework and is aligned with the 2015 Noumea Strategy, the 2015 Future of Fisheries and the 2015 FAO SSF Guidelines. The RCFMA provides a strategic management and development framework for coastal fisheries and marine aquaculture in PNG taking into account various PNG development strategies, the NFA Corporate Plan, and provincial plans and policies. It intends to ensure joint implementation in provinces through MoU arrangements and joint workplans.

The RCFMA proposes the following key approaches:

- Maximise the potential of communities and clarify roles in collaboration with PFOs.
- Provide relevant information to community and government managers incorporating traditional knowledge and best scientific advice.
- Re-focus fisheries agencies to support local coastal fisheries management across thousands of PNG communities with strategic funding and support for provinces through jointly developed provincial plans and against measurable outcomes.
- Ensure wider policy impacts through partnerships and better collaboration with other government and non-government agencies to assist in achieving integrated coastal management, seascapes and marine managed area outcomes.

The RCFMA implementation plan is based on the three key objectives:

1. **Establish an enabling environment** to fully implement effective policies, legislation, management frameworks, coordination and financing mechanisms.
2. **Ensure suitable capacity development and access to information** for capacity building, education and awareness-raising activities, and ensure the provision of information for the management and sustainable development of coastal resources and marine aquaculture by all stakeholders, with a particular emphasis on women and youth.
3. **Manage coastal resources for sustainable development** and maintain and restore coastal resources to secure long-term social and economic benefits for coastal and island communities.

In practical terms the implementation matrix of the RCFMA (Annex 1) will rely on two initial thrusts: the improvement of the enabling environment to be carried out by national and government agencies and, almost in parallel, the provision of information and awareness to all communities and stakeholders to be carried out by provincial authorities with national support.

The implementation plan identifies priority actions for improving the support of NFA for more effective provincial coastal fisheries management including:

- Review and restructure NFA business units to better support coastal fisheries and provincial activities.
- Review and establish a coordinated financing unit and guidelines for provincial funding.
- Establish a Monitoring and Evaluation Facility and procedures.
- Initiate a provincial joint planning approach in each province to achieve individual workplans under the provincial MoUs.
- Review and prioritise current service delivery activities at national and provincial levels to greatly increase area coverage of support for coastal fisheries management.

- Review and strategize affordable staff levels required at national and provincial/district/LLG levels, and strategically align roles of NFA staff to support provinces.

This emphasis on provincial service delivery by and for the provinces meshes with Budget and Expenditure instructions issued by the Secretary for Treasury (National Economic & Fiscal Commission 2017 Budget Fiscal Report), calling for provinces to adequately fund eleven specific service delivery activities. The eleven activities identified as a basic provincial responsibility across the nominated five key function grant categories of Agriculture, Education, Health, Transport Infrastructure and Village Courts are known as Minimum Priority Activities (MinPAs).

Provincial governments must create identifiable activity codes for each MinPA in their respective budgets and request performance reporting from sector managers. The MinPAs include “Extension activities for fisheries” and the indicators: i. Number of extension patrols conducted by provincial government staff and ii. Number of people who attended extension sessions.

There is a strong onus on national and provincial authorities to move forward in implementing effective coastal fisheries management. The intention for this to be supported by NFA is clear; however there is also responsibility for provinces to move ahead on this regardless. The main areas of work fall under the umbrella of “extension activities” i.e. functions which provide a connection from provincial authorities to all coastal communities which will provide the basis for community action and joint development strategies.

## 2 New Ireland Province and coastal fisheries

In the PNG context, the NIP is a relatively small province with a population just over 200,000, but due to its geomorphology, has the highest coastal population of all provinces (77%)<sup>2</sup> and the highest population growth rate of all but one of PNG’s provinces (4.5%)<sup>3</sup>. Unsurprisingly, the population is relatively dependent on fishing along the 1,330 km coastline and the various habitats (reef 139,000 ha, mangroves 15,000 ha). The population is distributed in the capital Kavieng and more than 300 villages around the island grouped into nine LLGs in 2 districts (Kavieng and Namatanai).

Various marine resources are harvested for subsistence, artisanal and commercial use, but most of the coastal fisheries production supplies protein to New Ireland residents. While many villagers catch food for the immediate needs of their dependents, small-scale catches are also bartered, traded and sold at local markets. There is evidence of overfishing and unsustainable resource use. The sea cucumber fishery has experienced the same boom and bust cycles<sup>4</sup> as in other provinces which necessitated the national moratorium placed from 2009-2017. Other highly valued invertebrates such as trochus, lobsters, mud crabs and green snails as well as reef food fishes are thought to have experienced declines<sup>5</sup>.

Devolution of fisheries management powers from the national to provincial governments is provided for under the auspices of the 1997 Organic Law on Provincial Governments and Local-level Governments, whereby lower level governments can make management regulations for natural resources under Sections 42 and 44. However, the most prominent examples of coastal fisheries management have been implemented by the NFA (e.g. the monitoring and enforcement of the national *bêche de mer* management plan) or NGOs (e.g. the support for community fisheries management plans in over a dozen villages). The challenges facing the NIP in terms of managing or developing fisheries have resulted in it being the only province in PNG that did not form a Provincial Management Advisory Committee<sup>6</sup> and the only province that did not finalize a PFDP. NIP did not solicit the basic administrative grant from NFA under the MoU. Factors suggested by interviewees to have played a role in this include the termination of the

<sup>2</sup> NFA/Earth2Ocean 2013. Strengthening in-country tropical marine resources management training capacity in Papua New Guinea and the Solomon Islands. An Ecosystem Approach to Fisheries Management curriculum, unit plans, course notes and teaching resources. Unit 6: PNG Coastal Fisheries. <http://studylib.net/doc/6948261/course-notes--part-2---marine-and-coastal-environmental-re...>

<sup>3</sup> PNG 2011 Census - 2011 National Census of Housing and Population - Papua New Guinea

<sup>4</sup> Hair, C.; Foale, S; Kinch, J.; Yaman, L. and Southgate, P. 2016. Beyond boom, bust and ban: case study of a sandfish (*Holothuria scabra*) fishery in Tigak Islands, Papua New Guinea. *Regional Studies in Marine Science*. 5: 69-79. [dx.doi.org/10.1016/j.rsma.2016.02.001](https://doi.org/10.1016/j.rsma.2016.02.001).

<sup>5</sup> NIPA draft. New Ireland Fisheries Development Plan 2016 – 2020

<sup>6</sup> Was approved in December 2017 after the sea cucumber fishery closure



Provincial Fisheries Adviser (PFA) in charge of drafting the PFDP, the lack of a replacement as well as higher level political issues between NIP and National Government.

## 2.1 Institutional context of coastal fisheries management in NIP

### 2.1.1 Provincial fisheries office

The PFO comprises 11 staff, of which three are based in Kavieng, 1 for each LLG in Kavieng District and Namatanai Districts. One LLG is currently without a fisheries officer and the key PFA role is currently vacant (i.e., the officer who was leading the development of the PFDP). Agricultural officers sometimes assist at the LLG level. All the officers have been on National Fisheries College (NFC) short courses, around half have received NFC certificates in Tropical Fisheries Ecology and none have university degrees or overseas training.<sup>7</sup>

NIPA staff stated that salaries are provided as a specific grant through the national Department of Personnel Management (DPM) and it is not general practice for the New Ireland Provincial Administration (NIPA) to fund staff directly, this makes hiring and firing more difficult. The operational budget was reported by fisheries staff to be in the order of PGK 40,000, but there was no workplan or budget sheet and it was not possible to verify any programmed expenditures. NIPA as part of their “bottom-up approach” concentrate attention on the placement of staff at LLG level but have been unable to obtain feedback to provincial level for planning purposes.

The NFA has not received from the PFO a workplan or request for the administrative grant under the MoU from NIPA or requests to access PFGs. A PDF was last received in 2014. The NIPA submitted proposals to NFA for PDFs in 2015-2016 totalling over PGK 1 million, but the PDF program was put on hold pending a review by NFA. The PFO currently has no boats or engines and one vehicle provided by NFA funding. The PFO building is in serious disrepair and does not provide an adequate working environment, though there are suggestions that it will be renovated.

Current activities are dependent on external project funding (e.g. through NGOs) or a limited number of sporadic initiatives such as monitoring and control supported and largely carried out by NFA when the bêche de mer fishery is scheduled. The above has not created an environment conducive for routine or indeed any other operations of the NIP PFO and this long-running situation may account for the demoralization, possibly irretrievably, of the majority of staff. As noted by Chapman (2014), there may be some potential for capacity building and institutional strengthening of existing staff, particularly the youngest recruits, but Chapman and senior NIPA staff concur that an injection of new staff with appropriate skills would be very important if not vital, though difficult to do unless the proposed NIPA restructuring process opens some new opportunities.

Neglect has led to a decayed and inadequate infrastructure for the NIP PFO and provincial fisheries administration and staff with little motivation or experience of productive and strategic work practices. With the possible exception of some of the younger staff it is unlikely that improved resourcing alone would enable adequate operations or implementation of a provincial plan (if there were one).

### 2.1.2 New Ireland Provincial Administration (NIPA)

In the last two years the NIPA enjoyed the influx of Chief Executive Officers and Directors for various line departments. There is an ongoing process of restructuring of the administration as well as development of policy and strategies with recognition of the importance of coastal fisheries and the need to radically change and improve the human resources dedicated to this. A recognised challenge is the line management and recruitment of PFO staff.

The Acting Provincial Administrator himself previously worked for NFA and the Forum Fisheries Agency and in matters pertaining to fisheries is supported by the CEO for Economic Services and the Director of Primary Industry (fisheries, forestry, environment and climate change).

According to PNG's 2017 national budget the government grant to the NIPA is around PGK 100 million per year, about 60% of which is spent on personnel (mostly teachers). These figures do not take into account other potential sources of revenue such as mining licences or taxes.

The NIPA is going through a restructure and appears to have the necessary leadership and, increasingly, will if it wished to prioritize and address coastal fisheries. This would be vital to driving staffing improvements or specific

<sup>7</sup> Rikis, M. 2106. Training needs analysis report for provincial fisheries offices in the Maritime provinces of Papua New Guinea. Report to National Fisheries College

policy or workplan commitments. Relations with NFA bear improvement and could produce more mutually beneficial outcomes.

### **2.1.3 National Fisheries College (NFC)**

The most important institution in PNG for education related to fisheries is the NFC, which is a Business Unit of the NFA and is located in Kavieng. The NFC provides training in: commercial fisheries, including courses for skippers and deckhands, post-harvest aspects of fisheries, on-vessel observing, business aspects of fisheries and other occasional and tailored subjects. The NFC also de facto supervises the Nago Island Mariculture and Research Station which carries out work relevant to mariculture, sea ranching and handicrafts.

The NFC provides an exceptional resource, not immediately available to most provinces, including a concentration of technical expertise and exchanges with other provinces and countries. Laboratories, library and recording and communications equipment are available providing excellent opportunities to support specific requests or needs formulated by the PFO.

### **2.1.4 Wildlife Conservation Society (WCS)**

WCS is an international conservation NGO active across Melanesia with programmes in PNG, Fiji, and the Solomon Islands. WCS has had a steady presence in the NIP and currently operates with four permanent and one part-time staff. WCS's budget is variable and depends on fund raising success and current projects – this dictates to some extent the precise focus of activities from year to year. Work so far has been with 13 communities in the Kavieng District (i.e. northern NIP) and has recently added seven communities with a focus on mangrove resources. The most recent project funded for three years covers Manus and the Solomon Islands as well and aims to broadly address community capacity for marine spatial planning. The first activity consisted of community consultations and mapping which intended to cover all communities in the Kavieng District and was carried out in collaboration with the NIP PFO.

WCS provides a small but energetic team with access to further expertise from their headquarters in Goroka in the Eastern Highlands Province and the WCS network regionally and globally. WCS has transport in the form of one vehicle, one dinghy with an outboard motor and functional computing and communications equipment with relevant geographical information and database systems. Particularly relevant expertise includes community facilitation and survey skills, biological assessment capacity and education and awareness materials.

### **2.1.5 Ailan Awareness / Solwara Skul**

Ailan Awareness is a local NGO founded in 1993 that specializes in community-based marine conservation. Ailan Awareness' co-founder, John Aini, has recently established the Solwara Skul in collaboration with Prof Paige West of Columbia University with the objective of teaching traditional and western knowledge. A small facility is available on the outskirts of Kavieng with ongoing projects that support a number of communities, information materials and the skills to deliver these and formal training to communities and fisheries officers.

### **2.1.6 Private sector**

Opportunities for collaboration and support exist within the private sector. The Nusa Island Resort has good relations with surrounding communities and is a potential collaborator on ventures of mutual interest, specifically surf management plans. Several beche de mer traders expressed interest in supporting communities to sustainably manage their sea cucumber harvests and provide training and materials for improved processing provided that communities undertook to sell their product to these traders.

NIP has a variety of motivated and capable institutions in the academic, private and NGO sector with interests and capacity which broadly match the interests and needs of the NIPA. These currently counterbalance the lack of capacity of the PFO, but could serve to supplement or, ideally, contribute to building a reinvigorated PFO.

## **2.2 Implementing coastal fisheries management and development in NIP**

### **2.2.1 Policy, strategy and work-planning**

The importance of coastal fisheries and strategies to manage or regulate their exploitation have been acknowledged by New Ireland inhabitants since pre-colonial times, as evidenced for instance by implementation of prohibitions on

fishing or gleaning within a specific reef area following the death of a village leader, landowner, or other person of significance in order to allow stocks to rebuild<sup>8</sup>.

Coastal fisheries management and development was supported in colonial times and Kavieng hosted a fisheries research centre and extension staff. Fisheries extension still reputedly functioned relatively well post-independence and the PFO had a support staff of 11 men in 1980 (the same as 2018)<sup>9</sup>.

A Provincial Fisheries Policy and Plan for 2002-2006 was drafted around 2001 following the establishment of the Division of Fisheries and Marine Resources in 2000. Details of the implementation of this plan are not available but the document would still be relevant today. Amongst other things it emphasized the importance of recruiting personnel to “To achieve the level of extension services required”<sup>10</sup>.

The NIP has been the beneficiary of a variety of coastal fisheries projects in the 2000s including the Asian Development Bank (ADB) funded Coastal Fisheries Development and Management Project, the European Union-funded Rural Coastal Fisheries and Development Program, and a variety of NGO and government initiatives. These projects have produced notably large volumes of socio-economic and biological data, information and awareness materials, stock assessments and even management plans<sup>11</sup>.

Since at least 2013 the need for NIPA to develop a coastal fisheries and aquaculture management and development strategy has been reiterated<sup>12</sup> and work started on a “New Ireland Fisheries Development Plan 2016-2020 (NIFDP)” soon after. The satisfactory completion of this plan would have satisfied NFA requirements for access to grant funding, as would the completion of simpler (though potentially compatible) fisheries workplans such as an Annual Activity Plan (AAP). To date these plans have not been completed. WCS staff had been providing inputs to the draft NIPFDP but these were not actioned by the PFA and the process fell by the wayside. In 2016 the New Ireland Provincial Administration (NIPA) officially requested the Wildlife Conservation Society (WCS) to provide the Fisheries and Marine Resource Division of the Economic Services Department with technical assistance.

The lack of fisheries plan, strategy or workplan and the low budgets and motivation by PFO staff, while an indicator of low political and administrative support (at least historically), do not represent the major obstacle. As noted in previous studies<sup>13</sup>, basic capacity for planning, management, financial control and reporting would be required as a first priority. The highest priority should be accorded to building the basic skills to plan, operate and administer a PFO and to effectively break free of a legacy of poor practice a significant injection of new staff will likely be needed.

### **2.2.2 Economic opportunities in coastal fisheries: bêche de mer**

NIPA and communities have long been concerned to explore increased economic returns from coastal fisheries. Recurring themes include improving transport, access to markets, points of sale and fisheries depots, sea food processing plants, new fisheries such as deep sea snappers, sea ranching e.g. of mud crabs, Fish Aggregating Devices (FADs), sea weed and sea cucumber farming – the last three of which have been supported under various projects.

Although the purpose of the present document is not to carry out a feasibility study of available development options, none of the options discussed have shown particularly encouraging signs of success over the last decades in

<sup>8</sup> Wright, A. 1985. Marine Resource Use in Papua New Guinea: Can Traditional Concepts and Contemporary Development be Integrated. Pages 53-77 in K. Ruddle, and R. E. Johannes, editors. The Traditional Knowledge and Management of Coastal Systems in Asia and the Pacific. UNESCO, Jakarta Pusat, Indonesia.

<sup>9</sup> Bernstein, H., 2014. Securing Village Life: Development in Late Colonial Papua New Guinea, by Scott MacWilliam. Canberra: ANU (Australian National University) E Press, 2013. Pp. xi+ 306.; Wright, A., Chapau, M.R., Dalzell, P.J. and Richards, A.H. 1983. The marine resources of the New Ireland Province. A report on present utilisation and potential for development. Department of Primary Industry, Fisheries Research Report 83–13. 54pp; Interviews from the present study

<sup>10</sup> NIPA 2001 First Edition: New Ireland Provincial Fisheries Policy and Plan. 2002-2006. New Ireland Provincial Administration.

<sup>11</sup> E.g.: Anon. 2000. New Ireland Province beche-de-mer management plan workshop 31/1–1/2/2000. National Fisheries Authority and the New Ireland Provincial Government. Report. 23 p; Hair, C. and Aini, J.W. 1995. National and provincial fisheries data collection project. 1994 fisheries statistics report. New Ireland Province. Research and Surveys Branch, National Fisheries Authority, Technical Report 95–04/2. 37pp; NFA/CFMDP 2005 Small-scale-fisheries related socio-economic surveys in New Ireland Province. National Fisheries Authority / Coastal Fisheries Management and Development Project ADB; NFA/CFMDP 2007 Sea cucumber survey, New Ireland Province. . National Fisheries Authority / Coastal Fisheries Management and Development Project ADB.

<sup>12</sup> Chapman, L. 2014. Development options for New Ireland Province based on coastal fisheries and aquaculture: Report to the New Ireland Provincial Administration. SPC-FAME

<sup>13</sup> Chapman 2014 op. cite.

the NIP and are generally considered a challenge elsewhere in Melanesia<sup>14</sup>. Strategic and widespread implementation and ongoing support of “low-hanging fruit” such as FADs will be subject to the successful resolution of the variety of challenges confronting coastal fisheries administration in NIP discussed above.

The increasing need for communities to generate cash will continue to be a major driver for the efforts of the NFA, the NIPA and other stakeholders and compared to the research and development uncertainties inherent in the majority of alternatives mentioned above the sea cucumber fishery and beche de mer trade appears to offer the most immediate likelihood of increased income - if management and processing can be improved.

The beche de mer trade has been one of the main sources of income for coastal fishers in PNG for more than 150 years<sup>15</sup> but in recent decades increasing pressure has led to severe depletion of the resource resulting in a moratorium from 2009-2017 to allow stock recovery.

In preparation for the lifting of the moratorium in 2017, the NFA revised the previous beche-de-mer management plan, which was approved in 2016, and which set provincial total allowable catches (TACs) and minimum size limits among other harvest controls and set a date for the fishery to open on the 01<sup>st</sup> of April 2017. The fishery opened as scheduled and the TAC for the NIP was exceeded by nearly double. Exports of fully dried beche de mer from the NIP alone were estimated to be 79 tonnes, worth PGK 8.5 million of which up to PGK 5 million likely accrued to fishers and communities<sup>16</sup>. The fishery was closed on the 26<sup>th</sup> of May 2017 because the TAC had been exceeded and is scheduled to re-open after 31<sup>st</sup> May 2018.

Despite the large tonnage landed, the 2017 fishing season was not regarded as a success. Due in part to the length of time since previous experience in processing beche de mer as well as a lack of awareness and training, fishers generally produced very poor quality product which required reprocessing by buyers or exporters, or was outright rejected. Lack of awareness also resulted in major harvests of undersized sea cucumbers and in some harvest areas it is thought that all sea cucumbers were harvested in a “clean sweep” approach regardless of size. The majority of undersized sea cucumbers are thought to have been rejected by buyers and subsequently dumped or sold through illegal trade routes. The lack of accurate records or estimates of rejects are unlikely to become available and therefore impacts in terms of value lost or stock recovery potential will be a challenge.

Exporters and other observers consider that the fishery could have generated nearly double the value for local fishers had quality and sizes been strictly controlled and it is likely that the stocks have been harvested heavily which will not be sustainable in the longer-term. Addressing the loss of this cash in hand, potentially available to any coastal and island community with access to appropriate habitats, would represent the most obvious opportunity for enhancing income from coastal fisheries if there are feasible management actions to be implemented.

Improvements in the way that the sea cucumber fishery in 2017 was managed could be considered at both national and provincial level. Two relatively feasible activities were considered by interviewees to be able to greatly increase value and help ensure that communities can generate this value on a regular if not yearly basis:

1. Ensure that fishers are aware that undersized sea cucumbers will not be purchased and will go to waste and therefore lost to subsequent harvests or repopulation of stocks.
2. Ensure that fishers and other stakeholders are aware of the added value of well processed bêche de mer and are trained in processing techniques.

Both these strategies can be implemented relatively simply through communications, awareness and training approaches - provided, as is the case, that enough advance warning is given prior to the open date. These two areas, addressable through communications and public awareness, are fundamental and relatively easy to ensure - constituting the most basic services which fisheries agencies should deliver as reaffirmed by regional and national policy.

---

<sup>14</sup> See for example Carleton, C., 1983. Guideline for the Establishment and Management of Collection, Handling, Processing, and Marketing Facilities for the Artisanal Fisheries Sector in the South Pacific Commission Area. SPC 15th Regional Technical Meeting on Fisheries. Gillett, R. and Cartwright, I. 2010. The Future of Pacific Fisheries. SPC, Noumea.

<sup>15</sup> Russell 1970, Kinch in draft. Chapter 9: Management of the Sea cucumber Fishery and the Beche-de-mer Trade

<sup>16</sup> National Fisheries Authority preliminary data.

This sort of work is considered core to fisheries extension defined as “all organized communication efforts by which an individual or agency tries to bring about changes in the knowledge, attitudes, skills and/or behaviour of a client population..”<sup>17</sup>.

In addition to the vital tasks of ensuring awareness of the basic regulations and value adding techniques some communities might explore local management options with or without guidance from Fisheries or Non-government agencies but this would not be the first order of business for the new extension services:

- In the medium term explore how best to support community based management approaches in which communities regulate access to their local sea cucumber stocks, locally enforce size limits, quota or other rules and possibly implement reserves for brood stock or ranching undersized sea cucumbers until future seasons.

The development of a basic, though proactive, provincial fisheries extension service could generate additional millions of kina for coastal and island communities in the NIP from the sea cucumber fishery and beche de mer trade.

---

<sup>17</sup> FAO, 1993. Guidelines on fisheries extension (in the Bay of Bengal Region). FAO, Rome. Johannes, R. E. 1994. Design of tropical nearshore fisheries extension work beyond the 1990s, pp. 162-174. In: R. South, D. Goulet, S. Tuquiri and M. Church (eds.) Traditional Marine Tenure and Sustainable Management of Marine Resources in Asia and the Pacific. International Ocean Institute - South Pacific, Suva.

### 3 Ways forward for NIP coastal fisheries management and sustainable development

#### 3.1 Challenges and opportunity

The list of deficiencies to be remedied on the road to effective coastal fisheries administration in NIP is a long one including the usual; budgetary, infrastructure and transport constraints, as well as the need for policy, strategies and work plans.

The draft NIP Provincial Fisheries Development Plan gives indications of priorities but remains uncompleted and it is considered unlikely that improved resourcing alone would enable implementation of such a plan or even ensure basic operations if there is not appropriately skilled and motivated staff in the NIP PFO.

NIP fisheries policy would likely centre on fisheries and aquaculture development underpinned by sustainable management of the resources and development of institutional capacity. But developing, let alone implementing, a full blown policy is an unrealistic challenge until basic institutional capacity is developed.

However, the NIPA may have the necessary leadership and an increasing will to prioritize and address coastal fisheries. NIP has a variety of strongly motivated and capable institutions in the academic, private and NGO sector which could support NIPA aspirations. With these two supporting elements there may be an opportunity.

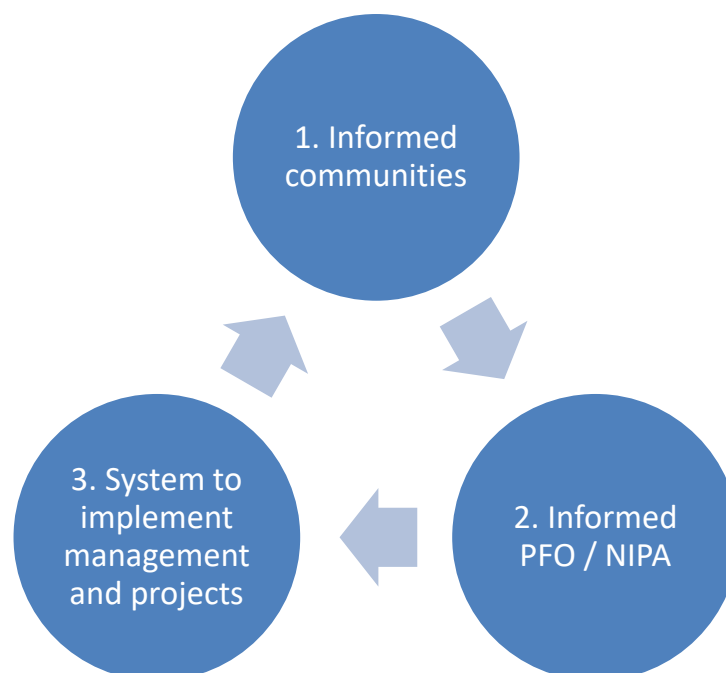
#### 3.2 Proposed way forward for the NIP

With regards to Provincial Policy it is proposed that the vision, goal and priorities from the draft FDP could be adopted as the shared policy statement or position for the short term with a minimum of effort.

It is vital to first build administrative capacity and a service delivery mentality upon which future activities and policy can be built. This paper proposes building basic capacity for planning, management, financial control, monitoring and reporting through the development of a simple, though proactive, provincial fisheries extension service.

An initial one year action plan that establishes functioning extension services in the broad sense described below is proposed for support by NIPA and should be affordable with a combination of funds available from NFA, NIPA and WCS focusing on one or two junior staff with mentoring from external organizations.

Pursuing this pragmatic approach should provide valuable services to communities, lay the foundation for future work and produce information and experience to inform a final draft of Provincial Policy or Fisheries Development Plan. It would also mesh with the possible implementation of the national RCFMA.



#### 3.3 Start small: rebuild fisheries extension capacity

Provincial coastal fisheries management and development depends on the implementation of a number of priority actions by the NIP PFO and some assumed actions and reactions from fishers and communities. Because all too often

there is lack of clarity on the priority actions to be undertaken, fisheries staff from MSG Member countries attempted to clarify this in the elaboration of regional and national policy (Annex 2). These are reflected in regional policy and the RCFMA; the proposed steps for the NIP while responding to the results of the present study also provide a solid response to these policies.

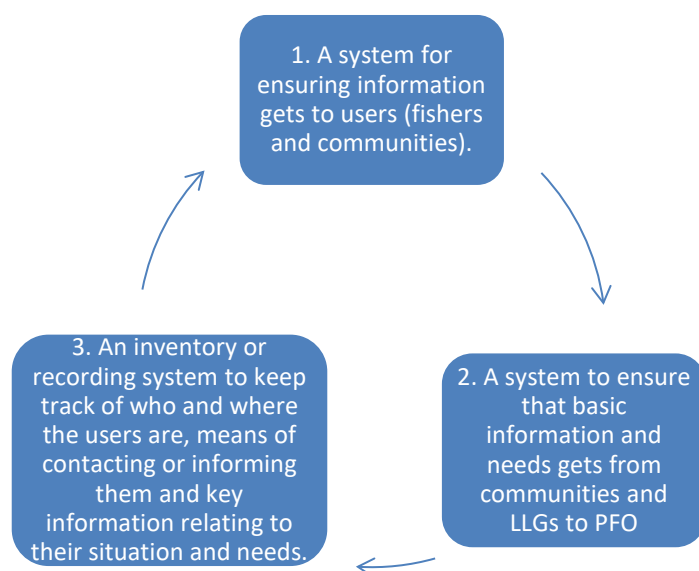
Extension services are the backbone of interactions between the NIP PFO and local fishers and communities and are regarded as the priority and a core of the RCFMA. Furthermore, provision of essential information is the most cost-effective means of increasing community participation and self-reliance across all NIP communities – which is a priority of the NIPA.

### 3.3.1 Rationale

The public service delivery element is one of the least often highlighted but most important functions. A shift towards public service delivery and the simple planning and administration that basic service delivery requires should be a relatively simple, achievable and therefore empowering experience as it would prove rewarding for motivated staff and provide early wins in terms of improving the public profile of the NIP PFO/NIPA as well as early wins in terms of better communications and information.

### 3.3.2 Characteristics of an extension service

The need for this core function has been made clear in regional and national policy and in its simplest form would include:



### 3.3.3 Core extension services

This extension service would be able to support the following activities as needed, with or without additional resources and in collaboration with the NIP PFO and other NIPA departments depending on circumstances:





### 3.3.4 Requirements

The basic requirements for this strategy must be minimum to ensure sustainability in the long term:

- **Low budget:** Cost effective means of ensuring communications and awareness, strategic use of limited transportation, sharing costs with other agencies and NIPA departments and the existence of many materials and inputs from the NFA and NGOs mean that the budget for basic operations could be relatively low (PGK20,000-30,000<sup>18</sup>).
- **Protected budget administration:** In the short term it will be necessary to ensure that the extension staff are able to plan and implement against a budget which is available and not prone to reallocation by third parties. As a stopgap it may be possible for operational funds to be channelled by an NGO partner or perhaps NFC/NFA.
- **Lead staff:** one or two PFO staff. The primary requisite is that they be motivated by the mission, probably young, dynamic and not corrupted by previous bad public service apathy. Very basic skills in writing, communications and use of computers and media are necessary but otherwise no other qualifications except a good sense of community realities would be needed.
- **Mentor/advisers:** Close mentorship of the PFO lead staff would be necessary particularly at the outset to provide support and a sounding board for planning and ideas. Suitable staff are available from WCS, the NFC and perhaps other organizations.
- **Commitment to support or ensure that the process is not distracted:** Though this is not intended to be a high profile intervention it will need to be given priority by those involved so that timelines are met and communities are not disappointed. If the process appears successful then interference may increase. It is important that the NIPA and others undertake to ensure this core service is maintained.
- **Active engagement of NIPA:** The extension service is vital to NIPA plans and future effectiveness. It will be important for the appropriate staff at NIPA to be informed and interact when necessary
- **Oversight body or working group:** Comprising all key stakeholders and the lead staff. The Technical Working Group (TWG) that has been formed to advise on the development of fisheries policy may be a good start.

## 3.4 Learning by doing: a proposed way forward

The overall intent is to kick start basic programs of work at the PFO starting by establishing essential extension services to be implemented by a small dynamic team within the PFO and supported by key local stakeholder agencies.

For the first year any small amount of funding available from the Provincial Government will need to be matched or supplemented by NGO/donor funds. The total amount should not surpass that which could be reasonably adopted

<sup>18</sup> Too be confirmed with WCS field staff and NIPA



into provincial government budgets in the future. The objective would be to provide practical justification of realistic amounts that should be included in the next provincial budget cycle. Potentially an NFA grant could be explored based on a work plan adapted from this document and the first planning meeting.

### 3.4.1 Objective

The objective and outcomes of the initial year would be:

Establish and implement cost effective strategies to ensure that key information regularly reaches the majority (e.g. 80%) of NIP coastal and island communities and key information and issues from communities and LLGs/Districts are recorded for use by the PFO.

### 3.4.2 Outcomes

- Annual Activity Plan (AAP) or work plan for submission with the TWG, with possible submission to the NFA for funds to assist in implementation.
- List and inventory of island and coastal communities from available data with known information on contact points and other relevant facts
- Selection of different methods and approaches to provide information and awareness to coastal and island communities in the NIP.
- Preliminary screening and compilation of key messages and available information resources to be used through the different methods above.
- All communities (e.g. 80% in year 1) regularly receive information from at least three different approaches.
- One information campaign is carried out (e.g., sustainability of sea cucumber fishery and better processing practices).
- Experience evaluated and successful features incorporated into ongoing work plans, provincial budgets and policy.
- TWG explore potential for other or increased access to NFA grants or other funding sources and options for further development of annual work plans or policy.
- Clarification of community fishing rights and responsibilities contributes to WCS work on zoning/spatial planning.
- Compile experiences and inputs and consider finishing the PFDP if appropriate (e.g. if NFA grants are likely).

### 3.4.3 Key steps

1. Identify the most dynamic and interested individuals in the NIP PFO.
2. Form a small lead team or individual with liaison/support officers from other agencies and the TWG.
3. Lead team design the “strategy” comprising:
  - a. List and record keeping of coastal and island communities (cf. WCS GIS data)
  - b. Collection of available information materials (e.g., radio recordings, comics, posters, books, leaflets etc.) and joint assessment of appropriate messaging.
  - c. Brainstormed possible means of ensuring information reaches communities and match the best choices of these against the list of communities<sup>19</sup> (see Box 1).
  - d. Draft workplan to achieving full coverage (e.g. 80%) of all coastal and island communities in the NIP.

Box 1: Examples of cheap ways to deliver information to communities and fishers

- District, ward and LLG staff and structures
- Use of associations and cooperatives
- NBC Radio Station
- Multi-village gatherings e.g. markets, sport, churches
- Youth or women’s groups, and the NIPA’s Department of Community Development
- Shared transport with other sectors
- Clinics and schools
- Billboards
- Exchange visits, counterparts

<sup>19</sup> The local NBC radio station has at least two slots appropriate to extension topics; Didiman and Gavman toktok. It is thought that villagers still listen to radio a lot. For Namatanai district E. New Britain Radio FM 100 will need to be used as NBC does not cover.

- e. Set up routine liaison and coordination with LLG and District meetings.
- 4. Implement the strategy over the year.
- 5. Prepare for the opening of the sea cucumber fishery and implement targeted information campaign sufficiently in advance of the open date (e.g., critical information including processing, prices, regulations etc.).
- 6. In the longer term the extension system would be used for identifying key areas for more intensive support in terms of development and livelihood priorities (e.g. FADs, market access, etc. ).

#### 3.4.4 Next steps

The basic approach is outlined above. The value of the approach would derive mainly from the inputs and ownership developed by the implementation team. If the approach is supported and steps 1-2 progress, then a series of joint planning exercises can develop the detail into a workplan based on local knowledge and opportunities (see Govan 2013 for an example of this).

Momentum achieved in the first year may allow the compilation and consideration of the proposals contained in the draft PFDP and development of these. Depending on support and momentum this may result in the finalization of a draft policy and outline work plan.

## 4 Sources and acknowledgements

### 4.1 References

- Anon. 2000. New Ireland Province beche-de-mer management plan workshop 31/1–1/2/2000. National Fisheries Authority and the New Ireland Provincial Government. Report. 23 p
- Barclay, K., Kinch, J., Fabinyi, M., EDO NSW, Waddell, S., Smith, G., Sharma, S., Kichawen, P., Foale, S. and Hamilton, R.H. 2016. Interactive Governance Analysis of the Bêche-de-Mer 'Fish Chain' from Papua New Guinea to Asian Markets.
- Benson, C.S. 2012. Shifting accountabilities? Understanding the connections between national and provincial fisheries in Papua New Guinea. *Marine Policy* 36. 859-866.
- Bernstein, H., 2014. *Securing Village Life: Development in Late Colonial Papua New Guinea*, by Scott MacWilliam. Canberra: ANU (Australian National University) E Press, 2013. Pp. xi+ 306.
- Chapman, L. 2014. Development options for New Ireland Province based on coastal fisheries and aquaculture: Report to the New Ireland Provincial Administration. SPC-FAME
- Govan, H. 2013. Strategy for Provincial Government implementation of the NPOA: Progressively building capacity for Community Based Resource Management +. Report for SIG and PSLP under the Coral Triangle Initiative. <http://bit.ly/161Excp>
- Govan, H., J. Kinch and A. Brjosniovski 2013. Strategic Review of Inshore Fisheries Policies and Strategies in Melanesia: Fiji, New Caledonia, Papua New Guinea, Solomon Islands, and Vanuatu Part II: Country reports and data. Reports to the Secretariat of the Pacific Community for the Melanesian Spearhead Group, Noumea, New Caledonia. <http://bit.ly/1dhlxv4>
- Hair, C. and Aini, J.W. 1995. National and provincial fisheries data collection project. 1994 fisheries statistics report. New Ireland Province. Research and Surveys Branch, National Fisheries Authority, Technical Report 95–04/2. 37 p
- Hair, C.; Foale, S; Kinch, J.; Yaman, L. and Southgate, P. 2016. Beyond boom, bust and ban: case study of a sandfish (*Holothuria scabra*) fishery in Tigak Islands, Papua New Guinea. *Regional Studies in Marine Science*. 5: 69-79. [dx.doi.org/10.1016/j.rsma.2016.02.001](https://doi.org/10.1016/j.rsma.2016.02.001).
- Ilakini, J. 2015 Provincial Fisheries Development Plan Validation Exercise and Road Map Workshop. NFA/FFA
- NFA/CFMDP 2005 Small-scale-fisheries related socio-economic surveys in New Ireland Province. National Fisheries Authority / Coastal Fisheries Management and Development Project ADB.
- NFA/CFMDP 2007 Sea cucumber survey, New Ireland Province. . National Fisheries Authority / Coastal Fisheries Management and Development Project ADB.
- NFA/Earth2Ocean 2013. Strengthening in-country tropical marine resources management training capacity in Papua New Guinea and the Solomon Islands. An Ecosystem Approach to Fisheries Management curriculum, unit plans, course notes and teaching resources. Unit 6: PNG Coastal Fisheries. <http://studylib.net/doc/6948261/course-notes--part-2---marine-and-coastal-environmental-re...>
- NIPA 2001 First Edition: New Ireland Provincial Fisheries Policy and Plan. 2002-2006. New Ireland Provincial Administration.
- NIPA draft. New Ireland Fisheries Development Plan 2016 – 2020
- PNG 2011 Census - 2011 National Census of Housing and Population - Papua New Guinea
- Rikis, M. 2106. Training needs analysis report for provincial fisheries offices in the Maritime provinces of Papua New Guinea. Report to National Fisheries College
- Russell, P. 1970. The Papuan beche-de-mer trade to 1900. MA Thesis, University of Papua New Guinea, Port Moresby, Territory of Papua and New Guinea.
- SPC 1991. Principles of Extension and Communication Skills: A Manual for the Fisheries Extension Officers of the Pacific Islands. SPC.
- Wright, A. 1985. Marine Resource Use in Papua New Guinea: Can Traditional Concepts and Contemporary Development be Integrated. Pages 53-77 in K. Ruddle, and R. E. Johannes, editors. *The Traditional Knowledge and Management of Coastal Systems in Asia and the Pacific*. UNESCO, Jakarta Pusat, Indonesia.
- Wright, A., Chapau, M.R., Dalzell, P.J. and Richards, A.H. 1983. The marine resources of the New Ireland Province. A report on present utilisation and potential for development. Department of Primary Industry, Fisheries Research Report 83–13. 54 p.

### 4.2 Government reports, policy and planning documents

- Melanesian Spearhead Group Roadmap for Inshore Fisheries Management and Sustainable Development 2015-2024
- The Noumea strategy: A new song for coastal fisheries – pathways to change (SPC 2015)
- Future of Fisheries: A Regional Roadmap for Sustainable Pacific Fisheries (FFA 2015).
- Framework for a Pacific Oceanscape (2010).
- NFA 2017 Roadmap for Coastal Fisheries and Marine Aquaculture for Papua New Guinea: 2017 – 2026
- NIPA draft. New Ireland Fisheries Development Plan 2016 – 2020

## 4.3 Interviewees

### 4.3.1 Wildlife Conservation Society

- Annisah Sapul, WCS Programme Manager
- Sven Frijlink, WCS Scientist
- Tracy Boslogo, WCS Research Assistant
- Jacob Kimagl (GIS)

### 4.3.2 National Fisheries Authority

- Leban Gisawa, Business Manager
- Loren Dandava, Acting Inshore Fisheries Manager
- Bolton Towok, Industry Development Coordinator, Provincial Support Business Group
- Paul Lokani, consultant
- Vakuru Bola, Licencing
- Jeff Kinch, Principal National Fisheries College
- Noah Lurang, NFA Compliance Officer NIP
- Martina Rakatao, manager compliance

### 4.3.3 Provincial Fisheries Office

- Emanuel Tamba, Acting Provincial Fisheries Officer
- Waitas Lasaro
- Bernard

### 4.3.4 New Ireland Provincial Administration

- Lamiller Pawut OBE, Acting Provincial Administrator
- Gideon Bogisia, Director Primary Industry
- Benjamin Kimbe, CEO for Economic Services
- Richard Andia, Director Planning and Finance

### 4.3.5 Others

- Caroline?, NBC Radio station
- Eugene, ex-BDM buyer, member of NMAC
- Reinhard Mangels, BDM Exporter, Kavieng
- John Aini, Director Ailan Awareness / Solwara Skul
- Cyril Pagol, Kavieng, Customs Manager

## 4.4 Acknowledgements

The author gratefully acknowledges the welcome and support afforded by WCS, NFA, PFO and NIPA staff in Port Moresby and Kavieng.

## Annex 1: Implementation matrix for the Roadmap for Coastal Fisheries and Marine Aquaculture for Papua New Guinea (2017-2026)

The implementation matrix is based on the structure of the MSG Roadmap for Inshore Fisheries and is summarised on this page. Cross referencing between actions is indicated by **x.x.x** and major products are indicated in bold where they are mentioned. Activities that overlap with the provincial plan are **highlighted**.

<b>ACFF</b>	Annual Coastal Fisheries Forum	<b>MoUs</b>	Provincial Memoranda of Understanding with NFA
<b>BdM</b>	Bêche de mer	<b>MSG</b>	Melanesian Spearhead Group of Countries
<b>CBAs</b>	Cost Benefit Analysis	<b>NCMDP</b>	National Coastal Fisheries Management and Development Sector Policy
<b>CFMG</b>	Coastal Fisheries Management Group (NFA)	<b>PFP</b>	Provincial Fisheries Profiles
<b>CRIS</b>	Coastal Resources Information and Education Strategy	<b>TNIA</b>	Training Needs and Information Assessment
<b>M&amp;E</b>	Monitoring and Evaluation	<b>WSPF</b>	Workplans for the Strengthening of Provincial Fisheries
<b>MEF</b>	Monitoring and Evaluation Facility	<b>+++++</b>	Ongoing implementation

	Short term (2018)				Medium term (2022)				Long term (2026)			
	17/1	17/2	18/1	18/2	19	20	21	22	23	24	25	26
<b>Objective 1 Implement effective policies and financing mechanisms</b>												
<b>Outcome 1.1 Institute effective policies, legislation, institutional etc</b>												
Action 1.1.1 Refocus NFA structure and operations	CFMG	MEF										
Action 1.1.2 Development of NCFMDP				NCFMDP								
Action 1.1.3 Delegation of powers to subnational and communities				+++++ TNIA	WSPF	MoUs						
<b>Outcome 1.2 Implement an adequate resource mobilization program</b>												
Action 1.2.1 Increase efficiency of fisheries management service				Review	Review		Review	+++++	Review	+++++	+++++	Review
Action 1.2.2 Ensure sustainable and adequate revenue				Review	+++++	Review	◆					
<b>Outcome 1.3 Establish effective collaboration</b>												
Action 1.3.1 Development of partnership strategies with key agencies				ACF	ACF	+++++	ACF >	+++++	+++++	+++++	+++++	+++++
Action 1.3.2 Lesson sharing between MSG members				+++++	◆	+++++	+++++	+++++	+++++	+++++	+++++	+++++
<b>Objective 2 Capacity building, education, awareness raising and information</b>												
<b>Outcome 2.1 Information to coastal resource stakeholders</b>												
Action 2.1.1 Increase awareness				TNIA	CRIS	+++++	+++++	+++++	+++++	+++++	+++++	+++++
Action 2.1.2 School curricula						◆	+++++	+++++	+++++	+++++	+++++	+++++
Action 2.1.3 Political profile and increasing transparency				+++++			+++++	+++++	+++++	+++++	+++++	+++++
Action 2.1.4 Scientific information and research							PFPs	◆	+++++	+++++	+++++	+++++
<b>Outcome 2.2 Capacity building</b>												
Action 2.2.1 Development of capacity at subnational government level				+++++	TNIA	◆	◆	◆	◆	+++++	+++++	+++++
Action 2.2.2 Capacity of community leaders												
Action 2.2.3 Improve service delivery to subnational government						◆	+++++	+++++	+++++	+++++	+++++	+++++
<b>Objective 3 Manage, maintain and restore coastal resources</b>												
<b>Outcome 3.1 BdM stocks and coastal fisheries management</b>												
Action 3.1.1 Develop improved management systems for coastal fisheries												◆
<b>Outcome 3.2 Supplementary and Alternative Income Generation activities</b>												
Action 3.2.1 Roll-out of complementary sustainable livelihoods initiatives												◆

<b>Objective 1</b>	<b>Implement effective policies, legislation, management frameworks and financing mechanisms to sustainably develop and manage coastal resources.</b>		
<b>Outcome 1.1</b>	<i>Institute effective policies, legislation, institutional and management frameworks that empower provincial fisheries administrations and coastal and island communities to manage their coastal resources and marine aquaculture.</i>		
<b>Purpose</b>	Coastal fisheries rights, roles and responsibilities agreed and designated at community, district, provincial and national levels as appropriate and supported by policy and legislation resulting in more effective sustainable fisheries development and management.		
Actions	Key Activities	Outcomes	Outputs (yr/qt)
1 <b>Refocus NFA structure and operations</b>	<ol style="list-style-type: none"> <li>1. Establish <b>Coastal Fisheries Management Group (CFMG)</b> to ensure coordination within NFA</li> <li>2. Review and restructure NFA business units to better support coastal fisheries and provincial activities and capture this in the Corporate Plan</li> <li>3. Review and establish coordinated financing unit and guidelines</li> <li>4. Establish <b>Monitoring and Evaluation Facility (MEF)</b> and procedures</li> <li>5. Repost or hire staff as appropriate</li> </ol>	<ul style="list-style-type: none"> <li>• Responsibilities and structure of NFA Business Units for coastal fisheries clarified and coordinating approaches to building capacity, managing fisheries and implementing projects with provinces</li> <li>• Monitoring, evaluation and feasibility assessment of proposed and existing projects is carried out</li> <li>• Financing of provincial fisheries is strategic, coordinated and transparent – supporting implementation of the intent of this Roadmap</li> </ul>	<p>2017/2 <b>CFMG</b> established</p> <p>2017/3 NFA structure reflected in Corporate Plan</p> <p>2017/3 Financing reviewed</p> <p>2017/3 <b>MEF</b> and procedures established</p> <p>2017/4 Changes implemented</p>
2 <b>Development of National Coastal Fisheries Management and Development Sector Policy (NCFMDP).</b>	<ol style="list-style-type: none"> <li>1. <b>CFMG</b> lead and commission assessment of legislation and rights related to coastal fisheries management and marine aquaculture at national, provincial and local levels</li> <li>2. Agree recommendations for addressing any legislative gaps and barriers as well as incorporating other relevant policy priorities particularly environment, gender, youth, and climate change</li> <li>3. Information generated from pilots <a href="#">2.1.1</a> and <b>MEF</b> <a href="#">1.2.1</a> to inform NCFMDP</li> <li>4. Carry out national <a href="#">1.3.1</a> and subnational consultations <a href="#">1.1.3</a> on draft NCFMDP including First <b>Annual Coastal Fisheries Forum</b></li> <li>5. Finalize <b>National Coastal Fisheries Management and Development Sector Policy (NCFMDP)</b> and present to Board for approval</li> <li>6. Implementation of <b>NCFMDP</b> including necessary legal reforms</li> </ol>	<ul style="list-style-type: none"> <li>• An operational legal framework that clarifies the rights and responsibilities in coastal fisheries co-management particularly of communities as well as various levels of government.</li> <li>• Initiation of an ongoing partnership approach to working with different agencies and at different levels relating to coastal fisheries</li> <li>• A well informed and comprehensive sector policy serving as overall guidance</li> </ul>	<p>2017/4 Commission legal review</p> <p>2018/1 Draft legal review</p> <p>2018/2 Draft <b>NCFMDP</b></p> <p>2018/3 <b>NCFMDP</b> consultations complete</p> <p>2018/4 <b>NCFMDP</b> complete</p>
3 <b>Delegation of powers to subnational authorities and communities to ensure most effective fisheries management</b>	<ol style="list-style-type: none"> <li>1. Implement <b>Training Needs and Information Assessment (TNIA)</b> <a href="#">2.1.1</a> and initiate provincial element of legislation assessment <a href="#">2.2.1</a></li> <li>2. Consultative discussions with Provinces on Roadmap and proposed new strategies for joint planning and implementation</li> <li>3. Initiate provincial joint planning approach in each province to achieve individual <b>Workplans for the Strengthening of Provincial Fisheries (WSPF)</b> under the provincial <b>MoUs</b>, with reference to Provincial Development Plans and the objectives of this Roadmap</li> <li>4. Support implementation with mentoring and coordination of basic service delivery functions under the <b>WSPF</b>: <ol style="list-style-type: none"> <li>a. Fisheries management <a href="#">3.1.1</a></li> <li>b. Livelihood and income generating options <a href="#">3.2.1</a></li> </ol> </li> </ol>	<ul style="list-style-type: none"> <li>• Agreed legislative and institutional framework for coastal fisheries management and development, especially at community/ subnational level, being piloted and ready for legislating</li> <li>• New approach to building subnational capacity and institutions, community management and project support, Monitoring, Control and Surveillance (MCS) and enforcement, joint implementation of projects and M&amp;E being implemented</li> <li>• Coherence of NFA support, financing and provincial implementation with broader aims of sustainable development reflected in “whole of provincial government” fisheries planning and incremental funding based on improvements in capacity all</li> </ul>	<p>2018/1 <b>TNIA</b> complete. See <a href="#">2.2.1</a></p> <p>2017-19 Workplans for the Strengthening of Provincial Fisheries (<b>WSPF</b>) rolled out and implemented with each province</p> <p>2018-2020 Provincial sector policy and legislation as required</p> <p>2020 Reviewed provincial <b>MoUs</b></p>



service delivery	<p>c. Projects and infrastructure</p> <p>5. Support provincial sector policy development and drafting of template legislation as required</p> <p>6. Regular M&amp;E and review of MoUs and WSPF</p>	captured in reviewed MoUs and WSPF.	
<b>Outcome 1.2</b>	<i>Implement an adequate resource (human, financial, infrastructure) mobilization program to support the sustainable development and management of coastal fisheries and marine aquaculture<sup>i</sup>.</i>		
<b>Purpose</b>	Improved fisheries management outcomes which are operational, cost-effective and sustainable within foreseeable resourcing scenarios.		
<b>Actions</b>	<b>Key Activities</b>	<b>Outcomes</b>	<b>Outputs</b>
1 <b>Increase efficiency of fisheries management service</b>	<ol style="list-style-type: none"> <li>1. <b>Monitoring and Evaluation Facility (MEF)</b> lead business units to review and prioritise current service delivery activities at national and provincial levels to greatly increase area coverage of support for coastal fisheries management using the most cost-effective approaches</li> <li>2. Review and strategize affordable staff levels required at national and provincial/district/LLG levels (through restructure review <a href="#">1.1.1</a>) and <b>TNIA</b> <a href="#">1.1.3</a>) to perform coastal fisheries management and sustainable development functions at scale</li> <li>3. Strategically align roles of NFA staff to support provinces (<b>WSPF</b> <a href="#">1.1.3</a>)</li> <li>4. MEF review of most common or big ticket interventions used by provinces and NFA to improve selection criteria and guidance and ensure that interventions do not undermine resources. Regular review of RCFMA (2,5,8, 10 years)</li> </ol>	<ul style="list-style-type: none"> <li>Improved strategies for ensuring fisheries management and sustainable development outcomes reach more resource users and communities (guidance from MSG Fisheries Roadmap)</li> <li>Staffing structures at national and provincial level better reflect ways to achieve large scale geographic coverage and particularly adequate support for coastal fisheries management</li> <li>Interventions are assessed and selected to have optimum chances of success including strategies to ensure resource and project sustainability</li> </ul>	<p>2017-19 Staffing structure and functions for service delivery agreed and duties reflect priority coastal management activities at all levels</p> <p>2018-20 Reviews and guidance on common fisheries interventions</p> <p>2018,21,23,26 Roadmap reviews</p>
2 <b>Increase or ensure sustainable and adequate revenue to support fisheries management</b>	<ol style="list-style-type: none"> <li>1. Review NFA's financing arrangements for coastal fisheries development, management and monitoring activities (Provincial Fisheries Grants (PFGs), Project Development Fund (PDF) and other micro-financing support) to provide recommendations on how the monies can better achieve objectives <a href="#">1.1.1</a></li> <li>2. Explore sustainable financing of key functions such as licensing levies, compliance bonds, auctioning, penalties etc. to finance management costs at different levels (e.g. community to national)</li> <li>3. Provincial governments prioritize fisheries management and sustainable development functions in recurrent budgets <a href="#">1.1.3</a></li> <li>4. Ensure have communities transparent access to adaptation funds, facilities and/or culturally appropriate technologies for climate change adaptation</li> <li>5. Invite and encourage donors and NGOs to participate in Provincial Heads of Fisheries meetings and <b>Annual Coastal Fisheries Fora</b> to finance provincial programs</li> </ol>	<ul style="list-style-type: none"> <li>Coastal fisheries management is adequately prioritised and effectively funded, beneficiaries contribute to sustaining the health of resources and resource degradation is penalized</li> <li>Provinces and communities have improved access to funding to ensure restoration and management of resources and resilience to long term threats</li> </ul>	<p>2017/3 Financing mechanisms reviewed</p> <p>2018/3 Report on sustainable financing options</p> <p>2019 Mechanisms for accessing adaptation funds improved</p>
<b>Outcome 1.3</b>	<i>Establish appropriate mechanisms for effective collaboration with all relevant stakeholders<sup>ii</sup></i>		
<b>Purpose</b>	Coastal fisheries management and sustainable development strategies and activities are aligned and coordinated at national and provincial level (including NGOs) and shared at Melanesian level.		
<b>Actions</b>	<b>Key Activities</b>	<b>Outcomes</b>	<b>Outputs</b>
1 <b>Development of partnership</b>	<ol style="list-style-type: none"> <li>1. Build partnerships with national environment, climate change and other agency stakeholders (e.g. OCCD, CFDA, Oceans Policy unit) through regular meetings and <b>Annual Coastal Fisheries Forum (ACFF)</b>.</li> <li>2. Assess and include in Provincial networking and workplans (<b>WSPF</b>) relevant</li> </ol>	<ul style="list-style-type: none"> <li>National stakeholders networking, lesson sharing and aligning strategies to implementing the <b>NCFMDP</b> and its co-management arrangements</li> </ul>	<p>2017/2 Regular meetings with key partners (<b>ACFF</b>), report back to <b>CFMG</b></p>

strategies with key agencies	stakeholders in each Maritime Province (e.g. customs, forestry, police, PNGDF, justice, churches, private sector, industry and NGOs)	<ul style="list-style-type: none"> <li>Provincial fisheries resources stakeholders regularly meeting, sharing lessons and aligning or complementing strategies</li> <li>Subregional mechanism for sharing provincial level experience, expertise and management approaches and exploring subregional opportunities</li> </ul>	2018 Provincial networking is working practice
2 Improve coordination and lesson sharing between MSG members	<ol style="list-style-type: none"> <li>Pursue MSG level opportunities for appropriate subregional sharing and support including MSG Roadmap and MoU on Technical Cooperation In Coastal Fishery and Aquaculture Development.</li> <li>Initiate MSG and bilateral regional forums to share information and develop exchange programs on subregional approaches to improving coastal fisheries management and sustainable returns from bêche de mer (BdM)</li> </ol>		2018 Conduct one MSG workshop on progress in coastal fisheries management and BdM with emphasis on provincial staff

## Objective 2

### Conduct suitable capacity building, education, awareness raising and the generation and provision of information for management and sustainable development of coastal fisheries and marine aquaculture to all stakeholders.

**Outcome 2.1** Appropriate information is generated and provided to all coastal resource users, managers and policy makers to ensure the sustainable development of and management of coastal resources and marine aquaculture.

**Purpose** Stakeholders are well informed and are promoting sustainable and strategic approaches to management and development with increased compliance and improved governance.

Actions	Key Activities	Outcomes	Outputs
1 Increase awareness of vulnerability of, and opportunities for, managing coastal fisheries	<ol style="list-style-type: none"> <li>Undertake information needs assessment on inshore fisheries (information specific for target audience ) as part of Implement <b>Training and Information Needs Assessment (TNIA)</b></li> <li>Develop and implement <b>Coastal Resources Information and Education Strategy (CRIS)</b> targeting national, subnational and local levels: <ol style="list-style-type: none"> <li>Internal agency working group led by NFC (and key external agencies CEPA, CIFDA, OCCD, Ocean Policy Unit) to agree key messages, recommended materials and approaches that best serve government policy and have best chances of success (see [1.3.1] linkages)</li> <li>Inventory and assess information / awareness materials on coastal fisheries and their management including stock status at national level and in each Maritime Province to support <b>Provincial Fisheries Profiles(PFP)</b> [2.1.4]</li> <li>Assess experiences in information dissemination and provide recommendations on how information can be better disseminated to island and coastal communities, PFAs and other relevant stakeholders;</li> <li>Assess future pressures on coastal fisheries e.g. population growth, climate change and expected coastal resource needs for each Maritime Provinces incorporating gender and youth appropriately</li> <li>Produce or reprint, record or prepare appropriate materials<sup>iii</sup></li> <li>Commence implementation and piloting of key information and awareness activities in select provinces (e.g. bêche de mer [3.1.1])</li> </ol> </li> <li>Produce and commence delivery of <b>Coastal Resources Information and Education Strategy</b></li> </ol>	<ul style="list-style-type: none"> <li>All (target ultimately 100%) fishers, resource users and other stakeholders have knowledge and tools that facilitate detection of over-exploitation, implementation of sustainable resource management and compliance with rules and regulations</li> </ul>	<p>2017/3 Working group (including other agencies) formed</p> <p>2018/2 <b>CRIS</b> produced in coordination with <b>TNIA</b></p> <p>2018/4 <b>CRIS</b> being implemented in at least 2 provinces</p>



2	<b>Achieve long term attitudinal change through school curricula</b>	<ol style="list-style-type: none"> <li>1. Consult and engage Ministry of Education or Curriculum development authorities to determine how inputs on coastal resources and fisheries management may be incorporated and deployed in school materials and curricula</li> <li>2. Produce relevant school materials as part of <b>Coastal Resources Information and Education Strategy (CRIS 2.1.1)</b></li> <li>3. Support deployment and use of materials in school curricula</li> </ol>	<ul style="list-style-type: none"> <li>• Support for achieving generational change in attitude that allows more responsible and informed attitude to sustainable use and management of coastal resources</li> </ul>	<p>2019 Curricula and materials developed</p> <p>2021 Majority of coastal schools adopting curricula</p>
3	<b>Lifting political profile and increasing transparency of coastal fisheries</b>	<ol style="list-style-type: none"> <li>1. NFA and support agencies (FFA/SPC) provide balanced advice to provincial governments (e.g. through Provincial Maritime Governors Meeting) and encourage appropriate attention to coastal fisheries on the basis of food security, sustainable development etc.</li> <li>2. Prepare parliament briefs on the status of the inshore fisheries and the need for a shift towards a sustainable management paradigm ensuring that ministers and parliamentarians are specifically informed</li> <li>3. Regular updates through regional (e.g. MSG, PIF) forums, targeted at leaders/senior decision makers. Ensure coastal fisheries and in particular sustainable management have regular place on regional agendas</li> <li>4. Public dissemination of information on state of stocks, licencing and effectiveness of management</li> </ol>	<ul style="list-style-type: none"> <li>• Support and resources for the sustainable use and management of coastal resources are increased as reflected in budgets, policies and political priorities at provincial, national and regional levels</li> </ul>	<p>2017/4 Regular public media releases (priority bêche de mer)</p> <p>2018 Ongoing yearly parliament briefs and interventions at Provincial Maritime Governors Meetings</p> <p>2018 PNG provides updates and briefs at regional and international meetings<sup>iv</sup></p>
4	<b>Provision of adequate scientific information to inform fisheries management</b>	<ol style="list-style-type: none"> <li>1. NFA conduct information needs analysis (associated with <b>TNIA</b>) and develop/improve research strategy for key inshore fisheries to ensure decisions are based on cost-effective scientific information</li> <li>2. Work with each Maritime Provinces to compile <b>Provincial Fisheries Profiles</b> and provide recommendations on strengthening coastal fisheries data collection and analysis by the NFA, PFAs and coastal and island communities</li> <li>3. Identify information requirements and collect information for responsible small-scale fisheries and sustainable development including on illegal, unreported and unregulated (IUU) fishing and produce reports capturing trends over 3 year periods</li> <li>4. Support implementation of appropriate research and surveys including fisheries and BdM landings sampling and surveys <b>3.1.1</b></li> </ol>	<ul style="list-style-type: none"> <li>• Cost effective research and stock assessment on key species prioritised and conducted and linked to information strategy including dissemination of provincial and national status reports</li> </ul>	<p>2018 Research strategy produced</p> <p>2018 <b>PPFs</b> being produced in select provinces</p> <p>2019 First “<b>Status of coastal fisheries report</b>”</p>

## Outcome 2.2

Capacity is built to ensure the sustainable development and management of coastal resources and marine aquaculture

## Purpose

Stakeholders, particularly at subnational levels, have adequate capacity for effective, strategic and wide-scale management and sustainable development of coastal fisheries.

Actions	Key Activities	Outcomes	Outputs
1 <b>Development of capacity at subnational government level</b>	<ol style="list-style-type: none"> <li>1. NFA conducts specific provincial <b>Training and Information Needs Assessment (TNIA)</b> based on minimum expected functions for fisheries management and sustainable development identifying staffing gaps and detail areas needing immediate support, including: accountability and transparency, gender, youth and climate change <b>1.1.3</b></li> <li>2. Implement training, prioritizing service delivery skills for impact management and sustainable development services through joint implementation of <b>Workplans for the Strengthening of Provincial Fisheries (WSPF)</b> (i.e. training on the job, mentoring) , NFC core courses and use of Vocational Training Centres</li> </ol>	<ul style="list-style-type: none"> <li>• Provincial and other subnational officers and agencies have appropriate staff with skills to take responsibility for implementing and monitoring coastal fisheries management which is founded on community based approaches</li> </ul>	<p>2018/1 Training Needs and Information Assessment (<b>TNIA</b>) see <b>1.1.3</b></p> <p>2019-26 Courses at NFC and VTCs</p> <p>2018-26 Implement training through <b>WSPF</b> in each province</p>
2 <b>Build capacity of</b>	<ol style="list-style-type: none"> <li>1. Assist PFAs to conduct district/LLG/Community capacity needs assessment based on minimum expected functions for fisheries management and</li> </ol>	<ul style="list-style-type: none"> <li>• Communities with knowledge, skills and examples to manage coastal fisheries and ensure that</li> </ul>	<p>2018-21 Each <b>WSPF</b> set and implement</p>

<b>community leaders and authorized officers or equivalent</b>  <b>3 Improve service delivery by national fisheries administration to subnational government level.</b>	sustainable development 2. Produce strategic approach to building local level capacity based on awareness and strategic interventions (e.g. at LLGs or Districts) 3. Support PFAs as part of the Workplans for the Strengthening of Provincial Fisheries (WSPF) to facilitate, train and support small-scale fishing communities' management of resources on which they depend, for which they have tenure rights and that are traditionally used for their livelihoods	development interventions are sustainable	area/numbers based targets for communities/ LLGs / wards to achieve widespread coverage
	1. Develop and share a new regional training framework appropriate to the Melanesian context , based on exchange of information and staff, lessons learned, and national strategies relevant to delivering support to communities and traditional tenure holders through subnational and local fisheries agencies and structures <u>1.3.2</u>	<ul style="list-style-type: none"> <li>Improve service delivery by national fisheries administrations to provinces, local government and communities based on shared experiences and exchanges across MSG with particular emphasis on bêche de mer</li> </ul>	2018 Conduct one MSG workshop on progress in coastal fisheries management and BdM with emphasis on provincial staff

Objective 3			
Manage, maintain and restore coastal resources to secure long term social and economic benefits for coastal and island communities			
Outcome 3.1			
BdM stocks rebuilt, catches stabilised, and long-term economic value maximized and sustained. Other resources similarly benefit from improved management systems overall			
Purpose			
Implement effective mechanisms for the management, maintenance and restoration of coastal resources, especially sea cucumber stocks to maximise long-term economic value and ecological sustainability			
Actions	Key Activities	Outcomes	Outputs
<b>1 Develop improved management systems for coastal fisheries, especially, sea cucumber fisheries and the bêche-de-mer</b>	1. Coordinate the implementation of national level contributions to this Roadmap as detailed above and including: <ol style="list-style-type: none"> <li>Monitoring, evaluation, feasibility and economic and market studies of management interventions including of bêche de mer</li> <li>Continue to coordinate resource assessment to assess the recovery status of sea cucumber stocks and other commercially important coastal species;</li> <li>Continue to undertake multi-stakeholder consultations to improve the BDM management plan applying the principles of EAFM</li> <li>Undertake socio-economic surveys to determine the impact of the current management intervention and develop appropriate measures to optimise community benefits of the BdM fishery and proportion of rent that goes back to places of origin and management costs <u>1.2.2</u></li> <li>Strategize sampling activities at export level to ascertain the population</li> </ol>	<ul style="list-style-type: none"> <li>Effective mechanisms for the management, maintenance and restoration of coastal resources (especially sea cucumber stocks) to maximise long-term economic value and ecological sustainability are being implemented by national and subnational government and communities</li> </ul>	2018 BdM Fisheries management plan implemented and revised as necessary  2023 30% of coastal communities have been reached by awareness and information component of Roadmap  2026 75% of coastal communities have been reached by awareness and information

trade	<p>structure of the BdM resources exported;</p> <p>f. Develop minimum price watch programs to ensure coastal and communities are not disadvantaged by price transfers along the chain of custody</p> <p>2. Support implementation of coastal fisheries management at provincial level through Workplans for the Strengthening of Provincial Fisheries (WSPF) and including:</p> <p>a. Establishing working relationships with appropriate levels of governance e.g. LLGs, Wards, districts including functioning PMACS or LLGMACS and provisions for enforcement/MCS</p> <p>b. Awareness raising and socialization of fisheries information, management and bêche de mer roadmap to all stakeholders</p> <p>c. Establish and ensure functioning of monitoring, compliance, surveys and reporting</p>		component of Roadmap 2026 BDM and general coastal fisheries management is operational and stocks are stabilised
-------	--	--	--

## Outcome 3.2

### Reduction of pressure on inshore wild fisheries resources and increased sustainable revenue to resource dependent communities from the assessment and implementation of targeted Supplementary and Alternative Income Generation activities

#### Purpose

#### Supplementary and Alternative Income Generation activities investigated and implemented in suitable areas

Actions	Key Activities	Outcomes	Outputs
1 Development and roll-out of complementary sustainable livelihoods initiatives	<ol style="list-style-type: none"> <li>Monitoring and Evaluation Facility (MEF) lead evaluation of appropriate investments and alternative livelihood activities and ensure future investments and income generating options meet criteria of feasibility, sustainability, social impacts (e.g. gender and youth) and are monitored under appropriate evaluation framework [1.2.1]</li> <li>Ensure MEF evaluation and assessment findings are used as guidance in elaborating joint Workplans for the Strengthening of Provincial Fisheries (WSPF) to guide NFA/PFA work.</li> <li>Strategic implementation at provincial level of priority development strategies as assessed above and integrated with sustainability provisions – these might include inter alia: <ol style="list-style-type: none"> <li>Support development and capacity building of associations of fishers (e.g. cooperatives) and fish workers in all stages of the value chain;</li> <li>Small and Medium Enterprise support, mentoring and strategic planning;</li> <li>Value adding, processing, handling, increasing preservation or market diversification.</li> <li>Market needs assessments, targeting domestic markets, integration with project grants, SMEs and other interventions.</li> <li>Support appropriate deployment and roll out of IFAD program, sea weed farming, sandfish farming, aquarium species, trap nets, inland aquaculture and recreational fishing.</li> </ol> </li> <li>Regular M&amp;E and review of MoUs and WSPF as appropriate [1.1.3]</li> </ol>	<ul style="list-style-type: none"> <li>Investments that ensure sustainable outcomes in terms of social, economic and particularly resource base sustainability in appropriate infrastructures, organizational structures and capacity development to support the small-scale fisheries including post-harvest subsector in producing good quality and safe fish and fishery products, for both export and domestic markets, in a responsible and sustainable manner</li> </ul>	<p>2018-20 Reviews and guidance on common fisheries interventions</p> <p>2017-19 Workplans for the Strengthening of Provincial Fisheries (WSPF) rolled out and implemented with each province</p> <p>2026 30% of coastal communities have accessed alternative livelihood support</p>

## **Annex 2: Proposed responsibility for coastal fisheries management actions in Melanesia**

Discussion by MSG fisheries departments of the potential divisions of responsibility for management actions between national government, provincial (and local) government and communities for the implementation of Community Based Fisheries Management in Melanesia. Bold and asterisked activities are priorities (Govan 2013 and Inshore Fisheries Working Group comprising senior Fisheries Department officials from Solomon Islands, Fiji, Vanuatu, New Caledonia and PNG for the MSG Roadmap for Inshore Fisheries and Food Security – Port Vila, 2013)

<b>Activity</b>	<b>Government</b>	<b>Provincial / sub-national</b>	<b>Community / local</b>
<b>Information provision</b>	<ol style="list-style-type: none"> <li>1. <b>Ensure scientific/best practice information and advice is available to (provincial governments; intra-governmental information transfer) all fishing communities. This includes understanding of national/sub-national rules and their rationale*</b></li> <li>2. Develop and maintain systems to ensure information flow and feedback between provinces, communities and government agencies as well as within communities (this will likely involve use of decentralized subnational/provincial approaches and community agents)</li> <li>3. Maintain centralized and accessible records on licenses, exports, prices, markets, landings and other useful information for management decisions</li> <li>4. Specific surveys (PNG included provinces), stock assessments and support to community monitoring where these are vital to the success of community management or national policy priorities.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Ensure scientific/best practice information and advice is available to all fishing communities (Perhaps not provincial responsibility to do the science, rather disseminate it/extension role). This includes understanding of national/sub-national rules and their rationale*</b></li> <li>2. Develop and maintain systems to ensure information flow and feedback between communities and government agencies as well as within communities (this will likely involve use of decentralized subnational/provincial approaches and community agents)</li> <li>3. Record and prioritize feedback on emerging issues, community management activities and salient results or experiences</li> <li>4. Maintain centralized and accessible records on licenses, exports, prices, markets, landings and other useful information for management decisions</li> <li>5. Supporting, administrative and community engagement function, not involved in surveys.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Community maintains, uses and develops (where necessary) local and traditional knowledge, tenure systems and governance institutions*.</b></li> <li>2. <b>Community performs local observations and issue identification</b></li> <li>3. Community information collection and recording,(or more systematic monitoring in the rare cases where this is appropriate)</li> </ol>
<b>Management (Formulation, dissemination and implementation of management policy and rules)</b>	<ol style="list-style-type: none"> <li>1. <b>Secure and maintain political and public support for inshore fisheries management and the importance to this of traditional knowledge, tenure systems and governance institutions*</b></li> <li>2. <b>Provide / develop national and sub-national policy frameworks with clear objectives and in longer term, enabling legislation and institutions, based on experiences and feedback from community and other stakeholders*</b></li> <li>3. Promote, advise on or support community implementation of management measures (eg temporary closures, or fishing rules where</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Secure and maintain political and public support for inshore fisheries management and the importance to this of traditional knowledge, tenure systems and governance institutions*</b></li> <li>2. Provide/develop complementary sub-national policy frameworks and facilitate establishment of enabling institutions</li> <li>3. Promote, advise on or support community implementation of management measures (eg temporary closures, or fishing rules where communities have not set up their own) based on prioritized requests and community need and</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Discuss and gauge state of resources over time and highlight any emerging negative trends in the light of traditional knowledge and outside advice and experience*</b></li> <li>2. <b>Implement, track and modify simple community rules as and if appropriate to address priority identified problems and community objectives/purposes*</b></li> <li>3. Community collaboration, sharing knowledge, coordinating b/w communities. Representation of issues, objectives and progress to other communities, levels of government or stakeholders to promote improved practice between communities and inform</li> </ol>

Monitoring and enforcement	<p>communities have not set up their own) based on prioritized requests and community need and commitment</p> <ol style="list-style-type: none"> <li>Support decentralized positions including provincial/subnational staff and networks, community agents/ wardens/ authorized officers to fulfill key roles</li> <li>Coordination and liaison between local and other levels and across sectors to ensure ecosystem approach</li> <li>Development interventions: Address specific priority fisheries problems including potential access to higher cost Fisheries projects such as FADs or increased access to markets which depend on functioning community management</li> </ol>	<p>commitment</p> <ol style="list-style-type: none"> <li>Support decentralized positions including (in the case of PNG, LLG staff) and networks, community agents/ wardens/ authorized officers to fulfill key roles</li> <li>Coordination and liaison between local and other levels and across sectors to ensure ecosystem approach</li> <li>Development interventions: Address specific priority fisheries problems including potential access to higher cost Fisheries projects such as FADs or increased access to markets which depend on functioning community management</li> </ol>	<p>national and sub-national policy.</p>
	<ol style="list-style-type: none"> <li><b>Monitor and enforce at central locations including marketing of illegal fish, import and sale of illegal fishing gear, export quotas, activities and practices of middle-men, size restrictions and licence conditions*</b></li> <li><b>Training and support of local wardens or honorary officers as well as their nearest liaisons in Fisheries and Police departments*</b></li> <li>Liaise with police and courts to build well informed and proactive enforcement networks or partnership</li> <li>Enforcement or conflict management support where possible for issues that exceed community capacity such as poaching from foreign vessels or use of dynamite</li> </ol>	<ol style="list-style-type: none"> <li><b>Monitor and enforce at central locations including marketing of illegal fish, import and sale of illegal fishing gear, provincial export quotas, activities and practices of middle-men, size restrictions and licence conditions*</b></li> <li><b>Training and support of local wardens or honorary officers as well as their nearest liaisons in Fisheries and Police departments*</b></li> <li>Liaise with police and courts to build well informed and proactive enforcement networks or partnership</li> <li>Enforcement or conflict management support where possible for issues that exceed community capacity such as poaching from foreign vessels or use of dynamite</li> </ol>	<ol style="list-style-type: none"> <li><b>Monitor and enforce restrictions to access of community fishing areas* (communities are the first point of monitoring and enforcement; community by-laws must be harmonized with national/provincial)</b></li> <li><b>Enforce any local rules that may apply*</b></li> <li><b>Promote compliance with national/sub-national rules*</b></li> <li><b>Assess, record and communicate management outcomes and major enforcement issues with designated government or network liaison (may conflict with bottom-up approach)*</b></li> <li><b>Review fisheries community rules against objectives periodically*</b></li> <li>Review and revise or strengthen management institutions as appropriate to ensure traditional systems are adapted to modern context if need be.</li> </ol>

---

<sup>i</sup> MSG Roadmap Objective 1.3

<sup>ii</sup> MSG Roadmap Objective 1.4

<sup>iii</sup> Products/tools developed or reproduced may include media supplementary column on inshore fisheries situation and management approaches, radio programs, talkback back shows, radio plays, pamphlets, booklets (short story) and posters, short documentary movies on the status of inshore fisheries and the impact of inevitable natural causes, school materials.

<sup>iv</sup> Reports and briefings highlighting PNG's leadership in implementing sustainable coastal fisheries approaches in regional (MSG, Pacific Island Forum Leaders, Pacific Ocean Alliance/Commission, SPC Heads of Fisheries, Forum Fisheries, PIDF) and international meetings (UN-FAO, UN-CBD, etc.)