



PAPUA NEW GUINEA FISHERIES STRATEGIC PLAN 2021-2030





Harvesting of Trap Net Project in Alotau, Milne Bay Province

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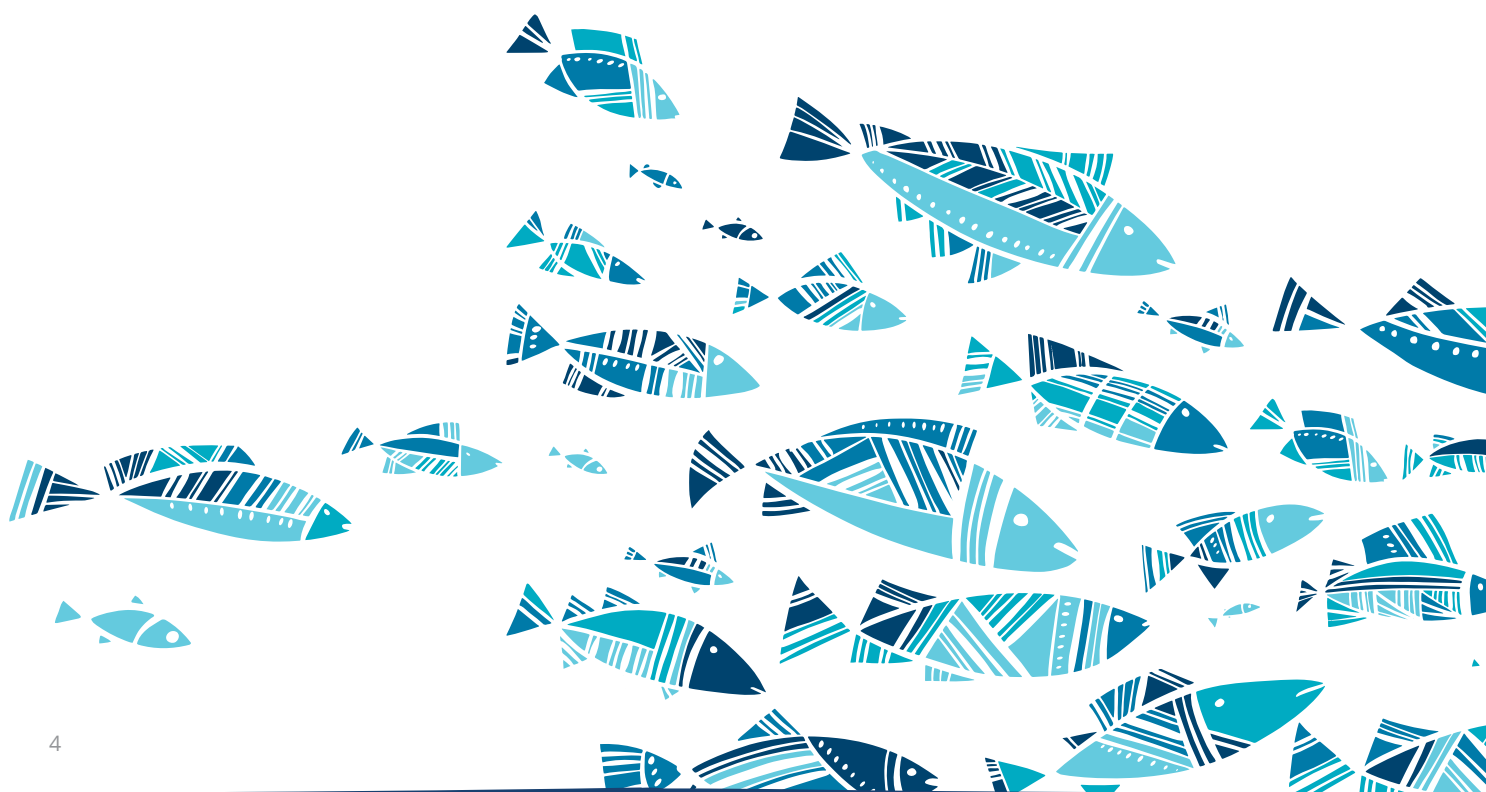
Acknowledgements

The Fisheries Strategic Plan 2021-2030 (FSP) is an initiative of the Government of Papua New Guinea and is a document that truly harnesses and embraces the collective spirit, potential, ambition and aspirations of the people of Papua New Guinea.

The strength of the FSP stems from the leadership, commitment, drive and technical expertise of the Ministry of Fisheries and Marine Resources, the National Fisheries Board, the Management and Staff of the National Fisheries Authority as well as the invaluable contribution of other national and provincial government agencies, development partners, the fishing industry of Papua New Guinea, research institutions, non-government, civil society organisations and local communities.

The FSP has been extensively canvassed, peer reviewed, discussed, deliberated on and crafted into what is an encompassing strategic vision and roadmap for the fisheries sector of Papua New Guinea to advance and grow over the next ten years.

The agenda for reform and transformation of the fisheries sector of Papua New Guinea is outlined in this FSP.



Acronyms and Abbreviations

3IA	PNA 3rd Implementing Arrangement
ADB	Asian Development Bank
AW	Archipelagic Waters
BDM	Beche-de-mer
CA	Competent Authority
CEPA	Conservation and Environment Protection Authority
CMMs	WCPCF Conservation Management Measures
CP	NFA Corporate Plan 2021-2025
CPUEs	Catch per unit efforts
DSP	PNG Development Strategic Plan
DWFN	Distant Water Fishing Nations
DWV	Distant Water Fishing Vessels
EBFMA	Ecosystem Based Fisheries Management Approach
EEZ	Exclusive Economic Zone
ENSO	El Nino Southern Oscillation
EPA	EU Economic Partnership Agreement
EU	European Union
FAD	Fish Aggregating Device
FAO	United Nations Food and Agriculture Organisation
FDI	Foreign Direct Investment
FFA	Pacific Islands Forum Fisheries Agency
FIMS	Fisheries Information Management System
FMA	Fisheries Management Act 1998 (amended)
FSMA	Federated States of Micronesia Arrangement
FSP	PNG Fisheries Strategic Plan 2021-2030
GDP	Gross Domestic Product
GOPPF	Gulf of Papua Prawn Fishery
GST	Goods and Services Tax
HCR	Harvest Control Rules
IAs	PNA Implementing Arrangement
IUU	Illegal, Unregulated, Unreported Fishing
KRAs	Key Result Areas
LOA	Length Overall
MCS	Monitoring, Control and Surveillance
MEY	Maximum Economic Yield
MPAs	Marine Protected Areas
MSC	Marine Stewardship Council
MSG	Micronesian Spearhead Group
MSME	Micro, Small and Medium Enterprises

MSY	Maximum Sustainable Yield
MTDP	Medium Term Development Plan
NAQIA	National Agriculture Quarantine and Inspection Authority
NEC	National Executive Council
NFA	National Fisheries Authority
NISIT	National Institute of Standards and Industrial Technology of PNG
NPOA	National Plan of Action
NPOA IUU	National Plan of Action on Illegal Unregulated and Unreported Fishing
PAE	Parties Allowable Effort
PIP	Public Investment Program
PMIZ	Pacific Marine Industrial Zone
PMMRA	Public Money Management Regularisation Act 2017
PNA	Parties to the Nauru Agreement
PNGDF	Papua New Guinea Defence Force
RBS	Rebate Scheme
RFMO	Regional Fisheries Management Organisation
RPNGC	Royal Papua New Guinea Constabulary
SDG	UN Sustainable Development Goals
SEZ	Special Economic Zones
SME	Small-Medium Enterprises
SOE	State-Owned Enterprises
SPC	Secretariat of the Pacific Community
SPS	Sanitary and Phytosanitary Measures
StaRS	National Strategy for Responsible Sustainable Development for PNG
TAC	Total Allowable Catch
TAE	Total Allowable Effort
TRL	Torres Straight Rock Lobster
TRLRAWG	Torres Straight Rock Lobster Resource Assessment Working Group
TSPZ	Torres Straight Protected Zone
UST	United States of America Multilateral Treaty with the Pacific Island Countries
VDS	Vessel Day Scheme
VMS	Vessel Monitoring System
WCPCF	Western and Central Pacific Fisheries Commission
WCPO	Western and Central Pacific Ocean

Foreword



**HON. DR LINO TOM,
MP, MBBS, MA-SURG**
Minister for Fisheries
and Marine Resources

I am honoured as Minister for Fisheries and Marine Resources, under the current Marape-Basil Government, to present to the government and the people of Papua New Guinea this important Fisheries Strategic Plan 2021-2030 (FSP), that sets the overarching road map for the transformation of the sector over the next 10 years. The plan deliberately sets an audacious goal that seeks to transform Papua New Guinea into a major commercial fisheries hub in the Asia-Pacific region. It recognises the sector as a strategic asset with immense value adding economic potential that is able to contribute to broad based inclusive and sustainable growth for the country going forward.

Papua New Guinea fisheries sector and its institutions evolved over the years on the back of reforms that saw the transition of the organisation NFA from a Department of Fisheries and Marine Resources status to what is now known as the National Fisheries Authority. A redefinition of the role of the organisation, necessitated a regulatory framework review leading to the authority taking on self-funding semi commercial statutory authority, that generates its own revenue to fund its mandated functions.

The recasting of the vision, mission and objectives of the organisation under the reform of the regulatory framework were articulated in the Fisheries Management Act 1998 (as amended). However, despite these regulatory reviews and reforms to the institutions and the sector as a whole, many challenges remain, in the translation of the reforms into tangible broad-based growth of the sector and its contribution to the national economy.

A critical disconnect in the reform has been the absence of a sector wide strategic plan that defines the development road map into the future. Whilst annual development programs driven principally by the parameters of annualised budget planning for the sector as an economic and renewable asset that functions as an important sector in the country's development planning.

The sector has over the last two decades undergone a massive transformation, and it is only fitting that the positive achievements are acknowledged. The fisheries sector's contribution to the national GDP grew on the back of the exponential growth of the domestic fishing industry, especially in the tuna fishery, where success stories include the increase in the foreign direct investment in tuna fishing, processing and export and direct revenue generation through access fees.

The successful policy and legislative reform implementation included the revamp of the revenue making mechanisms such as the optimization of the access fees rates, which were implemented from 2000 to 2009, and later succeeded by the Vessel Day Scheme (VDS) in 2010.

The sector's achievements were possible largely due to the Government's export-led model of development and the favourable treatment policies and access fee discounts in the fisheries sector, that prioritised fishing vessels linked to onshore plants. These vessels were granted premium access to the country's lucrative tuna resources within its archipelagic waters and EEZ. Subsequently, NFA's relative autonomy and flexibility granted by the government, allowed it to reinvest revenue generated from tuna resources back to the priorities of the sector.

One of these key priorities is building and maintaining the country's state-of-art fisheries monitoring, control and surveillance systems. Off the back of this system was the EU recognising our high standard of tracking and control of the sector and granting PNG's NFA as a competent authority for seafood export to EU and other global markets.



This allowed exponential growth in fish and fishery export volume and value surpassing the Medium Term Development Plan III (MTDP) target of K1 billion.

To deliver the FSP targets, effective and consistent resourcing of the FSP implementation will be imperative. This would mean that the government, through NFA would be required to continue to consistently reinvest the revenue generated from the fishery resources directly into capitalising the sector for broad-based growth. This will in-turn initiate a more broader revenue stream thereby creating broad business opportunities for new investments to enter into the sector.

The Fisheries Strategic Plan 2021-2030 is the government's policy response aimed at realising the fullest socio-economic potential of the sector. In keeping with the strategic intent of Government's call to "Take back Papua New Guinea and leave no child behind" the plan puts forward a development and growth strategy over the next decade. This strategy involves a bold investment and capitalisation program of the critical growth enablers within the sector to enable it to grow to full employment.

As Minister responsible for Fisheries and Marine Resources, I am grateful to be part of this Government, not only to witness this journey of "Taking Back PNG" but to also ensure that the fisheries sector embraces

this vision through the development of this plan under my stewardship, which signifies my serious commitment to the Government's vision.

I acknowledge the National Fisheries Board for its leadership and commitment to guide the development of this Fisheries Strategic Plan as the roadmap to provide the Government, the blueprint to strategically develop and sustainably maximise the benefits derived from the fisheries sector for our people and the country. I thank the Managing Director of the National Fisheries Authority, stakeholders and partners for a splendid effort and time dedicated to the development of this Strategic Plan, which now sets the vision to strategically align resources, plans and manpower to meaningfully implement this plan for the next 10 years.

It is of vital importance that all relevant stakeholders and bilateral partners use this strategic plan to channel technical assistance, development cooperation and donor programs to materialise the strategic objectives of this Fisheries Strategic Plan in order to exemplify the Government vision.

We have now asserted ourselves to "Take Back PNG" in the fisheries sector through the implementation of this Fisheries Strategic Plan 2021-2030.

God Bless.

Leaders at the 19th Western and Central Pacific Fisheries Commission meeting in Port Moresby, 2019



Introducing the Papua New Guinea Fisheries Strategic Plan 2021–2030



ANGO WANGATAU, OBE
Chairman, National Fisheries Board

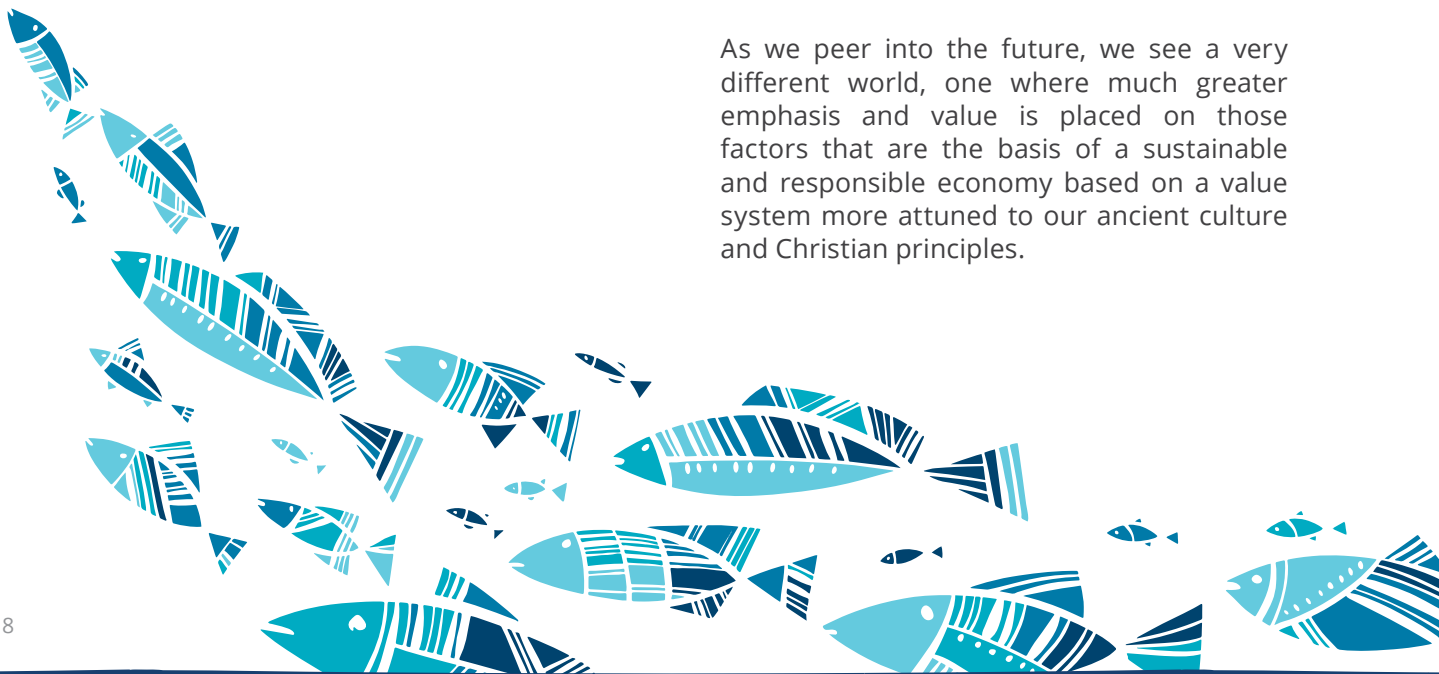
As Chairman of the National Fisheries Board, I am proud to introduce the Papua New Guinea Fisheries Strategic Plan 2021-2030 (FSP). The FSP sets out the sector's strategic direction and priorities. The Government recognises that our investment programs and services in the fisheries sector need to consider the changing development landscape at national, regional and global levels. As a renewable resource, fisheries and marine resources are our strategic assets and key contributor to the economy.

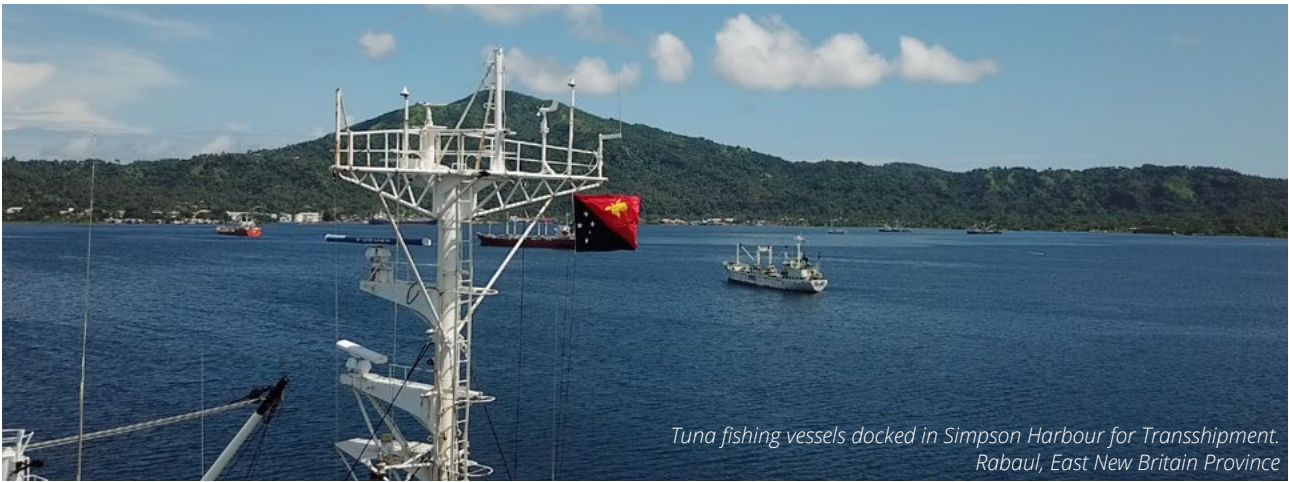
As PNG is an important party to the architecture of regional groups and institutions that manage our key tuna resource in the Pacific region, our programs must reflect the strategic direction set out in the regional priorities identified in the Pacific Fisheries Roadmap and the commitments in the Sustainable Development Goals. Over our history we have achieved significant and enduring impact in cooperating with our partners. We will continue to cooperate with our regional partners to ensure that the economic returns from our regions' fisheries resource is maximised for our people.

Measuring PNG's development performance against the aspirations of our founding fathers and the changing landscape before us, clearly show that timely reviews and realignment of existing policies and strategies are necessary to ensure PNG continues to trend forward on the development path that the guiding principles of our constitution is intended.

PNG has been pursuing a path of development that is gradually losing its competitive advantage. It needs to be strategic in her approach to development and clearly position herself to offer its unique blend of approaches that is of strategic value to the world. The country has strategic value and strength in its natural endowments but their mode of development has been largely extractive - harvesting and exporting of raw materials with little value adding. Even the citizenry, the resource owners, have largely been rent seekers and employees of the projects. How then do we learn from the mistakes of the past, make assessment of our competitive strengths and take the steps to position ourselves to have comparative advantage based on the uniqueness of our natural endowments?

As we peer into the future, we see a very different world, one where much greater emphasis and value is placed on those factors that are the basis of a sustainable and responsible economy based on a value system more attuned to our ancient culture and Christian principles.





*Tuna fishing vessels docked in Simpson Harbour for Transshipment.
Rabaul, East New Britain Province*

The environment capital such as the natural resources in our oceans, waters and marine environment are emerging as strategic assets whose value will increase into the future. Recognising their unique value and putting in place enabling policies and plans to shift investment and develop them as pillars for economic growth is critical for PNG's prospects going forward.

The FSP builds on this paradigm and offers a sustainable road map for the development of the fisheries sector. It recognises the growing values of the resources in our oceans and seas, river systems and lakes and advocates a shift in investment to develop them as growth pillars for the economy going forward. It adopts the development philosophy of the National Goals and Directive Principles of the Constitution and the 21 sustainable principles of StaRS and aligns development strategy with them - one that is based on the principles of greater responsibility and prudent stewardship of our naturally endowed wealth is human development centred and inclusive, and deliberately awakens the latent potential of the citizenry to be more involved in the development prospects of the country.

The ten-year development roadmap spelt out by the FSP involves a variety of renewable marine species like tuna with its migratory behaviour across international ocean boundaries. Others are unique and exotic in value like reef fishes, sharks, barramundi, prawns and beche-de-mer.

All these stocks are in danger of over exploitation through commercial fishing and their aquatic habitats vulnerable to dangers from the environmental impact of industrial growth and will require continued development of robust management regimes that underpins sustainable management and conservation principles.

The sector's approach to realising this plan as such, from an economic, social and sustainable viewpoint will require the concerted effort and contribution of all stakeholders and partners. This being so, the Government's vision through this plan and other regulatory frameworks will ultimately work to ensure that community aspirations and means of livelihoods are promoted and protected, now and into the future, for the benefit of all.



Implementing Arrangement



JOHN E. KASU

Managing Director, National Fisheries Authority

The Papua New Guinea Fisheries Strategic Plan 2021-2030 (FSP) provides the overarching framework for the alignment of strategic purpose, priorities, actions and outcomes for the fisheries sector of Papua New Guinea. As the industry regulator and competent authority, the National Fisheries Authority (NFA) has the lead role in implementing the FSP in conjunction with the Ministry of Fisheries and Marine Resources, the National Fisheries Board, the fishing industry of Papua New Guinea, national and provincial government agencies and many other stakeholders.

The success of the FSP will be realised in part through the NFA Corporate Plan 2021-2025 and correlating NFA Business Unit Implementation Plans. It is also envisaged that relevant national and provincial government agencies and industry partners will also incorporate the intent of the FSP into their own planning and operational architecture. By working collectively to align planning priorities and key outcomes, the intent of the FSP can be realised. This effectively includes collective approaches to managing and mitigating risks, securing and aligning funding, and ensuring that we are all effectively positioned in exercising our respective capacities and capabilities.

While there are certainly opportunities for the fisheries sector of Papua New Guinea to grow further, there will of course no doubt be challenges that the sector will have to address or work to mitigate collectively.

In particular, the projected impacts of climate change pose significant concerns in terms of the long-term viability of Papua New Guinea's fisheries resources. Of particular note will be the future availability of tuna stocks. Subsequently, there is a need for broader diversification in the fisheries sector of Papua New Guinea. The effects of the COVID-19 pandemic has also shown the need for the fisheries sector of Papua New Guinea to remain agile and responsive to such external and economic shocks that affect our economy and potential foreign and domestic investments that impact Papua New Guinea earning much needed foreign exchange.

From an NFA viewpoint, it is critical that key challenges and emerging threats are mapped out and carefully managed through the implementation of this FSP. A matter of critical importance is NFA's ability to maintain its status as a regulatory and competent authority and losing such a status can be detrimental to international market access.

Maintaining the EU-recognized competency status of the organization is vital for the fisheries sector so that our fish and fishery products continue to enter the global market and are competitive, in particular, the EU market where 98% of our total PNG fish and fishery products export are currently destined.



The dynamism and ever-changing market conditions requires NFA as the Competent Authority (CA) to be adaptive to comply to the new market requirements by ensuring continuous renewal and strengthening of its standard operating procedures (SOPs) to maintain its CA role. This process comes with it the need to upgrade NFA's institutional knowledge, skills and technology. To this end, the Government will need to continue to re-invest in this area to continue to expand the markets beyond our traditional partners.

Protection of the PNG's fisheries and marine resources remains a priority for NFA. However, effective surveillance of PNG's vast EEZ also remains a challenge due to lack of resources. As the forces behind illegal unregulated and unreported (IUU) fishing gets smarter, NFA and the Government too must continue to reinvest in building and strengthening its Monitoring, Control and Surveillance (MCS) tools and systems, not only combat the IUU fishing activities, but also to create a deterrent effect to send a strong signal out that the Government will not be lenient on the perpetrators of IUU fishing.

Policy and regulatory impediments to business also remain one of the key challenges for industry development. Effective central government oversight to mitigate the issue of conflicting government policies and mandates should be prioritized to create the required vibrancy and synergy in partnerships for government instruments in particular, to deliver the key government aspirations such as those put forward in the FSP.

The above challenges can be mitigated with having in place clearly defined and bold plans for NFA institutional reforms aimed at ensuring that the NFA, as the lead agency in harnessing vibrant partnerships to delivering the FSP, has strong governance and remains robust and resilient to external changes. This essentially requires significant funding, to be complemented by good leadership at the operational level.

The FSP's Vision, Mission, Values and Principles, will be critical in ensuring that we all remain purposeful, to the intent of the FSP. The Key Result Areas (KRAs) detailed in the FSP provide the starting points and linkage to operationalisation and initiate the transformation process for the NFA beginning with where the fisheries sector of Papua New Guinea is at present to where it could be in terms of the greater citizenry participation, sustainable management and growth of the sector into the future.

At the end of the 10-year period, it is envisaged that in terms of growth, the fisheries sector's contribution to Papua New Guinea's Gross Domestic Product will increase and the engagement of Papua New Guineans at all levels of the fisheries sector will increase substantially. This would include an associated increase in overall revenue for the National Government through taxes and customs duties, as well as strengthening our foreign exchange rates or balance of payments. As we move forward, this impetus and value remains, and it is only fitting that 'our fish' will remain a big part of 'our future'.

Local fishermen in Simpson Harbour, Rabaul, East New Britain Province



Executive Summary

Introduction

Papua New Guinea forms half of the second largest island in the world and has a diverse geography with abundance of natural resources. The abundance and diversity of Papua New Guinea's fisheries resources reflects this complex geography including an extensive Exclusive Economic Zone (EEZ) covering an area of 2.7 million square km that borders Indonesia, Australia, Solomon Islands and the Federated States of Micronesia. Papua New Guinea's total land area is an estimated 462,000 km² comprising of four large islands and more than 600 smaller ones. With a coastline of some 17,500 kilometres in length with deltaic floodplains and inshore lagoons accounting for around 4,250km of this coastline and coral reefs accounting for another 13,840 km², Papua New Guinea truly does have a wealth of fisheries resources.

Papua New Guinea's EEZ is one of the most dynamic and productive tuna fishing waters in the world. Distant water fishing nations licensed to fish in Papua New Guinea's EEZ under bilateral access agreements and the domestic fishing vessels based in Papua New Guinea catch around 500,000 metric tonnes of tuna annually. This tuna is mostly caught by purse seine fishing vessels and the export of tuna has become the leading export earner for the fisheries sector of Papua New Guinea. Today, Papua New Guinea is ranked among the top tuna exporting countries in the world.

Papua New Guinea's population is currently estimated to be around 9.1 million people growing between 2-3 % annually. Up to 87 % of all people in Papua New Guinea live in rural areas. Subsequently there are limited formal job opportunities. Many areas of service delivery – such as health, education, transport, energy, and water – remain weak in these rural areas.

The Nexus for Strategic Repositioning

In spite of the positive gains and growth in the fisheries sector of Papua New Guinea over the last thirty years, outside of the tuna fishery, other potential fisheries and aquaculture remains largely underdeveloped. Subsequently, there is still significant potential growth of the fisheries sector in Papua New Guinea. Currently, there are shortcomings in incentives for resource owners and local entrepreneurs to participate effectively and equitably in the fisheries sector of Papua New Guinea. There is also a general lack of infrastructure and basic services and low access to suitable financing. Even for the well developed tuna catching and processing industry, high production and operating costs, also limits the ability of greater participation of Papua New Guineans in these industries. In comparison to other countries in the Asia Pacific Region, Papua New Guinea does not have a comparative advantage due to high operating costs and whilst the waters of Papua New Guinea yield significant catches, it is still largely a supplier of raw fisheries resources to other mostly Asian markets.

The FSP recognises that the state of play in the fisheries sector in Papua New Guinea needs to change and that it needs to diversify at many levels including greater value-adding. Guided by Papua New Guinea's various Development Principals and Goals, a central focus of the FSP is to PNG into a major commercial fisheries hub in the Asia-Pacific region. Overall, the intent of the FSP is to ensure Papua New Guinea's fisheries sector is commercially robust, socially inclusive, responsible and vibrant.



FSP Vision and Mission

The FSP's Vision strives to achieve:

'An internationally competitive and sustainable sector and fishing industry characterised by a resilient and commercially inclusive socioeconomic growth providing food security.'

Its Mission is to ensure that:

'Papua New Guinea's fisheries sector is developed into a strong, broad-based, diversified and value-adding industry that is globally competitive; domestically inclusive and functioning as a robust and sustainable source of government revenue, food and livelihood for the people.'

Key Result Areas (KRAs)

In terms of the fundamental mechanics and operation of the FSP, the National Fisheries Authority (NFA) as the lead agency will focus on the implementation of eleven Key Result Areas (KRAs) that are detailed in this FSP. These KRAs in essence, frame and articulate the sector's priorities for the next ten years.

These KRAs are as follows:

1. Development of Enabling Infrastructure and Improvement of Industry Operating Environment

Strategic actions and priorities focus on the on the development and operationalisation of dedicated infrastructure including wharves, jetties and landing sites and processing hubs to increase domestic value adding and increase participation by all Papua New Guineans in spin-off businesses and income generating activities.

2. Optimisation of Government Revenue

Strategic actions and priorities focus on the optimisation of revenue from the Vessel Day Scheme and the maximisation of other revenue streams including those obtained from relevant taxes and duties.

3. Increases in Downstream Processing, Value Adding, Employment and Export Earnings

Strategic actions and priorities focus on increasing the volume of downstream processing for all fish and fisheries products to increase export earnings, increase employment opportunities, ensure price competitiveness of fisheries products and to maximise the production capacity of all processing plants.

4. Expanding and Enhancing of International Trade and Market Access for Fisheries Products

Strategic actions and priorities focus on the maintenance of access to existing markets, the establishment of new international market access and the scaling up of strategic trade promotion and facilitation.

5. Supporting, Maintaining and Encouraging of Genuine Foreign Direct Investment Inflows

Strategic actions and priorities focus on efforts to increase foreign direct investment in the fisheries sector of Papua New Guinea and the development of attractive investment incentive packages.

6. Optimisation of Papua New Guinean Participation and Local Content in the Fisheries Sector

Strategic actions and priorities focus on efforts in increasing National Government interests through the establishment of a commercial fishing entity and to increase the number of active locally-owned micro, small and medium enterprises, fishing cooperatives and associations. In addition, the enforcement of minimum standards for the export of fish and fishery products, the development and implementation of by-catch utilisation plan and providing greater opportunities for Papua New Guineans to work on-board fishing vessels operating in the waters of Papua New Guinea will be pursued.



7. Improvement in Food Security and Livelihood Opportunities

Strategic actions and priorities focus on increasing food security and livelihood programmes in rural communities with an increase in subsistence fisheries and aquaculture production as well as the development of tourism based around fishing and fish farming activities. Finally, there will be targeted efforts to increase the value at the fishers' level through improved processing.

8. Strengthening of Research, Development, Extension Support Services, Training and Capacity Building

Strategic actions and priorities focus on increased and effective applied research of current and emerging fisheries as well as the domestication of indigenous species with commercial potential for aquaculture, disease prevention, and better seafood quality.

9. Maintain and Strengthen Sustainable Fisheries Management and Healthy Ecosystems

Strategic actions and priorities focus on annual fishery status and situational reports for all fisheries managed under management plans and any other research projects and initiatives including stock assessments, habitat mapping, assessments of commercial potential; reviews of management plans and the development of new emerging fisheries. There will also be a focus on emerging international and national requirements for fisheries compliance, increase in capacity and capability for monitoring, control and surveillance.

10. Build, Strengthen International Fisheries Cooperation and Engagements

Strategic actions and priorities focus on elevating Papua New Guinea's interests at sub-regional, regional and international fisheries fora through effective representation and building strategic partnerships to promote sustainable, responsible management and optimum utilisation of fisheries resources in all areas of common interests; and leveraging regional support and technical assistance to enhance responsiveness to emerging global issues and trends.

11. Encourage evidence-based policy and planning approach:

Strategic actions and priorities focus on undertaking an assessment of the institutional arrangements of the fisheries sector in Papua New Guinea to ensure improved sector policies, administration, coordination and implementation is strengthened and there is transparency through timely annual reporting and fiscal management.

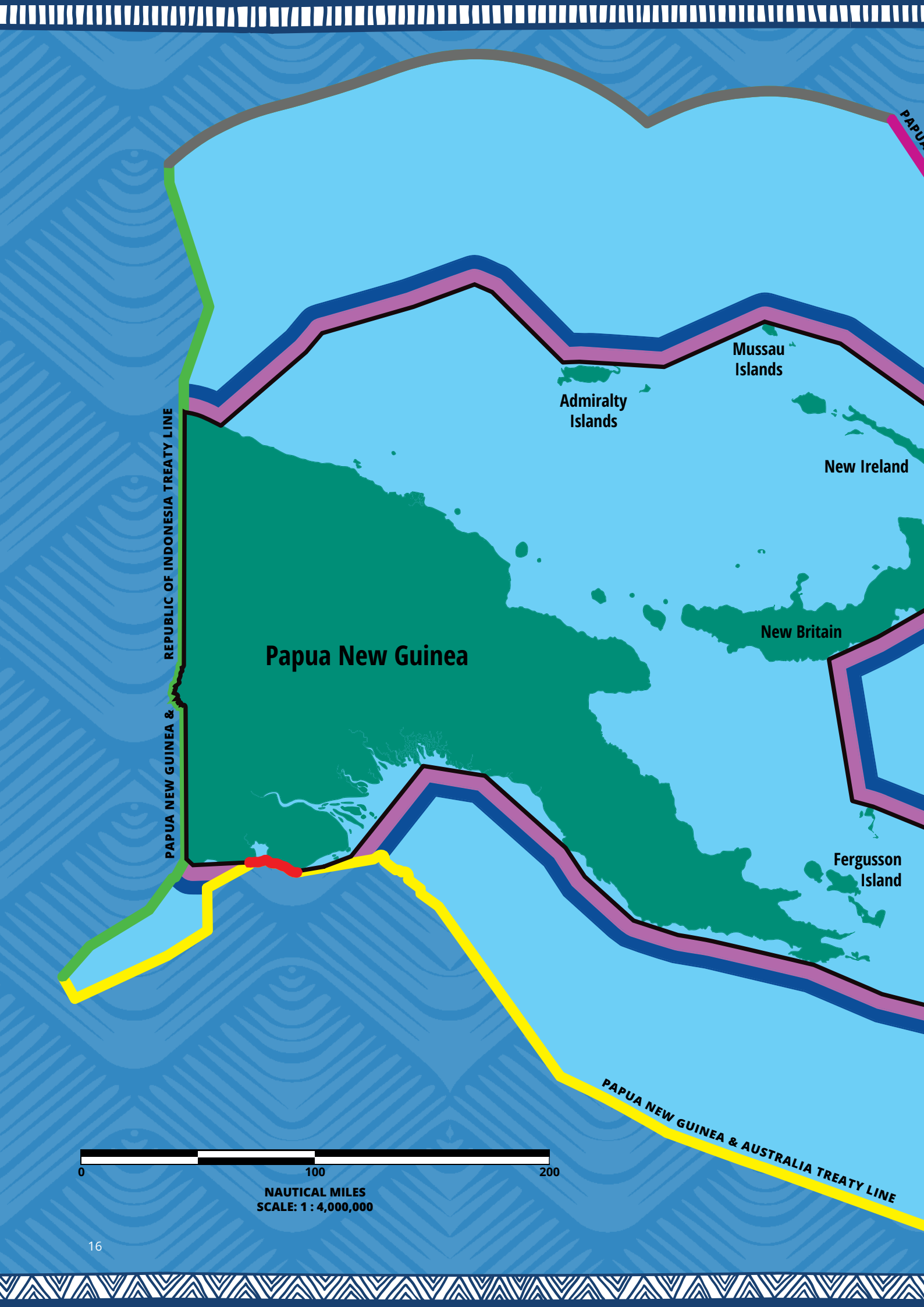
Financing and Implementation of the Key Result Areas

The FSP requires the materialisation of resource mobilisation and implementation plans from all stakeholders and partners across the sector to translate the FSP priorities into specific actions and deliverables in contributing to the realisation of the KRAs as outlined. As the lead agency, the NFA Corporate Plan 2021 – 2025 will support the implementation of the FSP and respective KRAs, through the articulation of purpose and appropriation of annual budgetary allocations, to align and reflect these endeavours. Sector partners and stakeholders will also be encouraged to fully leverage respective KRAs and develop like plans and priorities to further exploit and support the implementation of this plan and its underlying intention to promote overall sector growth.

Overall the implementing budget to realise the full intent and extent of the FSP over the next ten years will require serious commitment from the National Government. This is particularly so, as the FSP is a truly ambitious document and its realisation will require cooperation on many fronts and at many levels from a whole of government and fisheries sector approach. Overall, there will need to be significant capital investment, capacity development, technical inputs and technological advancements to truly harness and realise the envisaged opportunities and benefits of this plan.



*Local Fisherman showcases Sea Cucumber,
Carteret Island, Autonomous Region of Bougainville*



REPUBLIC OF INDONESIA TREATY LINE
PAPUA NEW GUINEA &

Papua New Guinea

Admiralty Islands

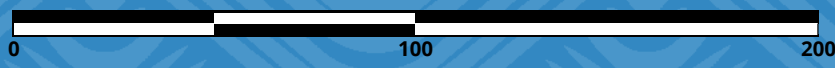
Mussau Islands

New Ireland

New Britain

Fergusson Island

PAPUA NEW GUINEA & AUSTRALIA TREATY LINE



NAUTICAL MILES
SCALE: 1 : 4,000,000

Maritime Limits Of Independent State of Papua New Guinea

Chart showing Limits of Territorial Sea (12M), Contiguous Zone (24M), Exclusive Economic Zone (200M) and Treaty Lines with Neighbouring States of Papua New Guinea



LEGEND

- Archipelagic Straight Baseline & Normal Baseline
- Territorial Seas (12M) Limit Line
- Contiguous Zone (24M) Limit Line
- Exclusive Economic Zone (200M) Limit Line
- Papua New Guinea & Federated States of Micronesia Treaty Line
- Papua New Guinea & Solomon Islands Treaty Line
- Papua New Guinea & Australia Treaty Line
- Papua New Guinea & Republic of Indonesia Treaty Line

Macroeconomic Setting

Papua New Guinea has a diverse geography with abundance of natural resources. The country occupies the eastern half of the West Pacific island of New Guinea, together with the islands of New Britain, New Ireland, and the Autonomous Region of Bougainville and another 600 smaller islands and atolls. Papua New Guinea's 9 million (2019 estimates) population is young and growing at about 2–3% annually.

The country's economy remains dominated by two broad sectors; the agricultural, forestry, and fishing sectors that engage most of PNG's labour force (the majority informally); and the minerals and energy extraction sector that accounts for the majority of export earnings. Much of the production activity is dominated by labour-intensive agriculture, and capital-intensive extraction of oil and gas, gold, copper, and other minerals. Mining and petroleum now account for over 25% of PNG's gross domestic product and over 80% of its exports.

Over the medium-term (2020–2024) real growth is expected to track at 2% in 2020 before increasing to 3.3% by 2024.

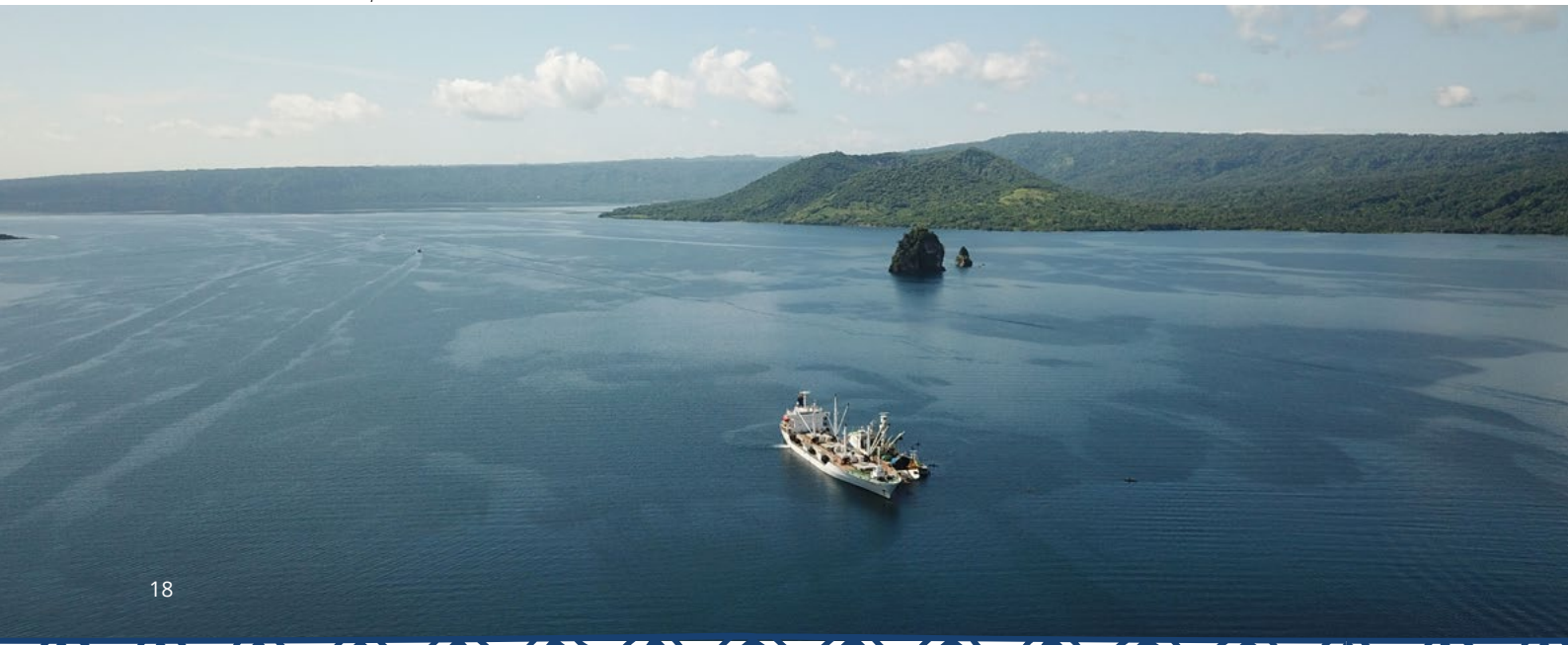
Real non-mining growth was projected at 3.3%. This is below the government's objective of a 5% growth level, and reflects the persistent constraints in business conditions in the non-resource sectors due to legacy issues of foreign exchange shortages.

The gradual growth profile beyond 2020 is underpinned by expected improvement in sectors other than mining and petroleum driven by expansionary fiscal policy or increased capital expenditures in the early years and major reforms targeted to improving State-Owned Enterprise (SOE) efficiency and bringing balance to the foreign exchange market. Growth in the non-resource sector, agriculture, forestry and fishing is expected to be 3.4%.

However, all these growth projections have now been impacted by the impact of the COVID-19 pandemic. In early 2020, prior to the COVID-19 global pandemics impact – the World Bank forecasted that real GDP growth was projected to hover around 3% on average in 2020–2022. Due to the impact of COVID-19 and other downside risks – including unexpected external shocks or potential domestic political and economic turbulences this growth is now expected to be less.

Papua New Guinea's development challenges are not only economic but are culturally complex and deeply rooted in tribal and ethnic identity, traditional social institutions, and relationship to the land. These contribute to both the country's unique challenges in terms of moving national consciousness toward a cash economy lifestyle as against subsistence living as well as financial and business literacy and acumen.

Tuna boat docked in Simpson Harbour, Rabaul, East New Britain Province





Bubuleta Tilapia Hatchery Facility, Alotau, Milne Bay Province

There are limited formal job opportunities for the growing employment age population and other risks include environmental management, population growth, political fragmentation, inequalities in PNG's resource dominated economy, and social exclusion of some groups.

The country's revenues continue to face challenges arising from lower global commodity prices. Sound macroeconomic management and more efficient service delivery is critical to ensure development benefits reach a greater number of Papua New Guineans, particularly given 87% of Papua New Guineans live in rural areas. With such a highly dispersed and remote population of the country, the consequence of a COVID-19 outbreak in PNG has the potential to be devastating. The future resilience and economic growth of the country will depend on how its health system responds to the ongoing complications resulting from the COVID-19 pandemic.

Against these socio-cultural factors, the country faces significant challenges ahead in making economic growth more inclusive and sustainable.

Many areas of service delivery – such as health, education, transport, energy, and water – remain weak, particularly in rural areas. The abundant resource potential of the country provides a strong platform for greater economic engagement with Asia and further abroad.

Going forward the country, expects to diversify its asset base and increase employment. Strategic investment is needed to strengthen capacity in institutions, human capital, and physical infrastructure. Electricity, telecommunications, road and other transport infrastructure remain critical to supporting private sector-led growth.

The FSP is designed against this development landscape. The government expects the fisheries sector to be part of the diversification strategy, provide employment and food security for the country and revenue for the government going forward. This strategic plan defines the sectors growth path over the next decade in response to the government's expectation.



The Fisheries Strategic Plan

Scope

This Fisheries Strategic Plan 2021 – 2030 (FSP) provides a road map that brings clarity and action to high-level strategic decisions for Papua New Guinea’s fisheries sector. It operationalises these strategic decisions in terms of where Papua New Guinea’s fisheries sector should be in ten years time and what actions are required to take the sector forward into the next decade. The development path to be pursued will be crystallised with clearly defined and measurable goals to guide the Government efforts and interventions in a more strategic manner.

The FSP is to be implemented in conjunction with other fisheries specific policy documents and other government policies. These include the following:

- Fisheries Management Act and Regulations
- Fishery Management Plans
- Trial Fishing Policy
- Fish Aggregating Device (FAD) Policy
- National Plan of Action on IUU (NPOA IUU)
- PNG Standard for Fish and Fishery Product 2019
- PNG Coastal Fisheries and Marine Aquaculture Roadmap 2017–2026
- Fisheries Infrastructure Development Plan 2021–2025
- NFA Corporate Plan 2021–2025
- National Food Security Policy
- PNG Trade Policy
- Aquaculture and Inland Fisheries Development Policy
- National Oceans Policy
- National Nutritional Strategy
- Medium-Term Development Plan (MTDP) III 2018–2022

Consistent with these strategic policies and other guiding development principles, greater value and prominence to the country’s abundant natural resources, environmental capital, cultural resources and their potential to grow in value over time, is given due recognition.

Strategic Plan Development Process

The development of the FSP is a result of a number of stakeholder consultations, internal NFA management workshops, guided by a structural context gained from the literature reviews of Government policy documents and developments, technical reports and existing fisheries management plans.

Stakeholder consultations began in December 2019 up to March 2020 and validation consultations throughout 2020. Two national level consultation workshops were conducted for both national government agencies and provincial government representatives and development partners. The process of consultations included senior government officials, provincial government officers, development partners, the PNG Fishing Industry Association, representatives from the Civil Society and relevant international development partners. These major consultative forums and workshops were followed by a series of planning and technical validation workshops, concluded by the Board of Directors and National Fisheries Authority senior management strategic plan finalisation workshop held at the end of October 2020.



Vision and Mission Statements

Vision Statement

An internationally competitive and sustainable sector and fishing industry characterised by a resilient and commercially inclusive socioeconomic growth providing food security.

Papua New Guinea fisheries sector is developed into a strong, broad-based, diversified and value-adding industry that is globally competitive; domestically inclusive and functioning as a robust and sustainable source of government revenue, food and livelihood for the people.

Long Term Development Goals and Mission

Core Values and Guiding Principles

Core Values

Inclusive and Sustainable	Our fisheries resources are managed in a manner consistent with the principles of inclusivity and ecological sustainability.
Local Resource Use Rights	Local resource rights to our shared marine resources are respected and observed.
Customary Heritage Values	Due recognition is given to the customary and heritage values of our people in the management of the sector.
Gender Balance and Equal Opportunities	Equal opportunity is given to all to earn a living from the utilisation of our fisheries resources.
Stamping out Illegal, Unreported and Unregulated Fishing	Continue to fight and prosecute illegal, unregulated and unreported fishing and implement international agreements.
Maximising Utilisation and Production	Fisheries and aquaculture are developed to maximise the net economic return to our economy whilst ensuring food security and livelihood opportunities for all.
Transparency in Decision Making	Decisions are made in consultation with all relevant stakeholders.
Regulatory Effectiveness and Cost Recovery	Ensuring regulatory and cost recovery requirements are fit for purpose.
Meeting our International Obligations	The fisheries sector is managed in a manner that is consistent with relevant international obligations.
Precautionary Approach	The absence of adequate scientific information will not be used as a reason for postponing or failing to take conservation and management measures.
Global, Regional, Domestic Co-Dependency and Responsibility	Recognise our shared responsibility of managing our fisheries to achieve harmonious ownership and usage.

Guiding Principles

The guiding principles of the Strategic Plan:

Guiding Principle 01	Guiding Principle 02	Guiding Principle 03	Guiding Principle 04	Guiding Principle 05
The engine room for economic growth is the private sector and as such commercial development of fisheries and aquaculture encourages and welcomes both domestic and foreign direct investment.	Environmental considerations and sustainability principles are fundamental to commercial development aspirations since long term profitability of the sector is contingent on a sustainably managed fisheries resources and habitats.	Sustainable principles to be applied in all exploitation, commercialisation, downstream processing, value adding activities and trade in compliance with national and international food standards.	Ensure optimum balance between commercialisation and environmental protection through determining threshold limits to disturbance to marine and aquatic ecosystems.	Resource protection through stock assessment, MCS programs, promotion of Marine Protected Areas (MPAs) or marine conservation initiatives.



Strategic Plan Purpose

The fundamental purpose of the FSP is to bring clarity and action to the high-level strategic decisions and set the roadmap with clearly defined targets as the preferred future for PNG fisheries sector. The Strategic Plan operationalises these strategic decisions and choices in terms of where PNG fisheries sector and industry should be and what actions are required to be undertaken for the next decade from 2021 to 2030 to achieve the set targets.

The FSP provides development direction for the sector defined goals that are also achievable and measurable. The FSP will be a tool that is useful for guiding day-to-day decisions and also for evaluating progress and changing approaches when moving forward as it will prioritise and synchronise interventions in a more strategic way given the scarce resources at NFA's disposal.



Strategic Plan Objectives

The underlying objectives of the FSP 2021-2030 include:



Objective 01

To reliably inform the government planning process to support strategic investment programs, infrastructure and services to empower growth of the sector, against a fast-changing competitive landscape of this robust sector.



Objective 02

To promote the fisheries sector as a strategic asset in recognition of its renewable nature hence sustainable contribution to the national economy.



Objective 03

To give due recognition to the growing importance of coastal, aquaculture and inland fisheries in global seafood production and food security.



Objective 04

To give due recognition to growing values of the resources in the oceans and seas, river systems and lakes, and advocate a shift in investment to develop them as growth pillars for the economy going forward.



Objective 05

To align the fisheries sector to the development philosophy of the National Goals and Directive Principles of the Constitution and the 21 Sustainable Goals of the StaRS.



Objective 06

To elevate fisheries sector to a higher level of strategic consideration under the National Planning Framework.

Alignment With Overarching Development Principles

Five National Goals and Directive Principles

The preamble of the National Constitution continues to be the foundational philosophy for the development direction for Papua New Guinea. These goals and directive principles are:

- **Integral Human Development**

Integral human development - providing citizens the opportunity to achieve their potential is the desired outcome of all development effort. The primary objective of the FSP is that economic growth in the fisheries sector must be translated into improved livelihoods of people.

- **Equality and Participation**

All citizens should have equal opportunity to participate in and benefit from the nation's development. The FSP provides these opportunities for both the citizenry and foreign investors to participate in complementary ways.





Local Fish Sellers at Wewak Market, East Sepik Province

- **National Sovereignty and Self Reliance**

The socio-economic and political advancement of Papua New Guinea will be directed at strengthening national sovereignty and standing as a nation. The development of the fisheries sector will reinforce the collective self-reliance spirit of the citizenry and the economic security and sovereignty of Papua New Guinea.

- **Natural Resources and Environment**

Papua New Guinea's natural resources are classified by the National Strategy for Responsible Sustainable Development (StaRS) as strategic assets. The FSP promotes the sustainable management of Papua New Guinea's fisheries resources to ensure that both present and future generations benefit from its use.

- **Papua New Guinea Ways**

Papua New Guinea has a rich heritage of traditional wisdom and knowledge in the use of environment capital. The FSP recognises these attributes as guiding sustainable principles for the development and economic growth of the fisheries sector in Papua New Guinea.

National Strategy for Responsible Sustainable Development (StaRS)

The principles of sustainable development have historically focused on conservation strategies rather than looking at the potential of the value from Papua New Guinea's ecosystem services. StaRS corrects this by giving greater value and prominence to the Papua New Guinea's natural and cultural resources and prescribes an environmentally responsible 'green' growth pathway. The FSP recognises and elevates Papua New Guinea's fisheries resources to a higher level of consideration as drivers of growth.

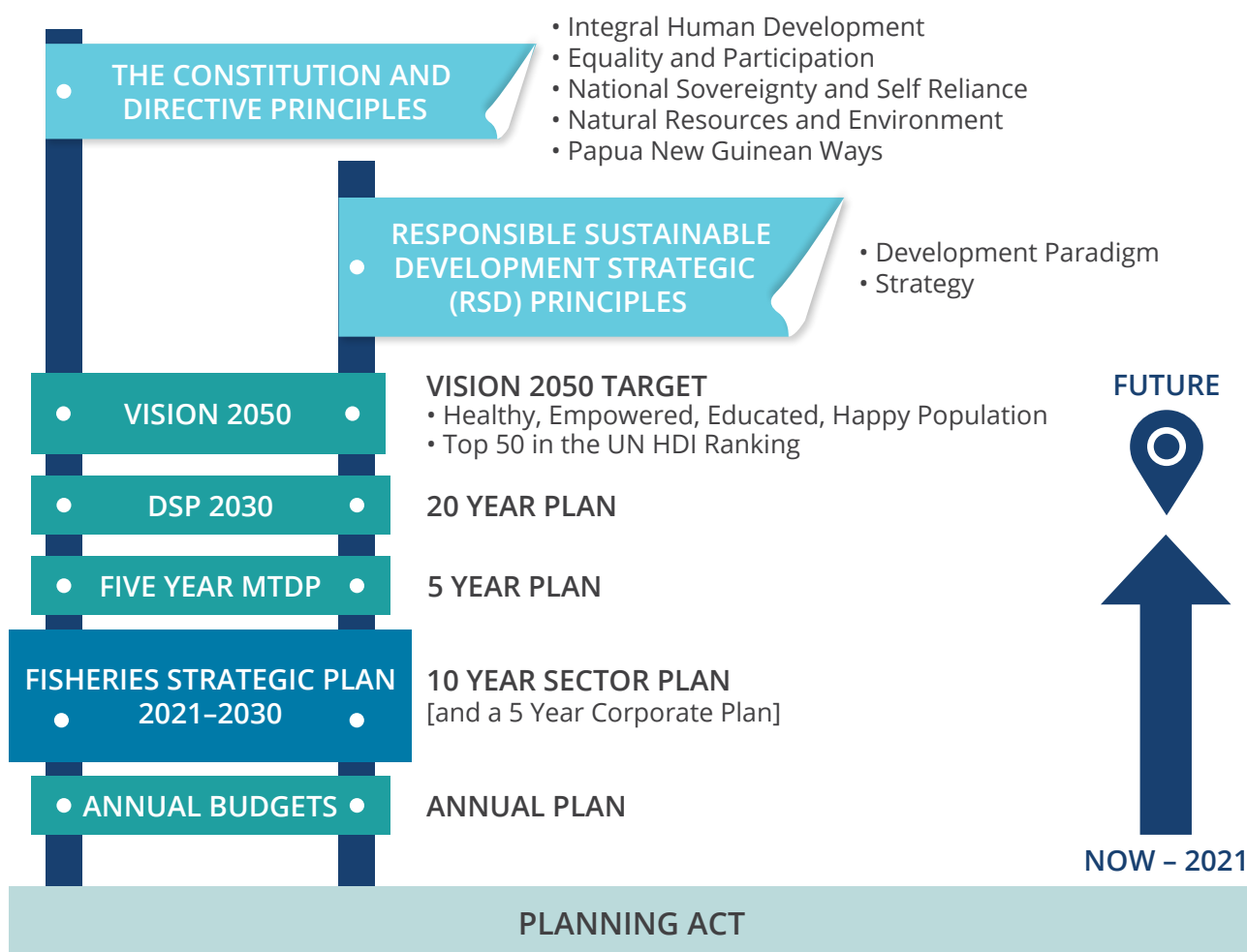
The five National Goals outlined on the following page and the development principles prescribed by StaRS form twin pillars of development principles, which the FSP incorporates.

Vision 2050

Vision 2050 provides a long-term development trajectory for Papua New Guinea. The FSP translates the focus areas of Vision 2050 to the fisheries sector for the next ten years.

Elevating the Fisheries Strategic Plan in the National Planning Framework

Figure 1: Aligning to the National Planning Framework



Alignment with the Government's Signature Development Policy

The current Government's overarching development strategy is built around the Prime Ministerial Manifesto to take back Papua New Guinea and leave no child behind. It rallies the citizenry and development partners to commit to a development path leading to a robust, inclusive and sustainable economy.

The 'Loloata Commitment' re-asserted the strategy. It acknowledged the weakness in the country's fiscal settings and set out a rescue and reconstruction fiscal strategy, beginning with a thorough and realistic assessment of the fiscal situation and the adoption of corrective measures through the 2019 Supplementary and 2020 Budgets. These measures set the building blocks for fiscal consolidation into the medium term, the timeline for this plan.

The Government adopted the "PNG National Restoration and Growth Commitment 2020-2022" and guided by it introduced; a number of capital programs; PNG Connect, micro Public Investment Program (PIP) for rural infrastructure, and special intervention programs aimed at investing in PNG's infrastructure.

This strategic plan aligns with the capital investment strategy of the government by making infrastructure as its first KRA. The intended infrastructure development in the fisheries sector aims to connect the country's land-based roads and utilities grid, elements of the PNG Connect backbone, with the maritime network of transport around the country. Wharves and jetties together with air transport form a critical link between land-based networks with maritime and air networks, and provides for a complete national enabling grid of infrastructure that underpins the macro domestic economy's connectivity with external economies. Investment in the infrastructure recommended in the plan responded directly to the government's development strategy going forward.

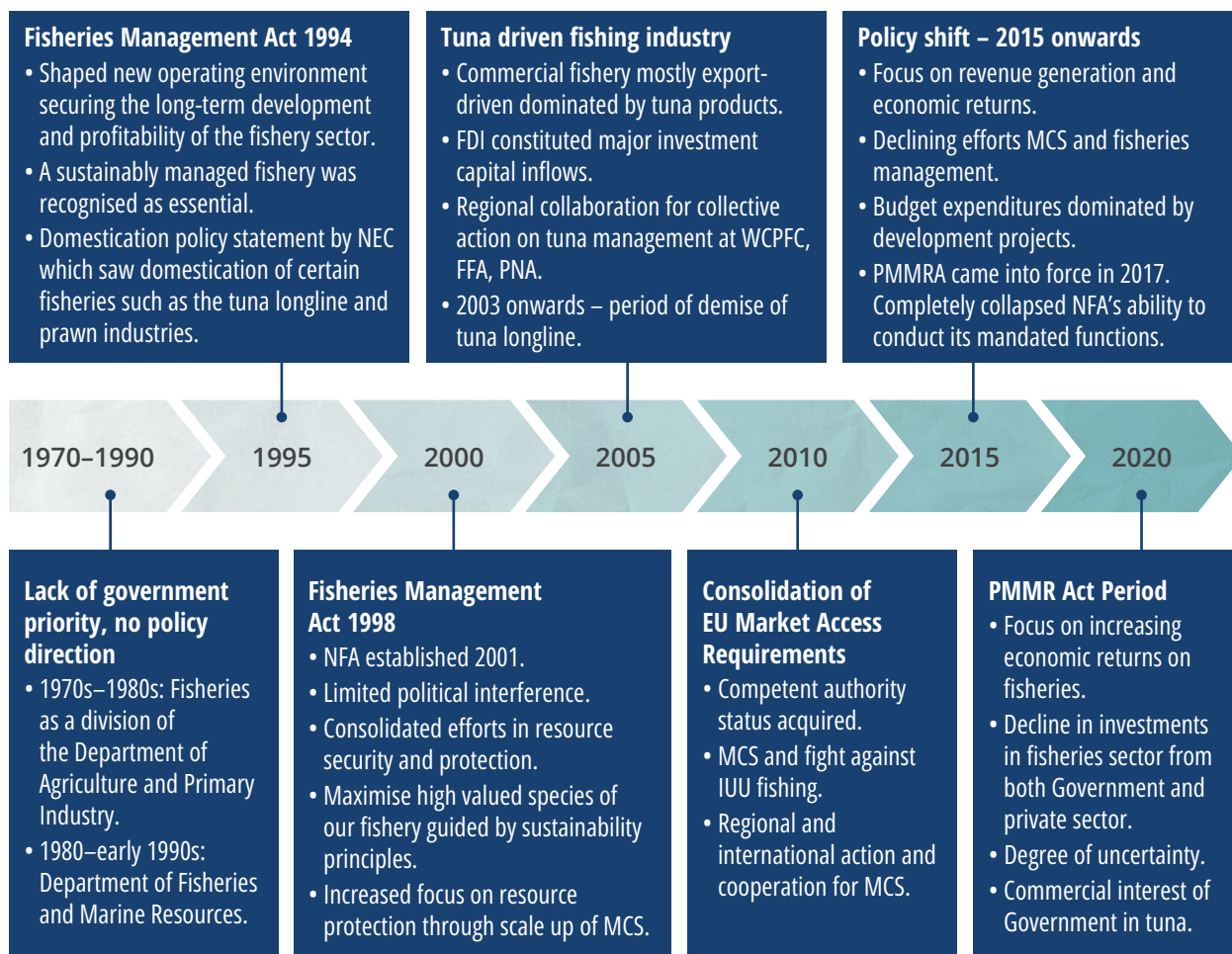
Status of the Fisheries Sector and its Potential for Growth



Fisheries Sector Transformation

The growth of Papua New Guinea's fisheries sector has come a long way in the last 50 years. Significant changes in the sector were initiated and guided by strategic policy shifts and key legislation that proved to be transformational, as depicted below.

Figure 2: Key sector events and milestones



The ensuing policy and regulatory environment contributed to a new operating environment for both the NFA and the industry, including relations with external stakeholders. This was contingent on making sure that the long-term sustainable future of the country's marine resources was secured. It was based on this, that subsequent commercial development that targeted high value species was encouraged and promoted. This took place in a closely regulated environment, with protecting the resource as government's top priority. Commercial fishery remains to be export-driven, with foreign direct investment (FDI) constituting major investment capital inflows in growing the sector.

Having managed PNG's extensive and valuable fisheries sector that ranges from inland river fishery, aquaculture, coastal beche-de-mer and reef fishery to the prawn trawl and large-scale deep-water tuna fishery, an economic and revenue driven policy shift took place in 2015. Focus of government was on revenue generation and broad economic benefits. The latter was to be generated on the back of the onshore investment policy agenda. This two-fold policy objectives to maximise revenue and also encourage increased broad economic benefits remains and with it the challenge to strike a balance on creating a conducive policy and industry operating environments.

Notwithstanding recent legislative constraints brought about by the Public Money Management Regularisation Act 2017 (PMMRA), the government has forged ahead by encouraging the fisheries sector to adopt a broad-based growth approach, along with the implementation of the corresponding policy intent to capitalise the sector in line with its overarching commercialisation agenda. Subsequently, this recognises the fisheries sector as a strategic asset that potentially can generate increased sustainable revenue for the government, provide consistent food security and generally improve the socio-economic well-being of people whose livelihoods depend on the fisheries sector.

Fisheries Overview

The fisheries potential of PNG is yet to be fully realised. Our rich and large Exclusive Economic Zone (EEZ) of 2.4 million square kilometres in extent, is one of the most productive in the region. Although we lack large areas of continental shelf, our coastal waters and extended reef systems are extensive and are primarily harvested for subsistence purposes. Our complex river systems and inland waters also represent considerable potential for development, particularly in aquaculture.

Offshore Fishery

Tuna is the largest fishery in Papua New Guinea and represents a balance of both domestic industry development and Foreign (DWFN) Access arrangements. The fishery is primarily based on the skipjack and yellowfin fish species with smaller quantities of bigeye and albacore.

The fishery is guided by a National Tuna Fishery Management Plan, which establishes an overall management structure and an application framework for the longline, purse-seine and pole and line fisheries, including license limits and total allowable catches. PNG has embarked on onshore investments in the tuna fishery and as a result foreign and domestic access by purse-seine vessels is increasingly linked to commitment to onshore investment, preferably in the form of tuna processing.

Tuna is found throughout the PNG fisheries zone but especially to the north and east. As tuna are a migratory species moving from area to area depending on climatic conditions, the quantity found in the PNG EEZ may vary significantly from year to year. A regional approach to managing tuna is therefore important and PNG is a party to a number of bilateral and multilateral arrangements for this reason.

Annual catch is usually about 150,000mt to 200,000mt per year but it is estimated that the resource can sustain much higher annual catches of 250,000mt to 300,000mt. The potential market value is about K1 billion depending on the commodity price. Catch from PNG waters accounts for 20-30% of the regional catch and is about 10% of the global catch. In the recent past, catch trend by vessel category has changed, such that 50% is now caught by vessels associated with on shore investments in PNG and the other 50% is caught by foreign purse-seine vessels who used to catch most of the tuna.

Papua New Guinea currently has access agreements with Taiwan, Korea, Japan, Philippines and People's Republic of China and is negotiated on an annual basis. A multilateral treaty arrangement exists with USA. These agreements establish the number of vessels allowed to enter the fishery and the access fees payable. Usually about 130 foreign purse-seine vessels fish in PNG waters each year, but this is now decreasing as some are associated with the onshore investments in PNG and are fishing under the Federated States of Micronesia (FSM) arrangement.

Tuna is exported in the form of fresh chilled, canned, fishmeal and frozen tuna products. Chilled tuna is air freighted to the sashimi market in Japan. Frozen tuna is exported to Philippines and Taiwan. Canned tuna is mainly exported to USA, Germany and Great Britain and small quantities to the Melanesian Spearhead Group countries. Fishmeal is exported to Australia and Japan. Export value of all tuna products is now about US\$400 million. This excludes catch by foreign vessels that pay access fees and take fish to overseas processors. Aside from the export value it is estimated that more than 10,000mt of canned tuna is sold locally in Papua New Guinea per year.

Resource management is a key factor in fisheries and in this regard, PNG has one of the largest observer programs in the region to collect data for management purposes. The program has over 200 trained observers who work on tuna vessels. They also cover non-tuna fishery vessels such as the prawn vessels, shark longline vessels, handline vessels as well as a 100% coverage on vessels fishing under trial fishing permits. Port samplers are also stationed at major ports to carry out sampling on vessels calling into ports.

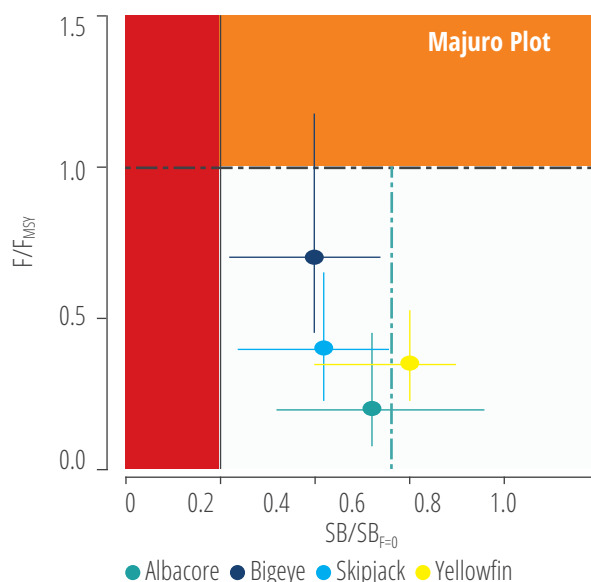


Tuna Stock Status

The status of the four main tuna stocks of interest to PNG (South Pacific albacore, bigeye, skipjack and yellowfin) is illustrated in Graph 1, three ways using the latest figures provided by Secretariat of the Pacific Community (SPC) on the following:

- Current stock status
- Stock depletion trends
- Catch and stock status by ocean region

The “Majuro” plot in Graph 1 illustrates the estimated relative status of each of the main tuna stocks against biological reference points (black lines).



Graph 1: Majuro Plot: F-Fishing; Reference Points; SB-Spawning Biomass

The traffic light colouring provides a rapid indication of the biological ‘health’ of each stock, with the overall intention to stay in the green and avoid the red and orange quadrants. All four main Western and Central Pacific Ocean (WCPO) tuna stocks (albacore, bigeye, skipjack and yellowfin) are deemed to be in the green area indicating that these stocks are “biologically healthy”.

The stock status comparison in Figure 3, is based on spawning biomass and fishing mortality relative to their specific reference points. The data for the stock status assessments were obtained directly from documents produced by the responsible Regional Fisheries Management Organisations. The catch data utilised in the Majuro Plot is taken from the average catch and tagging data from the last five years.

Specific to PNG’s catch and value status, Table 1 below illustrates the total tuna catch of all vessels licensed to fish in the PNG EEZ, with their equivalent value in the US dollars.

The table below shows the total tuna catch of all PNG licensed vessels in the PNG EEZ, with value in the US dollars.

All Fleets	2012	2013	2014	2015	2016	2017	2018	2019
Catch (tonnes)	586,102	592,004	339,172	190,754	316,278	383,267	371,861	353,932
Longline	4,306	1,350	1,978	1,584	896	6,394	8,112	6,416
Purse Seine	581,798	590,654	337,194	189,170	315,382	427,331	414,687	376,873
Value of catch (US \$m)	1,318	1,245	652	272	496	765	694	570
Longline	34	10	14	10	6	42	56	38
Purse Seine	1,284	1,235	638	262	496	724	638	532
National Fleet	2012	2013	2014	2015	2016	2017	2018	2019
Number of vessels	78	66	65	65	65	95	78	76
Longline	27	15	10	10	10	12	15	15
Purse Seine	51	51	55	55	55	83	63	61
Catch (tonnes)	240,055	194,301	236,823	215,720	288,317	304,478	313,870	265,966
Longline	3,892	1,334	1,943	1,252	231	1,987	2,355	1,902
Purse Seine	236,163	192,967	234,880	214,468	288,086	304,478	313,478	267,291
Value of catch (US \$m)	551	422	374	282	427	580	557	412
Longline	31	10	14	8	2	12	19	12
Purse Seine	520	412	360	274	425	568	539	400

Table 1: Catch and Value of Tuna in PNG EEZ

Source: FFA

Tuna Processing Sector

The last fifteen (15) years has seen significant growth in the tuna-processing sector in PNG. It is Government policy priority to ensure it maximises net economic benefits from the nation's fisheries resources and it is the tuna fishery that has provided much needed net economic benefits for the country. Key government investment incentives packaged under the pioneer scheme, such as a 10-year tax holiday, accelerated depreciation and concessions introduced in 1995 actually triggered investment in onshore tuna processing and value-added industries. This government assistance attracted the much-needed foreign direct investments (FDI), essential for developing the country's tuna processing sector, that currently boasts six (6) tuna processing plants whose combined investment is estimated to be around US\$250m (K831m) and growing.

Growth of PNG's tuna processing sector was further leveraged through preferential market access, whereby PNG canned tuna exports benefit from a 24% duty exemption into the lucrative EU market. This preferential market access that has allowed PNG's tuna processing sector to be competitive, however has declined in importance over time as global trade increasingly becomes a level playing field due to preference erosion.

The 1995 domestication policy targeted the longline tuna sector, which showed increased domestic investment in the industry initially, but due to the high operational costs and changing sashimi market conditions over the years, activities in the longline industry has markedly declined. The domestic longline industry is struggling as is the case in other regional neighbouring longline fishery. Regardless of fluctuating global trends, the opportunity for PNG nationals to realise their potential in the sector continues to be promoted by the domestication policy.

However, large-scale tuna fishing operations and processing is capital intensive with a complex value chain system that requires specific skill-sets to ensure sufficient management of the entire supply and value chain of the commercial tuna business efficiently.

Understanding these complexities, the NFA has embarked on an approach to gradually limit the activities of distant water fishing partners who have not shown any commitment to onshore investment, whilst giving preference to those who are willing and able to link their fishing operations to shore-based investments. At the same time, all vessels that are linked to national processing plants are encouraged to offload their catch resulting in an increased volume of processed fish as their processing capacity increases. These directives stem from the understanding that the development of any processing industry has much more broader socioeconomic benefits to the economy in general, in comparison to a focus on increasing the fishing fleet whose contributions towards employment, foreign exchange, commerce & trade, taxes and spin-off benefits are limited.

Revenue from the tuna fishery remains the highest income stream for the fisheries sector. Since the introduction and implementation of the Vessel Day Scheme (VDS) in 2010, PNG has been able to quadruple the value of its tuna resource. These gains are now believed to have reached an equilibrium point. Consequently PNG is now considering innovative options to maximise the value of the tuna fishery. Alongside broadening the scope of our industry development, must also include the development of alternative investment vehicles to bank the gains that have been realised in the tuna fishery.

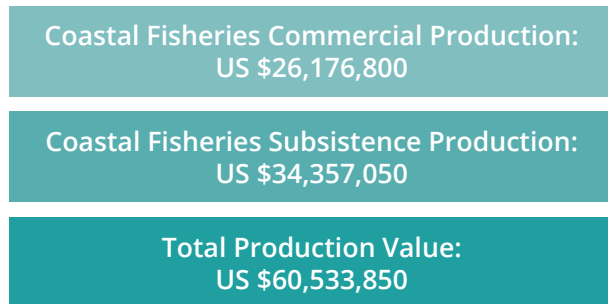
Coastal Fishery

Coastal fisheries add an important socio-economic value to the coastal communities in PNG. Bulk of the coastal fisheries production is attributed to subsistence use, and consumed locally. The value of these fisheries is often not considered in national development planning and accounting. Estimates of coastal and subsistence fisheries catches are difficult to derive but the study from Gillett (2009) provides some indicative figures that highlight the value of coastal subsistence compared to coastal commercial fisheries.



The estimation of PNG's aggregate annual production in US dollars in 2014 (FAO) is presented in the figure below.

Figure 3: Estimate of Coastal Fisheries Production (FAO 2014)



Potential for commercialising other key coastal fisheries resources need to be explored.

Prawn fishery

A small fleet of prawn vessels with sizes less than 30 meters length overall (LOA) are allowed to operate in PNG's Gulf of Papua Prawn Fishery (GOPPF). The total number of trawlers allowed in GOPPF is 15. The fishery has reached its full capacity. A small prawn fishery exists in the Orangerie Bay Prawn Fishery with 2 vessels measuring less than 14 meters (LOA) allowed. All prawn-fishing operations are restricted to citizen companies operating out of the respective provinces.

In the Gulf of Papua fishery, a total annual catch from all species of prawns is on average about 390 metric tonnes per annum, with an estimated value of \$4.6 million. The fishery remains closed to foreign involvement. Prawns are processed and packed on board and mainly exported to Japan, Singapore and Australia or are sold domestically within PNG. The fishery is managed under the Gulf of Papua Prawn Fishery Management Plan.

The Orangerie Bay prawn fishery has an annual TAC of 35 tons. Restrictions and high fishing operational cost appear to make this fishery less economic than the Gulf of Papua prawn fishery. An annual harvest of prawn (all species) was worth approximately US\$1 million in exports alone with products exported to Asian markets. The Orangerie Bay Prawn Fishery is managed under a separate Management Plan.

The prawn and lobster fisheries in the Torres Strait Protected Zone are being co-managed with Australia under the Torres Strait Treaty catch sharing Arrangements. The management is aimed at preserving the fishery for the traditional inhabitants, with strict limited entry for non-traditional inhabitants.

Lobster fishery

The lobster fishery in the Torres Strait is one of the six fisheries managed under Article 22 of the Torres Strait Treaty, which was ratified between Papua New Guinea (PNG) and Australia in 1985. The Treaty's main objective is to preserve the fishery for traditional inhabitants of Torres Strait. There is limited entry for non-traditional inhabitants and expansion is strictly reserved for traditional inhabitants. A limit of 7 licensed freezer vessels are allowed to operate in the fishery at any one time. A catch sharing agreement with Australia allows PNG divers to catch 25% share from Australian side of the Torres Strait Protected Zone (TSPZ). To conserve the breeding populations, a ban on trawling for lobsters in both Australia and PNG waters was imposed in 1984.

There are two (2) main companies that operate four (4) freezer vessels that freeze product at sea and each of these vessel supports about 5 – 6 dinghies. Each vessel is allowed to have licensed 5 – 6 hookah gear. There are currently over 500 divers involved in the fishery, although many of these operate few days of the year.

Tuna Offload Process in Lae, Morobe Province



Most participants are shore-based, operating from dinghies with outboard motors. There are also shore – based divers who operate independently whose catches are returned and sold to one of the 2 fishing companies or other licensed shore-based facilities not involved in the fishing operations. Under the TSPZ treaty arrangement, the Global TAC is set at 623.5 tons for 2020, pro-rated annually based on CPUE, catch history and independent surveys.

For 2020, the TAC was recommended by TRL Resource Assessment Working (TRLRAWG) as per the application of TRL Harvest Control Rules (HCR) from pre-season fishery independent survey, total reported catches for both Parties and catch per unit effort data from the Australian Fishery. The TAC is apportioned within each jurisdiction based on the agreed global TAC. Based on the catch sharing arrangement under article 22, the catch apportionment to PNG waters is agreed at 93.525 tonnes (15%) and to Australian waters, the catch appointment is at 530.0 tonnes (85%) consistent with the provisions of the treaty. TSPZ lobster fishery is approaching its full capacity relative to the number of fishing vessels allowed under the plan. The TSPZ generates an annual estimated average of about 118mt, worth approximately a little over USD3.5 million. Products are mainly exported to the United States markets. Other common lobster species remain under-utilised in most provinces of PNG that maybe explored in the future.

Beche-de-mer

Papua New Guinea exports on average 630 tonnes of beche-de-mer annually to markets in Hong Kong, China, Singapore, Vietnam, and Malaysia. Of those beche-de-mer products exported to other markets other than China, over 60% are re-exported to mainland China.

Beche-de-mer fishery contributes significantly in terms of export revenue for the country and income generation for more than half a million Papua New Guineans. The fishery is the second biggest export earner for PNG after tuna and contributes USD50 million of export revenue and about USD27 million goes directly to coastal and island communities annually. The income generated from the beche-de-mer fishery going directly to men, woman and children in the coastal and island communities is significant and lasts for the duration of the four-month fishing season. The monthly income makes up a significant proportion of annual income direct to families and is the single most important fishery that contributes the highest income directly

to the coastal and island people of PNG. The value of this fishery to the coastal and island communities is estimated at USD6.75 million per month across Papua New Guinea.

The BDM fishery is managed under the National Beche-de-mer Management Plan (G368) and has reached its full capacity. There is potential in hatchery-based production for processing, export, stock enhancement and re-stocking.

Crab fishery

Mud Crab is an export product, which has been exported, in small volumes for a long period. Official NFA records show mud crab export since 1994. In 1994, 7 tonnes of mud crabs valued at US\$59,000 was exported. Since then the trend showed a continuous decline both in quantity and value, recording it's lowest in 1999. Exports increased after 1999 but stabilised at around 3 tonnes in 2000 and 2001. From 2015 onwards mud crab export has been increasing significantly. In 2016 export tripled the export achieved in 2015 reaching over 100 tonnes for the first time. Export in 2015 was 33 tonnes while in 2016 export was 111 tonnes. This further increased to 193 tonnes in 2017.

NCD and New Ireland provinces are the most important exporters of mud crabs accounting for 77% and 23% respectively. Milne Bay, Western, Central and Madang account for less than 1% each of mud crab export from 2002 to 2015. Total value of mud crab exported in 2017 was over US\$0.5 million and it further increased in 2018 where 314 tonnes was exported valued at US\$1.3 million. They are either exported live, frozen or cooked. Crab fishery is managed under a National Mud Crab Management Plan (G813).

There is potential for fattening project and hatchery based production for processing, export, restocking and stock enhancement.

Aquaculture and Inland Fisheries

The key species harvested at the subsistence, artisanal and small-scale commercial level are tilapia, carp, rainbow trout, seaweed and barramundi. Previously prawns and gold-lip pearl aquaculture were also operating and have the potential for commercial scale production. Commercially operated aquaculture farms have now ceased operation. The prawn farm in Kokopo, East New Britain closed due to change in management priority, while the pearl farm in Sariba Island, Milne Bay closed due to the unresolved conflicts with the landowners.

Aquaculture production is dominated by subsistence farming, followed by small-scale commercial operations for the domestic market.

Seaweed farming and production, is an emerging alternative fishery that supports livelihood at the community level and is the only product from the aquaculture sector that is exported.

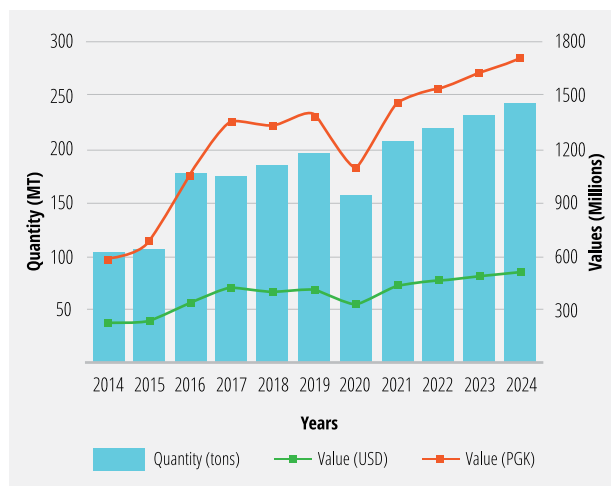
Other Fisheries

Other fisheries resources of significant community or national interest include aquarium species, trochus, barramundi, black bass, deep water snapper, squid, mackerel and other near shore species. These resources are dominant and abundant within the coastal and near shore regions, offering opportunities for further exploration. It is the intention of NFA to work with communities and sub-national governments to establish effective management regimes to realise the potential of these fisheries.

Fisheries Trade

The exports of fish and fishery products from Papua New Guinea, in terms of quantity, have continued to increase annually over the last five years. In 2014, over 103,000 tons of fish and fishery products were exported to various overseas markets. In 2019, the quantity of exports was almost doubled with 196,000 tons of products exported valued at PGK1.3 billion. Exports continue to increase in 2020 despite the threat of COVID-19 with a total quantity of 206,145 tons exported valued at K1.5 billion for all fish and fishery products.

Graph 2: Export trend for all fish and fishery products from 2014 to 2019 and projections for the next 5 years



From the annual total exports, tuna comprises 98% in the form of canned, loins, frozen whole, dried fish meal and fish oil, while dried sea cucumber (beche-de-mer), finfish, prawns, sharkfin, fish maw, shells, lobster, and crabs make up the remainder of the percentage. Overall, exports of fish and fishery products continue to record steady increases for the last 5 years from 2014 to 2019.

From the 98% of the overall exports of tuna related products, the recorded 80% comprised of frozen whole tuna, followed by canned tuna at 16%, and tuna dried meal at 3%. Combined exports from the coastal fisheries sector comprised only 2% of the total PNG fish and fishery exports. The onshore-based tuna processing facilities and locally-based foreign vessels dominated the tuna exports and the total combined fish and fishery exports.

Most canned tuna products are exported to the EU market with significant quantities of frozen whole round tuna either to sell onwards, or for further processing under the EU tax free arrangement for PNG and the ecolabelling certificate to Parties to Nauru Agreement countries. Within the region, PNG canned tuna is also exported to Fiji, Solomon Islands and Vanuatu under the trade agreement signed by leaders of Melanesian Spear Head (MSG) countries.

Some frozen whole round tuna is exported to Japan, Thailand, Fiji, Taiwan, Philippines and Korea mainly to supply their processing plants. Fish meal, a by-product of tuna from our processing plants is exported to Australia, Japan, Philippines, Saudi Arabia, Sri Lanka and Taiwan. Fresh chilled tuna is exported to Japan, Philippines and Spain, while fish oil from processed tuna is exported to Malaysia, New Zealand, Peru and Philippines.

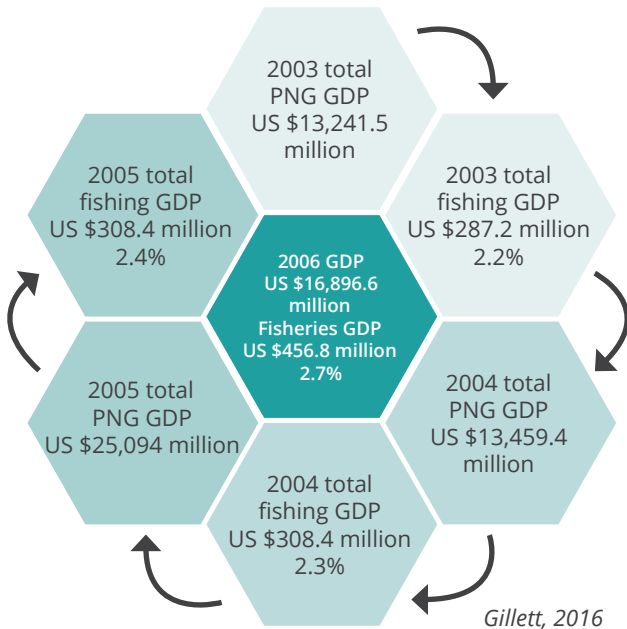
Frozen lobster is exported to Australia and China while live lobster is exported to Australia and Hong Kong. Singapore, China and Hong Kong have diverse markets for PNG's fish and fishery products like BDM, Crabs (live & frozen), live fish, fish maw (dried fish bladder), shark fins (dried), lobster, stingray, shrimps and shells.



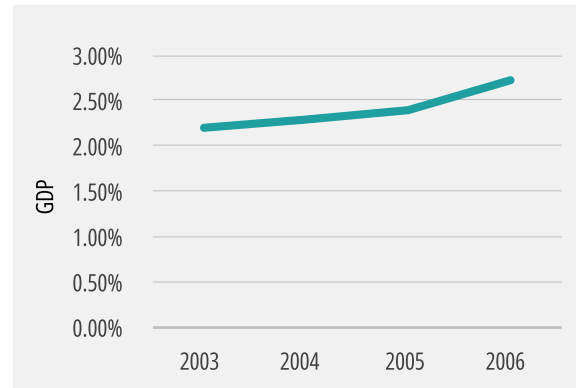
Fisheries Contribution to the National Economy

While the most recent official figure on the fisheries GDP contribution to the national economy is lacking, the most recent expert determination is from the FFA and SPC report by Gillett, 2016, which showed an encouraging upward trend from 2003 to 2006 fiscal years as indicated in the graphs below.

Figure 4: Fisheries GDP



Graph 3: Contribution to National GDP



NOTE: NFA and the Department of Treasury are in the process of collating all the information and data to be able to determine the most updated real value of fisheries sector contribution to the GDP.

Tuna boats engage in the transshipment of Tuna catch in Simpson Harbour, Rabaul.





Key Challenges and Opportunities

The process of creating value from the country's fisheries assets requires careful consideration of various factors in tapping the productive capacity of the fisheries sector. Significant progress has been made by the Government through the NFA to realise the growth potential of the sector that is equitable, fair and sustainable. Yet, there are a number of underlying binding constraints that continue to impede the sector from fully realising its growth potential.

These challenges include access to capital which remains a major constraint to development; inadequate marketing structures, lack of managerial capacity and capability, entrepreneurial skills, high cost of utilities and lack of supporting infrastructures. Against the backdrop of these challenges, there is need to incorporate policy measures that take a broad cross-sectoral development view. The FSP's growth driven philosophy sees these challenges as opportunities that can be strategically prioritised at the high level, as identified below.

Enabling Infrastructure and Operating Environment	The enabling infrastructure and the operating environment are being recognised as key determinants for growth in the sector. Investments in the appropriate physical infrastructures as part of the PNG Connect agenda and other government investment programs, including having a right policy mix, will lead to economies of scale, efficiency and reduction in the high cost of doing business in the PNG.
Maximise Economic Returns from Fisheries Resources	The implementation of the Vessel Day Scheme (VDS) has significantly increased fisheries revenue over the last decade. It also provides the opportunity to accelerate growth and derive broad economic returns through appropriate VDS capitalisation, including other feasible development options for operators. The government will participate in the commercial fisheries space to add value, diversify the production base, open new markets and increase the participation of nationals.
Governance, Security and Sustainability of Fisheries Resources	To support the broad-based economy, the sustainability and security of fisheries assets is paramount. The sector will continue to strengthen and improve its efforts in fisheries management and conservation to ensure a healthy ocean ecosystem and the sustainability of stocks. These initiatives will be complemented by an integrated licensing and MCS framework designed to enforce fisheries regulations and to minimise risks such as IUU fishing and related security issues.





Coastal, Aquaculture and Inland Fisheries

Coastal, aquaculture and inland fisheries are key subsets of the fisheries sector that support the vast majority of the populace that live along the coastline, the islands and the highlands. While there are many challenges, the potential growth areas in coastal, aquaculture and inland fisheries are substantial. The FSP prescribes that coastal fisheries hubs and aquaculture nucleus infrastructure are developed to ensure food security and livelihood support for our people.

Climatic Change

The negative impacts of climate change on the fisheries sector can be devastating. These include the rising sea temperatures and sea levels which in turn impacts the oceans, ecosystems and fish stocks. To climate proof the sector; adaptive management approaches, mitigation and resilient strategies are important considerations.

Research and Development, and Capacity Building

The capacity to undertake research and development is an opportunity that the FSP has prioritised for the sector. To support the policy directives of the FSP, the scientific capacity to provide scientific and evidence-based policies is critical. A systematic training and capacity building program for the sector is encouraged.

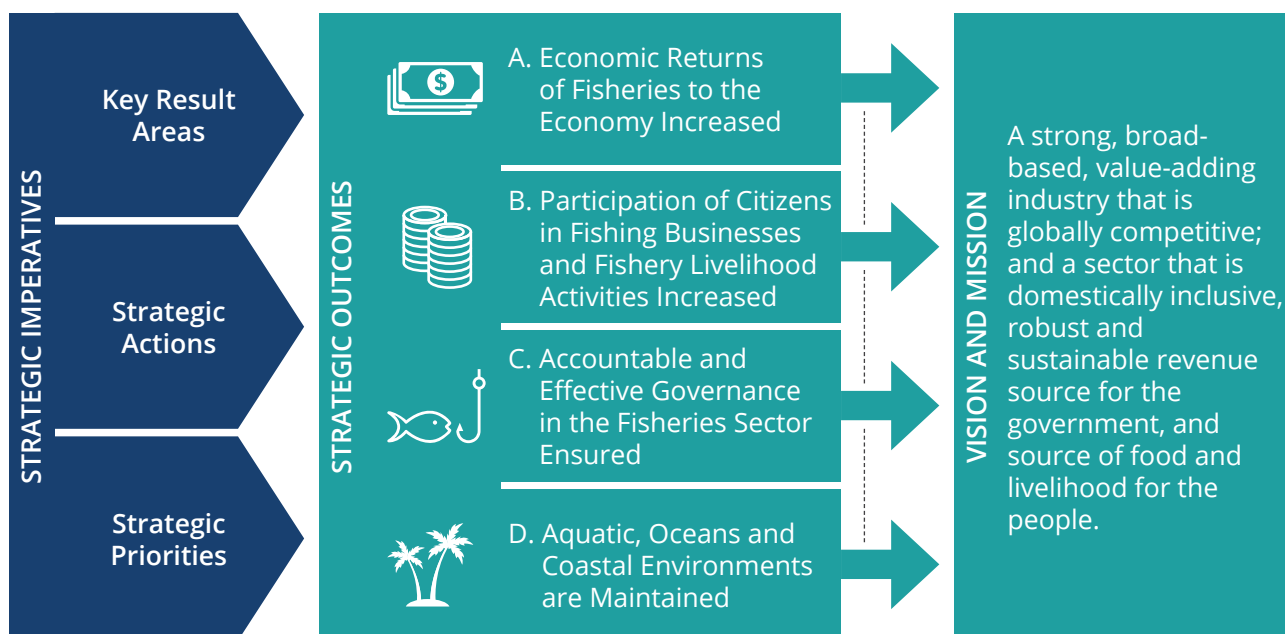
Beche-de-mer hatchery project at Nago Island Marine Research Facility (NIMRF), New Ireland Province



Strategic Outcomes

The National Fisheries Authority (NFA) in collaboration with partners will work towards building a dynamic fisheries sector that is globally competitive and domestically inclusive by 2030. To achieve this, the sector will be guided by (4) specific Strategic Outcomes as depicted in the FSP 2021-2030 Framework below.

Figure 5: PNG Fisheries Strategic Plan Framework



Key Results Areas (KRAs)

This Strategic Plan is structured around eleven (11) Key Result Areas, each of which is underpinned by specific strategic actions and priorities.

Key Result Area 1	Develop Enabling Infrastructure and Improve Industry Operating Environment	Investment in dedicated fisheries development and transportation infrastructure such as wharves, ports, jetties, slipways and onshore facilities to enhance competitiveness of the industry.
Key Result Area 2	Optimise Government Revenue	Fisheries is recognised as a strategic asset that can generate sustainable economic benefits, create wealth and contribute to National Government revenue.
Key Result Area 3	Increase Downstream Processing, Value Adding, Employment and Export Earnings	Promote value creation through expanding productive capacities, supply chain opportunities, product development and markets that increase broad economic benefits.



RD Tuna Wharf and Cool Store and prospective site for PMIZ (Pacific Marine Industrial Zone)

Key Result Area 4	Expand and Enhance International Trade and Market Access for Fisheries Products	Take advantage of continued global demand for seafood by improving market access opportunities and proactive negotiation to secure beneficial trade agreements.
Key Result Area 5	Support, Maintain and Encourage Genuine Foreign Direct Investment Inflow	Conducive policy and regulatory environment must be maintained and improved to attract greater and genuine inflow of Foreign Direct Investment (FDI) to grow the sector.
Key Result Area 6	Optimise Papua New Guinean Participation and Local Content in the Fisheries Sector	Constitutional directive to enable citizens and the government to have control of the bulk of the economic enterprises and production.
Key Result Area 7	Improve Food Security and Livelihood Opportunities	Abundant fisheries resources of the country must be made accessible, readily available and affordable as major source of nutrition, food security and to support livelihood.
Key Result Area 8	Strengthen Research, Development, Extension Support Services, Training and Capacity Building	The sector must remain relevant, proactive and fully equipped through research, training and capacity building along with hands-on extension support services to improve service delivery.
Key Result Area 9	Maintain and Strengthen Sustainable Fisheries Management and Healthy Ecosystems	Long term sustainable development of the sector and robust regulatory systems and procedures to ensure a well-managed fishery and healthy ecosystems.
Key Result Area 10	Build, Strengthen International Fisheries Cooperation and Engagements	Fisheries considerations contributes to evolving geopolitical landscape in the region that cannot be ignored in promoting national interests whilst subscribing to regional solidarity on areas of common interests.
Key Result Area 11	Encourage Evidence-based Policy and Planning Approach	Evidence-based policy and planning requires available data, information and knowledge to credibly inform the decision making process.

Strategic Actions



The following strategic actions address the key challenges and constraints that the fisheries sector is currently faced with and provides the basis for the implementation of strategic priorities.

KRA 1: Develop Enabling Infrastructure and Improve Industry Operating Environment

Investment in dedicated fisheries development and transportation infrastructure such as wharves, ports, jetties, slipways and onshore facilities and to enhance competitiveness of the industry.

Strategic Action 1.1: Development of Dedicated Fisheries Development and Transportation Infrastructure

Strategic Priorities:

- (i) Endorse and implement the Fisheries Infrastructure Development Plan.
- (ii) Promote the development of fisheries hubs and aquaculture nucleus infrastructure at economically feasible locations.
- (iii) Strategic partnership with key stakeholders at all levels.

Strategic Action 1.2: Secure Funding and Budgetary Support to Finance National Infrastructure Plan

Strategic Priorities:

- (i) Create a fisheries infrastructure development fund.
- (ii) Secure concessional financing.
- (iii) Encourage and secure blue financing in partnership with development partners.

Strategic Action 1.3: Address Operational and Cost Efficiencies of the Industry

Strategic Priorities:

- (i) Promote designated fisheries-focused Special Economic Zones (SEZ).
- (ii) Improve supply chain constraints to encourage volume and production output.
- (iii) Explore options to reduce cost of utilities in collaboration with relevant regulatory authorities.

Strategic Action 1.4: Review and Improve Restrictive Regulatory Environment

Strategic Priorities:

- (i) Encourage inter-agency cooperation to minimise conflicting policy objectives and address restrictive regulatory measures.
- (ii) Review existing fisheries management plans, legislations and domestication policies.
- (iii) Encourage broad based incentives to support the capitalisation of the sector.

KRA 2: Optimise Government Revenue

Fisheries is recognised as a strategic asset that can generate sustainable economic benefits, create wealth and contribute to the National Government revenue.

Strategic Action 2.1: Maximise Value of Participatory Rights (Access)

Strategic Priorities:

- (i) Maintain and optimise value of Papua New Guinea's Party Allowable Effort (PAE).
- (ii) Effective VDS utilisation to support continued growth in the processing sector and revenue generation.
- (iii) Consider VDS capitalisation options to further increase value of days.

Strategic Action 2.2: Consider and Mitigate against Factors Influencing VDS Revenue

Strategic Priorities:

- (i) Collaborate with regional partners to monitor the potential impact of climate conditions and the consequential long-term impact on PNG's domestic tuna industry growth prospects and revenue projections.

- (ii) Improve competitiveness of PNG VDS against competing elements that undermines the value of the PNA VDS.
- (iii) Strongly position the country to take advantage of opportunities emanating from changing climate conditions into the future and competing elements that undermines the value of the PNA VDS.

Strategic Action 2.3: Strengthen Governing Mechanism for Revenue Optimisation

Strategic Priorities:

- (i) Review concessions on taxes and duties and implementing appropriate rates.
- (ii) Review agreements to strengthen revenue mechanisms.

KRA 3: Increase Downstream Processing, Value Adding, Employment and Export Earnings

Promote value creation through expanding productive capacities, supply chain opportunities, product development and markets that increase broad economic benefits.

Strategic Action 3.1: Develop a Broad-Based Fisheries Industry and Sector

Strategic Priorities:

- (i) Support business models and strategies to add value to existing commercial fisheries and potential ancillary and support industry services.
- (ii) Encourage and develop fisheries that have commercial potential by developing fisheries management plans to support their commercialisation.
- (iii) Encourage capitalisation of coastal, inland and aquaculture from both domestic and genuine foreign direct investment that also offer trading platforms and established markets.

Strategic Action 3.2: Optimise socioeconomic returns from onshore processing

- (i) Increase the production capacity of the existing processing plants to their full production capacity.
- (ii) Develop the supply-side capabilities for tuna raw material from PNA parties in light of the ENSO effect.
- (iii) Diversify the fishing industry to increase volume of fish and fishery exports.

KRA 4: Expand and Enhance International Trade and Market Access for Fisheries Products

Take advantage of continued global demand for seafood by improving market access opportunities and proactive negotiation to secure beneficial trade agreements.

Strategic Action 4.1: Maintain and Strengthen PNG Competent Authority (CA) Status

Strategic Priorities:

- (i) Collaborate with market states, importing countries and development partners in responding to health standards, food safety, sanitary and phytosanitary requirements.
- (ii) Maintain good working relation with all relevant line agencies such as Customs, the National Agriculture Quarantine and Inspection Authority (NAQIA), Health and local inspection authorities so as to streamline jurisdictional responsibilities in support of PNG seafood exports.
- (iii) Build expertise and capacity in CA operational requirements through training and capacity building programs, using external support where available.

Strategic Action 4.2: Improve Trade and Marketing of Tradable PNG Seafood Exports

Strategic Priorities:

- (i) Support the review of PNG's Trade Policy including trade agreements to promote market access opportunities.
- (ii) Promote trade and investment opportunities taking advantage of negotiated trade preferences into the global market.
- (iii) Encourage market-driven product development and diversification of tradable products.

KRA 5: Support, Maintain and Encourage Genuine Foreign Direct Investment (FDI)

Conducive policy and regulatory environment must be maintained and improved to attract greater and genuine inflow of Foreign Direct Investment FDI to grow the sector.

Strategic Action 5.1: Encourage and Promote a Conducive Investment Environment

Strategic Priorities:

- (i) Encourage a whole of Government approach towards ensuring macro-structural policies of the National Government do not conflict with fisheries sector policy priorities.
- (ii) Ensure a level playing field for existing and new investments.
- (iii) Review and harmonise state policies and regulations to promote investor confidence and surety in the operating environment.

KRA 6: Optimise Papua New Guinean Participation and Local Content in the Fisheries Sector

Constitutional directive to enable citizens and the government to have control of the bulk of the economic enterprises and production.

Strategic Action 6.1: Encourage Improved and Meaningful Local Content

Strategic Priorities:

- (i) Encourage PNG companies, Provincial Governments, domestic investors, MSMEs and registered groups to enter into commercial arrangement or target specific investment opportunities in the fisheries sector.
- (ii) Strengthen and empower fisheries cooperatives, credit facilities, registered community-based groups and fisheries MSME.
- (iii) Promote gender-balanced opportunities through equity contribution, joint venture arrangements and private-public partnership, amongst others.

Strategic Action 6.2: Facilitate domestic rights-based fisheries management

Strategic Priorities:

- (i) Strengthening property rights of provincial-based fisheries.
- (ii) Devolution of appropriate powers to provinces.
- (iii) Empower and support commercial optimisation through extension support services.

Strategic Action 6.3: State to participate in commercial investment in the sector

Strategic Priorities:

- (i) Develop the enabling legislation and supporting instruments to establish the State investment vehicle.
- (ii) Develop the appropriate investment vehicle for the state to participate in the commercial fisheries space.
- (iii) Assess, identify and promote a commercially viable investment vehicle.

KRA 7: Improve Food Security and Livelihood Opportunities

Abundant fisheries resources of the country must be made accessible, readily available and affordable as major source of nutrition, food security and to support livelihood.

Strategic Action 7.1: Coastal, inland and aquaculture hub development to mobilise production and volume driven trade.

Strategic Priorities:

- (i) Encourage private sector driven mobilisation of production and volume so as to improve utilisation of established cold chain infrastructure and post-harvest facilities.
- (ii) Development of coastal fisheries hub and aquaculture nucleus estate business models.
- (iii) Promote use of endemic species for aquaculture and coastal fisheries development to mitigate potential biosecurity risks.

Strategic Action 7.2: Encourage better utilisation and trade of by-catch

Strategic Priorities:

- (i) Encourage by-catch utilisation for food security and livelihood support.
- (ii) Develop basic post-harvest infrastructure and facilities to maintain acceptable food safety standards.
- (iii) Encourage and promote the development of by-catch market opportunities.

Strategic Action 7.3: Improve distribution infrastructure and systems between production and consuming regions

Strategic Priorities:

- (i) Develop a distribution network for the trading of fish in the domestic markets.
- (ii) Encourage wholesale and retail distribution of fish to be developed concurrently with National Government to invest in distribution infrastructure.
- (iii) Support MSME participation through development of the fish retail sector.

KRA 8: Strengthen Research, Development, Extension Support Services, Training and Capacity Building

The sector must remain relevant, proactive and fully equipped through research, training and capacity building along with hands-on extension support services to improve service delivery.

Strategic Action 8.1: Enhance applied research capability and capacity

Strategic Priorities:

- (i) Develop a fisheries research plan to articulate the research priorities for the sector through the establishment of a dedicated research committee.
- (ii) Establish research partnerships with national and international research institutions and universities.
- (iii) Develop and promote sustainable funding and co-financing options in line with the priorities and requirements set out in the fisheries research plan.

Strategic Action 8.2: Strengthen Extension Support Services

Strategic Priorities:

- (i) Identify key extension support services and effective service delivery mechanisms.
- (ii) Strengthen and improve extension support services through cooperative arrangements.
- (iii) Encourage co-funding arrangements and resource mobilisation.

Strategic Action 8.3: Fisheries Training and Capacity Building Program

Strategic Priorities:

- (i) The Department of Higher Education, Research, Science and Technology (DHERST) and universities to address problem of professional deficit for the sector.
- (ii) Encourage a broad-based training and capacity building program based on robust training needs analysis.
- (iii) Empower and enhance specific skill-sets fit for purpose in service delivery.
- (iv) Maintain a pool of highly skilled and qualified workforce.

Strategic Action 8.4: Support Institutional strengthening of the National Fisheries College (NFC)

Strategic Priorities:

- (i) Support twinning arrangements between NFC and PNG Universities and international universities.
- (ii) Invest in post-graduate studies for PNG students in overseas universities for teaching at NFC.

KRA 9: Maintain and Strengthen Sustainable Fisheries Management and Healthy Ecosystems

Long term sustainable development of the sector and robust regulatory systems and procedures to ensure a well-managed fishery and healthy ecosystems.

Strategic Action 9.1: Maintain long term sustainable fisheries and marine resources

Strategic Priorities:

- (i) Encourage and strengthen fisheries management systems and processes.
- (ii) Introduce and implement marine environment and ecosystem protection programs.
- (iii) Develop assessment tools to quantify the status of stocks with respect to adopted reference points and acceptable levels of risks.

Strategic Action 9.2: Fisheries regulatory framework strengthened to accommodate emerging international and national requirements

Strategic Priorities:

- (i) Ensure management plans, licensing regime and MCS framework are harmonised and robust.
- (ii) Strengthen and improve monitoring capacity to collect, record and report on fisheries activities.
- (iii) Strengthen and improve cooperation with key stakeholders.

Strategic Action 9.3: Promote evidence-based advice, effective control and strong governance

Strategic Priorities:

- (i) Adopt an integrated MCS strategy that aligns to regional and international arrangements to combat IUU fishing.
- (ii) Maintain PNG's CA status by meeting food safety and traceability requirements.
- (iii) Enhance the overall MCS capability and capacity to increase regulatory compliance.

KRA 10: Build, Strengthen International Fisheries Cooperation and Engagements

Fisheries considerations contributes to evolving geopolitical landscape in the region that cannot be ignored in promoting national interests whilst subscribing to regional solidarity on areas of common interests.

Strategic Action 10.1: Engage strategically in international fisheries cooperation and engagements

Strategic Priorities:

- (i) Elevate PNG interests at sub-regional, regional and international fisheries fora through effective representation.
- (ii) Build strategic partnerships to promote sustainable, responsible management and optimum utilisation of fisheries resources in all areas of common interests.
- (iii) Leverage regional support and technical assistance to enhance responsiveness to emerging global issues and trends.

KRA 11: Encourage Evidence-Based Policy and Planning Approach

Evidence-based policy and planning requires best available data, information and knowledge to credibly inform the decision making process.

Strategic Action 11.1: Encourage systematic and structured approach to planning

Strategic Priorities:

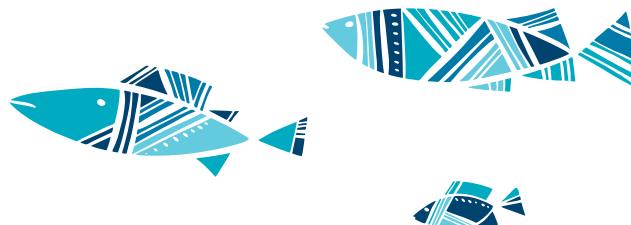
- (i) Encourage application of relevant analysis and assessments as fundamental prerequisites to inform the planning process.
- (ii) Encourage whole of Government approach to ensure fisheries economic data and statistics, its management and visibility for national planning and accounting is secured.
- (iii) Develop mechanisms to support a systematic and structured approach to inform robust fisheries policy and planning.

Financing and Implementation

Strategic Alignment

The FSP strategic outcomes contribute to the Medium-Term Development Plan (MTDP) III 2018–2022 inclusive sustainable economic growth priorities through the following Key Result Areas:

- KRA 1 – Increased Revenue and Wealth Creation
- KRA 2 – Quality Infrastructure
- KRA 5 – Improved Service Delivery
- KRA 6 – Improved Governance
- KRA 7 – Responsible Sustainable Development



The FSP sets out the direction for the development expenditure in the sector. The FSP vision, targets and objectives contribute to the MTDP targets, which in essence, is aligned to the Medium-Term Resource Framework.

The FSP Financing

Government Development Budget	Large capital projects, cross-cutting interventions and economic impact programs will require the National Government investment through the development budget and international concessional financing.
NFA revenue generated through the Fishing Access (VDS)	The VDS revenue is the key mechanism for financing the implementing of the FSP. VDS revenue shall be retained by NFA to finance a number of key strategic actions, which directly falls under the mandate of NFA, including large capital expenditures that will have the greatest impact in capitalising the fisheries sector.
Other – Development Partners	International project financing, official development assistance and technical development cooperation will be leveraged through strategic partnerships and collaboration utilising financing opportunities under blue financing, climate financing, and other relevant developmental funding streams.

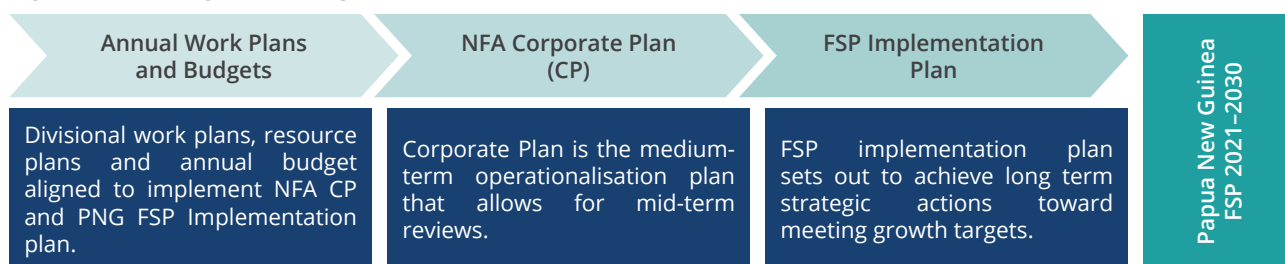
The funding necessary for delivering the FSP key result areas shall be defined within the FSP Resource framework of the Implementation Plan to the FSP.

Implementation

The implementation of the FSP shall be led by NFA in collaboration with all relevant Government Agencies and other relevant stakeholders.

The fisheries sector can realise the strategic priorities by 2030 when all key stakeholders and relevant agencies of the Government are working together, with an integrated approach to planning and collaborative execution of the Government Policy Directives for the sector. The implementation mechanism therefore provides the means for integrating fisheries plans at all stakeholder and levels of Government. The FSP will be implemented through the process illustrated below.

Figure 6: Strategic Plan Implementation Mechanism



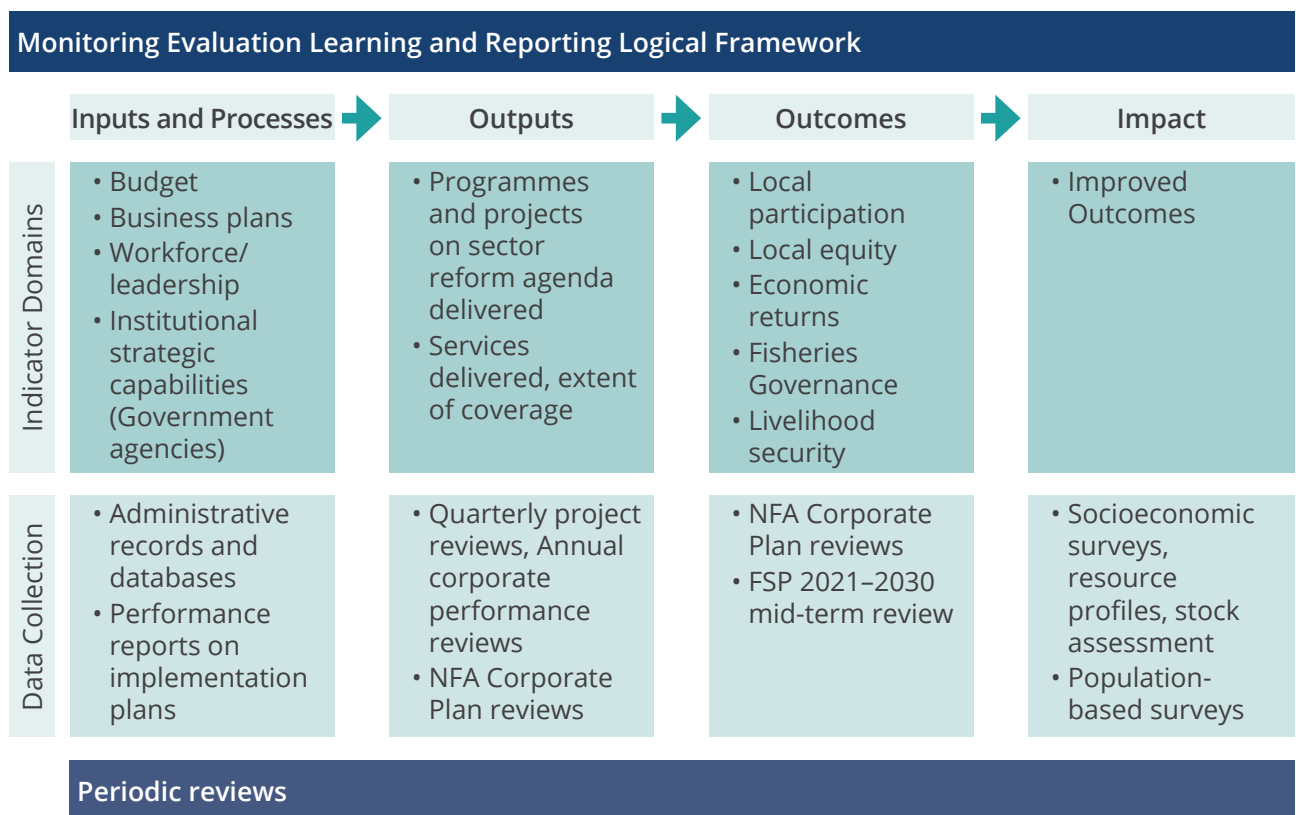
The following are the prerequisite key implementation mechanisms for the FSP 2021-2030:

FSP 2021-2030 Implementation Plan	The implementation plan developed, will include the resource framework. The implementation plan is based on the KRAs of the FSP.
NFA Corporate Plan	The corporate plan is a rolling 5-year planning instrument for the NFA that was prepared by the executive management team and approved by the National Fisheries Board. The NFA Corporate Plan 2021-2030 is aligned to the FSP and is the NFA's institutional re-alignment and work plan for delivering the FSP.
Annual Work Programs and Budget of NFA Business Units	The annual work plan and budget will provide a detailed annual plan of the NFA's contribution to the achievement of the FSP result areas. The annual work plan and budget provides the scope and cost of activities to be carried out by the NFA on an annual basis. The annual work plan and budget will be aligned with the corporate plan, business plans and the FSP 2021-2030. The individual annual work plans and budget forms the basis of NFA divisional work plans and budgets.

Monitoring Framework

The monitoring, evaluation, learning and reporting forms part of the FSP Implementation Plan. The ongoing monitoring and reporting on the Implementation Plan, the NFA Corporate Plan and annual work plans automatically satisfies the monitoring and evaluation requirements of the FSP using the logframe below as a guide.

Figure 7: Strategic Plan Performance Framework



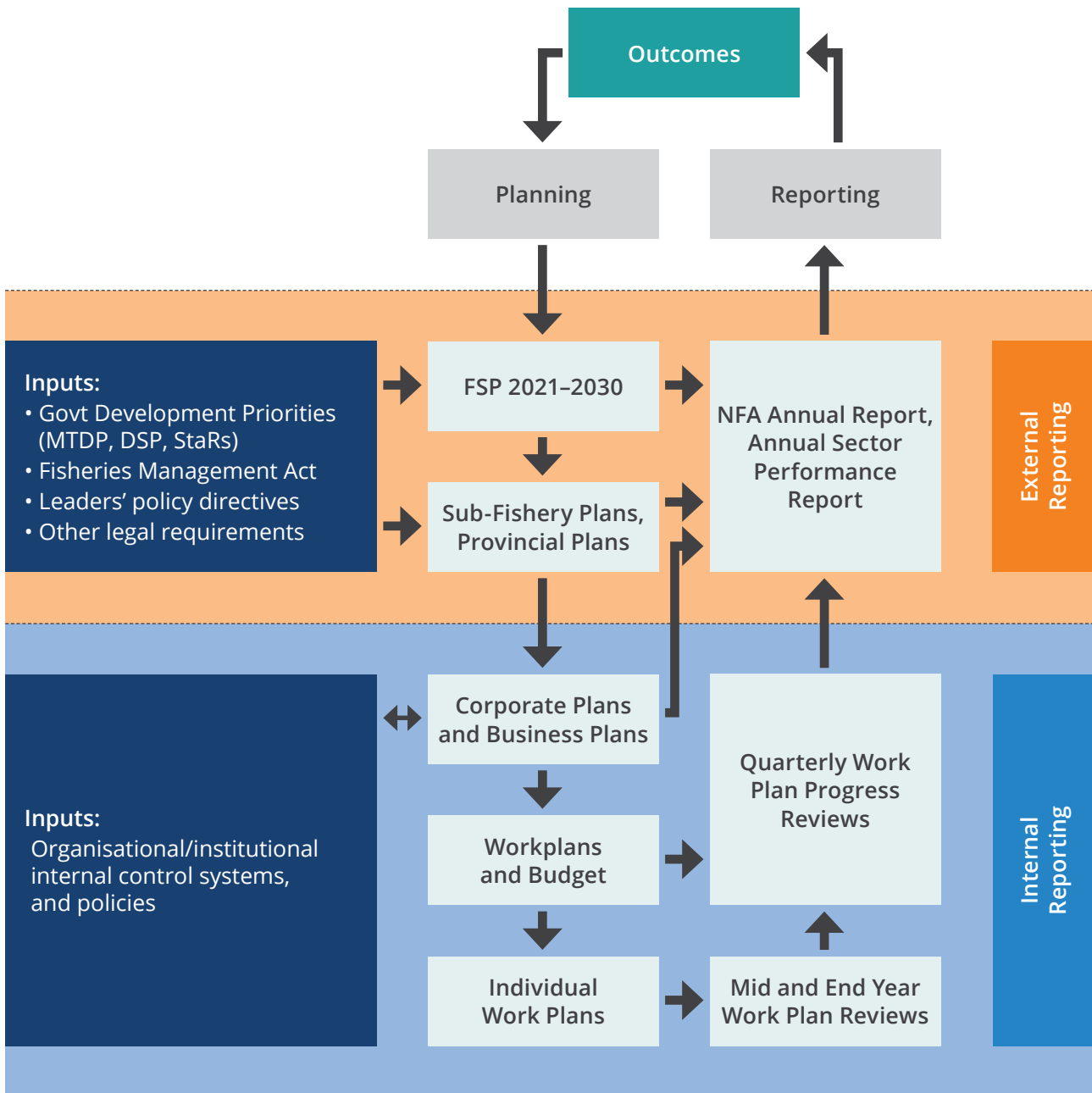
Monitoring and Review

The timeframe for the Fisheries Strategic Plan is 2021 to 2030. The Strategic Plan will be reviewed in the mid-term, subject to government policy directives and industry trends.

Planning and Reporting

The outcomes and progress of implementing the FSP is reported against the overarching government development plans, illustrated below:

Figure 8: Reporting Framework



Annex 1: Implementation Framework for the Fisheries Strategic Plan

KRA 1: DEVELOP ENABLING INFRASTRUCTURE AND IMPROVE INDUSTRY OPERATING ENVIRONMENT			
<i>Investment in dedicated fisheries development and transportation infrastructure such as wharves, ports, jetties slipways and onshore facilities and utilises to enhance competitiveness of the industry.</i>			
Strategic Actions	Target	Propose Activities/Directives	Indicators
Strategic Action 1.1: Development of dedicated Fisheries Development and Transportation Infrastructure	<ul style="list-style-type: none"> Dedicated fisheries infrastructure. 	<ul style="list-style-type: none"> Endorse and implement the Fisheries Infrastructure Development Plan. Promote development of fisheries hubs and aquaculture nucleus infrastructure at economically feasible locations. Strategic partnership with key stakeholders at all levels. 	<ul style="list-style-type: none"> Commercial scale tuna ports built and in operation. Coastal fisheries hub development projects completed and in operation. Commercial aquaculture nucleus estates completed and in operation.
Strategic Action 1.2: Secure funding and budgetary support to finance National Infrastructure Plan	<ul style="list-style-type: none"> Infrastructure trust fund. Budgetary allocation. Concessional and other financing options. 	<ul style="list-style-type: none"> Create a fisheries infrastructure development fund. Determine and establish a business model for long term sustainability of fisheries infrastructure assets. Improve fisheries collateral to secure concessional financing. Encourage and secure blue financing in partnership with domestic and international development partners. 	<ul style="list-style-type: none"> Trust fund established and utilised. Operational and management arrangement for infrastructure. Collateral funds for concessional financing established and utilised. Other financing options secured and utilised.
Strategic Action 1.3: Address operational and cost efficiencies of the industry	<ul style="list-style-type: none"> Provision of incentives. Efficient supply chain. Competitive utility rates and freight. 	<ul style="list-style-type: none"> Promote designated Fisheries Special Economic Zones (SEZ). Improve supply chain constraints to encourage volume and production output. Explore options to reduce cost of utilities in collaboration with relevant regulatory authorities. 	<ul style="list-style-type: none"> Exemptions from duties and charges. Increase in production volume. Reduction in cost of goods manufactured.
Strategic Action 1.4: Review and improve restrictive regulatory environment	<ul style="list-style-type: none"> Conducive regulatory environment. Sustainable fisheries sector. Profitable and equity industry. 	<ul style="list-style-type: none"> Encourage inter-agency cooperation to minimise conflicting policy objectives and address restrictive regulatory measures. Review existing fisheries management plans, legislations and domestication policies so as to create opportunities for growth. Encourage broad based incentives to support the capitalisation of the sector. 	<ul style="list-style-type: none"> Improved industry operational environment (profitability and efficiency gains). Stock sustainability. Increases in production output.



KRA 2: OPTIMISE GOVERNMENT REVENUE

Fisheries is recognised as a strategic asset that can generate sustainable economic benefits, create wealth and contribute to Government revenue.

Strategic Actions	Target	Propose Activities/Directives	Indicators
Strategic Action 2.1: Maximise Value of Participatory Rights (Access) under the Vessel Days Scheme (VDS)	<ul style="list-style-type: none"> • Maximise revenue. • Competitive VDS options. • VDS capitalisation. 	<ul style="list-style-type: none"> • Maintain and optimise value of PNG's Party Allowable Effort (PAE). • Effective VDS utilisation to support continued growth in the processing sector and revenue generation. • Consider VDS capitalisation options to further increase value of days. 	<ul style="list-style-type: none"> • Revenue generated from PAE. • Increased downstream and onshore processing. • Injection of Reserve funds into capital market.
Strategic Action 2.2: Consider and mitigate against factors influencing VDS revenue	<ul style="list-style-type: none"> • Adaptation, mitigation and resilience to climate change. 	<ul style="list-style-type: none"> • Collaborate with regional partners to monitor the potential impact of climate conditions and the consequential long-term impact on PNG's domestic tuna industry growth prospects and revenue projections. • Improve competitiveness of PNG VDS against competing elements that undermines the value of the PNA VDS. • Strongly position the country to take advantage of opportunities emanating from changing climate conditions into the future and competing elements that undermines the value of the PNA VDS. 	<ul style="list-style-type: none"> • Informed decision based on best available scientific information on climate change. • VDS uptake and utilisation by domestic and bilateral partners.
Strategic Action 2.3: Strengthen governing mechanisms for revenue optimisation	<ul style="list-style-type: none"> • Increase tax and duties as percentage of GDP. 	<ul style="list-style-type: none"> • Review concessions on taxes and duties to cease concessions which have expired. • Review state agreements to ensure compliant where appropriate continue helpful concessions. • Implement rebate report recommendations. 	<ul style="list-style-type: none"> • State Agreements are reviewed. • Rebate recommendations implemented.

KRA 3: INCREASE DOWNSTREAM PROCESSING, VALUE ADDING, EMPLOYMENT AND EXPORT EARNINGS

Promote value creation through expanding productive capacities, supply chain opportunities, product development and markets that increase broad economic benefits.

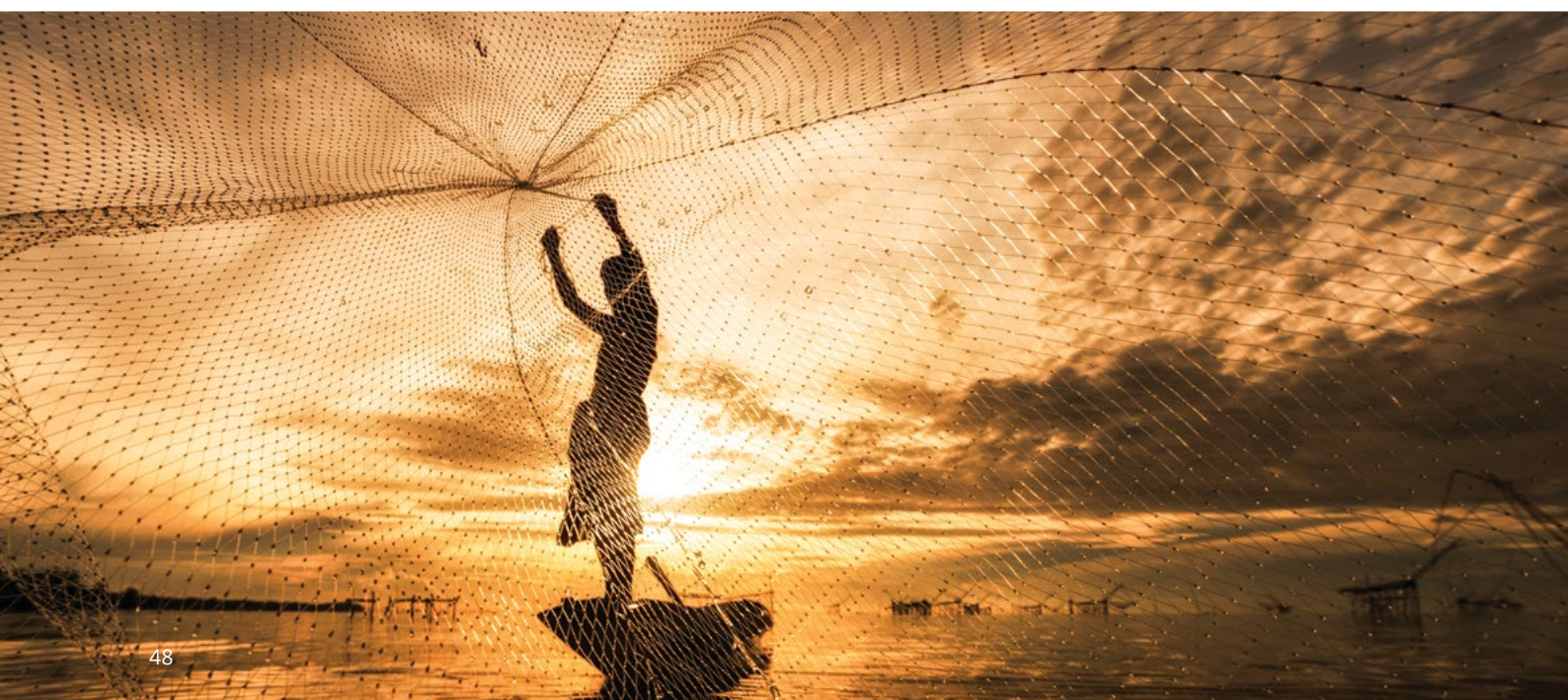
Strategic Actions	Target	Propose Activities/Directives	Indicators
Strategic Action 3.1: Develop a broad-based fisheries industry and sector	<ul style="list-style-type: none"> • Growth of fisheries support services sector. • Develop new commercial fisheries. • Increase capitalisation and market access for coastal, inland and aquaculture fisheries. 	<ul style="list-style-type: none"> • Support business models and strategies to add value to existing commercial fisheries and potential ancillary and support industry services. • Encourage and develop fisheries that have commercial potential by developing fisheries management plans to support their commercialisation. • Encourage capitalisation of coastal, inland and aquaculture from both domestic and genuine foreign direct investment that also offer trading planforms and established markets. 	<ul style="list-style-type: none"> • Increase in ancillary and support industry services. • Export of new fisheries products. • Gazettal of new fisheries management plans. • Increase capital expenditure in coastal, inland and aquaculture fisheries.

Strategic Action 3.2: Optimise socioeconomic returns from onshore processing	<ul style="list-style-type: none"> • Increased export earnings. • Direct employment. • Spin-off businesses. 	<ul style="list-style-type: none"> • Increase the production capacity of the existing processing plants to their full production capacity. • Develop the supply-side capabilities for tuna raw material from PNA parties in light of the ENSO effect. • Diversify the fishing industry to increase volume of fish and fishery exports. 	<ul style="list-style-type: none"> • Increased export earnings. • Increased direct jobs. • Increased direct spin-off business around the processing hubs locations.
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KRA 4: EXPAND AND ENHANCE INTERNATIONAL TRADE AND MARKET ACCESS

Take advantage of continued global demand for seafood by improving market access opportunities and proactive negotiation to secure beneficial trade agreements.

Strategic Actions	Target	Propose Activities/Directives	Indicators
Strategic Action 4.1: Maintain and strengthen PNG Competent Authority (CA) status	<ul style="list-style-type: none"> • Maintain market access into the EU. 	<ul style="list-style-type: none"> • Collaborate with market states, importing countries and development partners in responding to health standards, food safety, sanitary and phytosanitary requirements. • Maintain good working relation with all relevant Government line agencies such as Customs, NAQIA, Health and local inspection authorities so as to streamline jurisdictional responsibilities in support of PNG seafood exports. • Build expertise and capacity in CA operational requirements through training and capacity building programs, using external support where available. 	<ul style="list-style-type: none"> • Increase random audits and number of inspections. • Increase number of cooperative arrangements developed and executed. • Increase skilled workforce.
Strategic Action 4.2: Improve trade and marketing of tradable PNG fish exports	<ul style="list-style-type: none"> • Diversified market base. 	<ul style="list-style-type: none"> • Support the review of PNG’s Trade Policy, including trade agreements to promote market access opportunities. • Promote trade and investment opportunities taking advantage of negotiated trade preferences into the global market. • Encourage market driven product development, and diversification of tradable products. 	<ul style="list-style-type: none"> • New markets. • Volume and value of exports increased. • New export products.



KRA 5: SUPPORT, MAINTAIN AND ENCOURAGE GENUINE FOREIGN DIRECT INVESTMENT FLOWS

Conducive policy and regulatory environment must be maintained and improved to attract greater inflow of Foreign Direct Investment (FDI) to grow the sector.

Strategic Actions	Target	Propose Activities/Directives	Indicators
Strategic Action 5.1: Encourage and promote a conducive investment environment	<ul style="list-style-type: none"> • Transparent and predictable investment environment for FDI. 	<ul style="list-style-type: none"> • Encourage a whole of Government approach towards ensuring macro-structural policies of National Government do not conflict with fisheries sector policy priorities. • Ensure a level playing field for existing and new investments. • Review and harmonise state policies and regulations to promote investor confidence and surety in the operating environment. • Review and identify relevant incentive packages for various level of businesses. • Develop and implement investment awareness programs. 	<ul style="list-style-type: none"> • Business flow and efficiency gains. • Increased value on investment. • Increased investment opportunities.

KRA 6: OPTIMISE PAPUA NEW GUINEA PARTICIPATION AND LOCAL CONTENT IN THE FISHERIES SECTOR

Constitutional directive to enable citizens and governmental bodies to have control of the bulk of the economic enterprises and production.

Strategic Actions	Target	Propose Activities/Directives	Indicators
Strategic Action 6.1: Encourage improved and meaningful local content	<ul style="list-style-type: none"> • National participation in the fisheries sector. 	<ul style="list-style-type: none"> • Encourage PNG companies, Provincial Governments, domestic investors, fisheries SMEs and registered groups to enter into commercial arrangement or target specific investment opportunities in the fisheries sector. • Strengthen and empower fisheries cooperatives, credit facilities, registered community-based groups, and fisheries MSMEs. • Promote gender balanced opportunities through equity contribution, joint venture arrangements and private-public partnership, amongst others. 	<ul style="list-style-type: none"> • Increase participation of nationals in the sector. • Increase registered fisheries groups. • Equal opportunities for men, women and minority groups.
Strategic Action 6.2: Facilitate domestic rights-based fisheries management	<ul style="list-style-type: none"> • Commercialisation of property rights. 	<ul style="list-style-type: none"> • Strengthening property rights of provincial based fisheries and marine resource sector. • Devolution of appropriate powers to provinces as provided for under Law. • Empower and support commercial optimisation through extension support services. 	<ul style="list-style-type: none"> • Registry of property rights. • Co-management arrangement of fisheries resources. • Exercise of property rights.
Strategic Action 6.3: State to participate in commercial investment in the sector	<ul style="list-style-type: none"> • State participation. 	<ul style="list-style-type: none"> • Develop the enabling legislation and supporting instruments to establish the state investment vehicle. • Develop the appropriate investment vehicle for the state to participate in the commercial fisheries space. • Assess, identify and promote a commercially viable investment vehicle. • Implement localisation for management and specialised positions. 	<ul style="list-style-type: none"> • State equity and investment in the sector. • Increase shareholder value. • Increase return on investment to the State.

KRA 7: IMPROVE FOOD SECURITY AND LIVELIHOOD OPPORTUNITIES

Abundant fisheries resources of the country must be made accessible, readily available and affordable as major source of nutrition, food security and to support livelihood.

Strategic Actions	Target	Propose Activities/Directives	Indicators
Strategic Action 7.1: Coastal, inland and aquaculture hub development to mobilise production and trade	<ul style="list-style-type: none"> • Growth in coastal, inland and aquaculture fisheries. 	<ul style="list-style-type: none"> • Improve cold chain infrastructure and post-harvest facilities. • Development of coastal fisheries hub and aquaculture nucleus estate business models. • Promote use of endemic species for aquaculture and coastal fisheries development to mitigate potential biosecurity risks. 	<ul style="list-style-type: none"> • Product quality and reduce post-harvest loss. • Increase in number of supporting facilities and livelihood opportunities. • Increase production of endemic species.
Strategic Action 7.2: Encourage better utilisation and trade of by-catch	<ul style="list-style-type: none"> • By-catch market established. 	<ul style="list-style-type: none"> • Encourage by-catch utilisation for food security and livelihood support. • Develop basic post-harvest infrastructure and facilities to maintain acceptable food safety standards. • Encourage and promote the development of by-catch market opportunities. 	<ul style="list-style-type: none"> • Increase trading of by-catch and discards. • Increase consumption of by-catch and discards as affordable protein source. • By-catch trade survey.
Strategic Action 7.3: Improve distribution infrastructure and systems between production and consuming regions	<ul style="list-style-type: none"> • Reliable supply chain distribution network. 	<ul style="list-style-type: none"> • Develop a distribution network for the trading of fish in the domestic markets. • Encourage wholesale and retail distribution of fish to be developed concurrently with Government to invest in distribution infrastructure. • Support SME participation through development of the fish retail sector. 	<ul style="list-style-type: none"> • Increase distribution and holding facilities. • Increase consumption per capita. • Increase retail business opportunities. • Increase women and minority group participation.

KRA 8: STRENGTHEN RESEARCH, DEVELOPMENT, EXTENSION SUPPORT SERVICES, TRAINING AND CAPACITY BUILDING

The sector must remain relevant, proactive and fully equipped through research, training and capacity building along with hands-on extension support services to improve service delivery.

Strategic Actions	Target	Propose Activities/Directives	Indicators
Strategic Action 8.1: Enhance applied research capability and capacity	<ul style="list-style-type: none"> • Institutionalising applied science in fisheries research. 	<ul style="list-style-type: none"> • Develop a fisheries research plan to articulate the research priorities for the sector through the establishment of a dedicated research committee. • Establish research partnerships with national and international research institutions and universities. • Develop and promote sustainable funding and co-financing options in line with the priorities and requirements set out in the fisheries research plan. 	<ul style="list-style-type: none"> • Species of commercial significant cultured and distributed. • Research plan completed and adopted. • Research becomes core function of NFA.

Strategic Action 8.2: Strengthen extension support services	<ul style="list-style-type: none"> • Effective extension support services. 	<ul style="list-style-type: none"> • Identify key extension support services and effective service delivery mechanisms. • Strengthen and improve extension support services through cooperative arrangements. • Encourage co-funding arrangements and resource mobilisation. 	<ul style="list-style-type: none"> • Institutionalise extension support functions. • Improve importance of fisheries in planning, human resource and budget process in the provinces.
Strategic Action 8.3: Fisheries training and capacity building program	<ul style="list-style-type: none"> • Qualified and skilled workforce. 	<ul style="list-style-type: none"> • Department of Higher Education, Research, Science and Technology and universities to address problem of professional deficit for the sector. • Encourage a broad-based training and capacity building program based on robust training needs analysis. • Empower and enhance specific skill-sets fit for purpose in service delivery. • Maintain a pool of highly skilled and qualified workforce. 	<ul style="list-style-type: none"> • Training and capacity building plan completed and adopted. • Accreditation to national and international training and academic requirements met.
Strategic Action 8.4: Support Institutional strengthening of the National Fisheries College (NFC)	<ul style="list-style-type: none"> • Establish Centre of excellence in training and research. 	<ul style="list-style-type: none"> • Support twinning arrangements for PNG and international universities. • Invest in post-graduate studies for PNG students in overseas universities. 	<ul style="list-style-type: none"> • Workforce needs of the industry and sector continuously maintained. • Training, research and academic output meets international best practice and benchmarks. • NFC achieves relevant accreditation requirements.

KRA 9: MAINTAIN AND STRENGTHEN SUSTAINABLE FISHERIES MANAGEMENT AND HEALTHY ECOSYSTEMS

Long term sustainable development of the sector and robust regulatory systems and procedures to ensure a well-managed fishery and healthy ecosystems.

Strategic Actions	Target	Propose Activities/Directives	Indicators
Strategic Action 9.1: Maintain long term sustainable fisheries and marine resources.	<ul style="list-style-type: none"> • Sustainable fisheries and viable ecosystems. 	<ul style="list-style-type: none"> • Strengthen fisheries management systems and processes. • Introduce and implement marine environment and ecosystem protection programs. • Develop assessment tools to quantify the status of stocks with respect to adopted reference points and acceptable levels of risks. 	<ul style="list-style-type: none"> • Adoption of harvest control rules. • Status of stock through stock assessments.

Mud crab Farmers in Bereina, Central Province



<p>Strategic Action 9.2: Fisheries regulatory framework strengthened to accommodate emerging international and national requirements</p>	<ul style="list-style-type: none"> • Effective, robust and conducive regulatory environment. 	<ul style="list-style-type: none"> • Ensure management plans, licensing regime and MCS framework are harmonised and robust. • Strengthen and improve monitoring capacity to collect, record and report on fisheries activities. • Strengthen and improve cooperation with key stakeholders. 	<ul style="list-style-type: none"> • All management plans and policies (SOP) reviewed and updated. • Data collection strengthened with key stakeholders. • All data synchronised, stored and periodically reported.
<p>Strategic Action 9.3: Strengthen Control and Governance</p>	<ul style="list-style-type: none"> • Effective MCS strategy and implementation. 	<ul style="list-style-type: none"> • Adopt an integrated MCS strategy that aligns to regional and international arrangements to combat IUU fishing. • Maintain the Competent Authority status by meeting food safety and traceability requirements. • Enhance the overall MCS capability and capacity to increase regulatory compliance. 	<ul style="list-style-type: none"> • Less number of infringements. • Increase compliance rating. • Consistently meeting EU market access requirements.

KRA 10: BUILD, STRENGTHEN INTERNATIONAL FISHERIES COOPERATION AND ENGAGEMENT

Fisheries considerations contributes to evolving geopolitical landscape in the region that cannot be ignored in promoting national interests whilst subscribing to regional solidarity on areas of common interests.

Strategic Actions	Target	Propose Activities/Directives	Indicators
<p>Strategic Action 10.1: Engage strategically in international fisheries cooperation and engagements</p>	<ul style="list-style-type: none"> • Domestic development aspirations of PNG maintained and enhanced. 	<ul style="list-style-type: none"> • Elevate PNG interests at sub-regional, regional and international fisheries fora through effective representation. • Build strategic partnerships to promote sustainable, responsible management and optimum utilisation of fisheries resources in all areas of common interests. • Leverage regional support and technical assistance to enhance responsiveness to emerging global issues and trends. 	<ul style="list-style-type: none"> • Effective representation. • Strategic partnerships forged and leveraged at all levels.



KRA 11: ENCOURAGE EVIDENCE-BASED POLICY AND PLANNING APPROACH AND INSTITUTIONAL STRENGTHENING

Evidence-based policy and planning requires best available data, information and knowledge to credibly inform decision making process.

Strategic Actions	Target	Propose Activities/Directives	Indicators
Strategic Action 11.1: Encourage systematic and structured approach to planning	<ul style="list-style-type: none"> Evidence-based decision making. 	<ul style="list-style-type: none"> Encourage application of relevant analysis and assessments as fundamental prerequisites to inform the planning process. Encourage whole of government approach to ensure fisheries economic data and statistics, its management and visibility for national planning and accounting is secured. Develop mechanisms to support a systematic and structured approach to inform robust fisheries policy and planning. 	<ul style="list-style-type: none"> Ensure sector policies are evidence-based. Responsiveness of sector policies to government directives. Alignment to overarching government policy priorities.
Strategic Action 11.2: Fisheries institutional strengthening	<ul style="list-style-type: none"> NFA priorities aligned and strengthened to implement the Strategic Plan 	<ul style="list-style-type: none"> Implement the NFA Corporate Plan 2021–2030. 	<ul style="list-style-type: none"> Aligned NFA Corporate Plan.



South Sea Tuna Processing Plant, Wewak, East Sepik Province



Annex 2: Fisheries Sector Growth Forecasts

Background

Empirical validation of the baseline information was undertaken to set and test the reasonableness of the 10 Year Targets in the Strategic Plan.

Growth Scenario

- Base Case: 10 onshore tuna processing plants by 2030 (6 existing plus 4 new)
- Optimistic: 20 onshore tuna processing plants by 2030 (6 existing plus 14 new)

Key Interventions Required

- Increase market access to be able to sell increased volume of tuna processed
- Invest in key infrastructures to reduce input costs and create efficiencies
- Pursue sovereign agreements with tuna supplying countries

Table 1: GDP Contributions				
Component	Baseline 2019	10 Year Target <i>Base Case</i>	10 Year Target <i>Optimistic Case</i>	Growth
Tuna market value	K1.58b	K6.72b	K13.44b	Base: 325% Optimistic: 751%
Non-tuna market value	K0.02b	K0.04b	K0.05b	Base: 100% Optimistic: 150%
Total*	K1.60b	K6.76b	K13.49b	Base: 322% Optimistic: 743%

*GDP contributions from spin-off activities are not included.

Key Assumptions

- Tuna processing plants will be operating at 90% of production capacity
- Sustainability certification
- Increased local non-tuna fish trade
- Long term global inflation as per International Monetary Fund
- Tax incentives continue to maintain current operators and attract new foreign direct investment

Table 2: Exports Value				
Component	Baseline 2019	10 Year Target <i>Base Case</i>	10 Year Target <i>Optimistic Case</i>	Growth in 10 Years
Tuna	K1.38b	K5.84b	K11.69b	Base: 323% Optimistic: 747%
Non-tuna	K0.02b	K0.04b	K0.05b	Base: 100% Optimistic: 150%
Total	K1.40b	K5.88b	K11.74b	Base: 320% Optimistic: 739%

Key Assumptions

- 85-90% of onshore tuna processed is exported
- Market and product diversification
- Capitalisation of underdeveloped non-tuna sector

Table 3: Taxes				
Indicator	Baseline 2019	10 Year Target <i>Base Case</i>	10 Year Target <i>Optimistic Case</i>	Growth
Company Income Tax	K15.7m	K66.2m	K132.2m	
Goods and Services Tax	K18.7m	K78.8m	K157.4m	
Salaries and Wages	K8.8m	K37.2m	K74.3m	
Withholding Taxes	K2.3m	K9.7m	K19.4m	
Total	K45.6m	K192.1m	K383.4m	Base: 321% Optimistic: 742%
Tax Revenue as % of GDP	2.8%	2.8%	2.8%	

Key Assumptions

- No change in tax regime for the fisheries sector
- Local input purchases are proportionately consistent with current levels

Table 4: Customs Duties				
Component	Baseline 2019	10 Year Target <i>Base Case</i>	10 Year Target <i>Optimistic Case</i>	Growth
Export Duty	K nil	K nil	K nil	
Import Duty	K1.9m	K8.3m	K16.6m	
GST on Import Duty	K11.1m	K46.7m	K93.2m	
Total	K13.0m	K55.0m	K109.8m	Base: 323% Optimistic: 745%
Duties Revenue as % of GDP	0.8%	0.8%	0.8%	

Key Assumptions

- No change in customs duties regime for the fisheries sector
- Input import purchases are proportionately consistent with current levels

Table 5: Direct Revenue				
Component	Baseline 2019	10 Year Target <i>Base Case</i>	10 Year Target <i>Optimistic Case</i>	Growth
VDS Revenue	K372.5m	K576.3m	K576.3m	
Less: Rebate	K143.0m	K nil	K nil	
Net VDS Revenue	K229.5m	K576.3m	K576.3m	Base: 151% Optimistic: 151%
Non-VDS Revenue	K57.5m	K95.8m	K191.6m	Base: 66% Optimistic: 233%
Total	K287.0m	K672.2m	K768.1m	Base: 134% Optimistic: 168%

Key Assumptions

- Annual tuna stock depletion rate of 1%
- Average sale of 75% of Vessel Days over the next 10 years
- Adaptation and mitigation of climate change impacts

Table 6: Catch Volume (metric tonne)

Component	Baseline 2019	10 Year Target Base Case	10 Year Target Optimistic Case	Growth
PNG	333,919	374,183	374,183	12%
WCPO Pacific	2,547,290	2,880,324	2,880,324	13%
Total WCPO Pacific	2,878,209	3,254,507	3,254,507	13%

Key Assumptions

- Depletion rate of 1% over the next 10%
- Staying with acceptable level of risks in-line with the Harvest Strategy
- Climate variations

Table 7: Production (metric tonne)

Component	Baseline 2019	10 Year Target Base Case	10 Year Target Optimistic Case	Growth
Tuna	107,000	321,750	643,500	Base: 201% Optimistic: 501%
Non-tuna	4,595	7,485	9,470	Base: 63% Optimistic: 107%
Total	111,845	329,234	652,970	Base: 194% Optimistic: 484%

Key Assumptions

- Tuna processing plants will be operating at 90% of production capacity
- Sustainability certification
- Increased local non-tuna fish trade
- Tax incentives continue to maintain current operators and attract new foreign direct investment
- Sourcing 10% of WCPO catches for base case and 20% for optimistic case scenario

Crew of Tuna Fishing Vessel prepare their catch for offload, Madang



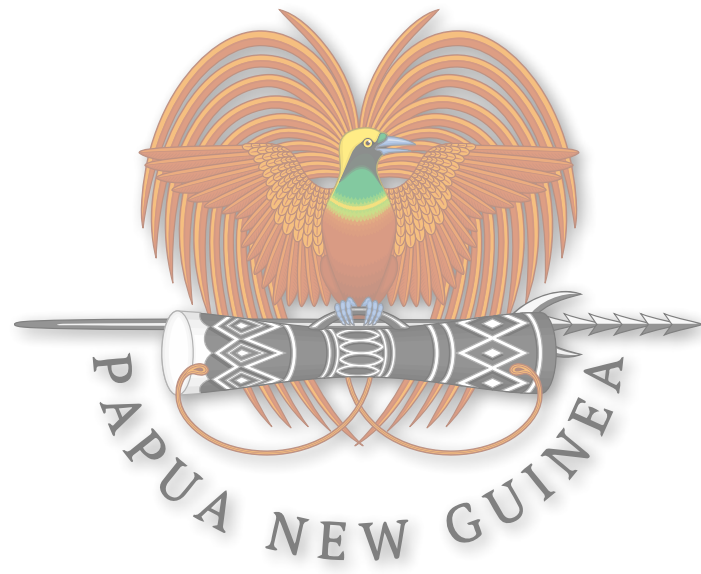
Table 8: Employment (Tuna Processing and Fishing)				
Component	Baseline 2019	10 Year Target Base Case	10 Year Target Optimistic Case	Growth
National	10,196	31,802	63,604	Base: 212% Optimistic: 524%
Expatriate	1,809	4,213	8,426	Base: 133% Optimistic: 366%
Total	12,005	36,015	72,030	Base: 300% Optimistic: 600%
Localisation %	84.9%	88.3%	88.3%	

Key Assumptions

- Increased number of onshore process plants and increased production will drive increased employment in both tuna processing and fishing sectors
- Annual localisation of management and specialised skilled jobs at 2.5%

The recently redeveloped Alotau Town Market. Part of the Coastal Fisheries Development Programme introduced by NFA, in collaborative partnership with The Government of Japan through JICA - Japan International Cooperation Agency







PAPUA NEW GUINEA
NATIONAL FISHERIES
AUTHORITY



For further information about our activities, functions
and services, please scan the QR code above or contact us at:

NATIONAL FISHERIES AUTHORITY
11th Floor, Kina Bank House, Douglas Street, Downtown Port Moresby
P.O. Box 2016, PORT MORESBY, NCD, 121
Papua New Guinea
Tel: (675) 309 0444 Fax: (675) 320 2061
Email: nfa@fisheries.gov.pg Website: www.fisheries.gov.pg

