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Pacific Islands Fisheries Sector Engagement Strategy

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ABBREVIATIONS AND ACRONYMS

ACP	Africa, Caribbean and Pacific States (signatory to the EU/ ACP Lomé and Cotonou Conventions)
AusAID	Australian Agency for International Development
ABNJ	Areas beyond national jurisdiction
ADB	Asian Development Bank
BDM	Beche-de-mer (food product made from dried sea cucumbers)
CAS	Country Assistance Strategy
CBD	Convention on Biological Diversity
CBO	Community-based organisation
CC	Climate change
CCRF	FAO Code of Conduct for Responsible Fisheries
CFP	Coastal Fisheries Program (of the SPC)
CGIAR	Consultative Group on International Agricultural Research
CI	Conservation International
CRISP	Coral Reef Initiatives for the Pacific
CROP	Council of Regional Organisations of the Pacific
CPIA	Country policy and institutional assessment (World Bank/ ADB governance scoring system)
DEVFISH/ DEVFISH2	Development of Sustainable Tuna Fisheries in Pacific ACP Countries – Phases 1 and 2 (EU-funded projects implemented by SPC and FFA)
DGF	Development Grants Facility
DWFN	Distant water fishing nation
EAF	Ecosystem approach to fisheries
EBM	Ecosystem-based management
EPO	Eastern Pacific Ocean
EU	European Union
FAD	Fish aggregation device
FAME	Fisheries, Aquaculture and Marine Ecosystems (division of SPC)
FAO	Food and Agriculture Organisation (of the United Nations)
FES	Fisheries Engagement Strategy
FCAS	Fragile and conflict-affected states
FFA	Pacific Islands Forum Fisheries Agency
FFV	Foreign fishing vessel
FIA	Fishing Industry Association
FMP	Fishery Management Plan
FOC	Flag of convenience
ForSec	Pacific Islands Forum Secretariat
FSM	Federated States of Micronesia
FSP	Full-Size Project (of the Global Environment Facility)
GDP	Gross domestic product
GEF	Global Environment Facility
HIES	Household income and expenditure survey
IDA	International Development Association
IFC	International Finance Corporation
ILO	International Labor Organisation
ISU	Implementation Support Unit (of the RFEP)
IUU	Illegal, unregulated and unreported (fishing)
LLG	Local-Level Government

LME	Large Marine Ecosystem
LMMA	Locally Managed Marine Area
MCS	Monitoring, control and surveillance
MDG	Millennium Development Goals
MPA	Marine Protected Area
MSC	Marine Stewardship Council
MSG-FTAC	Melanesian Spearhead Group – Fisheries Technical Advisory Committee
MSWG	Marine Sector Working Group (of CROP)
NFEP	National Fisheries Enhancement Project (s) (proposed for implementation in selected World Bank Pacific Island member countries)
NGO	Non-government organisation
NZAP	New Zealand Aid Program (formerly NZAID)
ODA	Overseas development assistance
OFMP	Oceanic Fisheries Management Project (GEF-funded project implemented by FFA and SPC)
OFP	Oceanic Fisheries Program (of the SPC)
PAE	Party Allowable Effort (within the PNA Vessel-Day Scheme)
PI/ PIC	Pacific Island/ Pacific Island country
PIDP	Pacific Islands Development Program
PIF/ PIFS	Pacific Islands Forum/ Pacific Islands Forum Secretariat
PIPA	Phoenix Island Protected Area
PIROP/ PIROFISA	Pacific Islands Regional Ocean Policy/ Framework for Integrated Strategic Action
PITIA	Pacific Islands Fishing Industry Association
PNA/ PNAO	Parties to the Nauru Agreement/ PNA Office
PNG	Papua New Guinea
PPAC	Pacific Plan Action Committee
PPG	Project Preparation Grant (of the Global Environment Facility)
PROFISH	World Bank Global Program on Fisheries
PSC	Project/ Program Steering Committee
REI	Regional Economic Integration (in Fisheries) (FFA program. division)
RFEP	Regional Fisheries Enhancement Program (proposed for implementation by the World Bank)
RFMO	Regional Fisheries Management Organisation
SCICOFISH	Scientific Support for the Management of Coastal and Oceanic Fisheries of the Pacific Islands Region (EU-funded project implemented by SPC)
SCIFISH	Scientific Support for the Oceanic Fisheries Management in the Western and Central Pacific Ocean (EU-funded project implemented by SPC)
SIDS	Small Island Developing States
SOPAC	South Pacific Bureau for Applied GeoScience (now a division of SPC)
SPBEA	South Pacific Board for Educational Assessment (now a division of SPC)
SPC	Secretariat of the Pacific Community
SPS	Sanitary and phytosanitary (usually pertaining to systems of food safety control)
SPREP	Secretariat of the Pacific Regional Environment Program
SPTO	South Pacific Tourism Office
TAE	Total Allowable Effort (within the PNA Vessel-Day Scheme)
TVM	Te Vaka Moana (fisheries cooperation arrangement between certain Polynesian states)
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNGA	United Nations General Assembly
UNICPOLOS	United Nations Informal Consultation Process on Oceans and the Law of the Sea

USA	United States of America
USP	University of the South Pacific
VDS	Vessel-Day Scheme (for purse-seine fishery management by the PNA)
WB/ WBG	World Bank/ World Bank Group
WCPFC	Western Central Pacific Fisheries Commission
WCPO	Western Central Pacific Ocean
WorldFish	World Fisheries Centre
WSSD	World Summit on Sustainable Development
WWF	World Wide Fund for Nature

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PACIFIC ISLANDS
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Executive Summary

Overview

1.1 The World Bank's 11 Pacific Island member countries are a diverse group in terms of economic and social conditions. Five are least developed countries, with annual per capita GDP as low as US$ 700, while in some of the territories average incomes are comparable to those in wealthy industrialized countries. Population densities and growth rates, land areas and the level of urbanization all display similarly wide ranges. There is a great diversity of cultures and languages.

1.2 What they have in common is that all are islands surrounded by the Pacific Ocean, with jurisdiction over areas that are many times (in some cases thousands of times) their land area. All derive significant economic and social benefits from their marine resources, with many coastal communities depending on them for their livelihoods. Several have large and important freshwater fisheries. All identify their living aquatic resources (for fisheries, aquaculture and non-extractive uses mainly related to tourism) as a major opportunity for economic growth and development. In some cases, they represent one of the only opportunities.

1.3 Fishing (not including processing and support industries) is estimated to contribute at least US$ 550 million the economies of Pacific Island countries annually. Coastal fishing (subsistence and commercial) accounts for half of this total, with locally based off shore fisheries making the next largest contribution. Fisheries access fees are a source of government finance in all Pacific Island countries, providing more than 10 per cent of revenue in four of them.

1.4 Reviews of the importance of fish as a source of food for Pacific Island populations have found that annual per capita consumption of fishery products in all cases exceeds the global average of 16.5 kg. In several small island countries, where opportunities to produce other food are very limited, fish consumption is among the highest in the world. Fishing also plays an important cultural role for men and women in many of the region's coastal communities.

2. Global context

2.1 From a global perspective, there has been little good news about fisheries resources over the last 25 years. Official estimates of the percentage of fish stocks that are not fully exploited or over-exploited fell from 40 per cent to 20 per cent, and a number of major fisheries have collapsed. Total world fisheries production stopped growing in the mid 1980s, and shows a substantial decline when unreliable data are excluded. Global fishing capacity (the power of the fishing fleets to catch fish) is estimated to be at two to three times the level required to yield a sustainable catch, and continues to grow in some major fishing nations.

2.2 On a more positive note, the world's aquaculture production has doubled in the last decade, although this has not been without environmental cost. Loss of coastal habitat, degradation of fish farm sites, dependence on capture fisheries for feed, and the introduction of exotic species and diseases have provided some lessons to guide future development. Trade in fisheries products, particularly from developing countries to the developed world, has also grown dramatically.

2.3 The Pacific Islands region reflects these trends to some extent. The value of fisheries exports from the region almost doubled in the period 1999–2007. In about half of the Pacific Island countries fishery exports represented over 50 per cent of the value of all exports; where they represent less than this proportion, they are mostly quite large in nominal terms. Overall, aquaculture production has increased, with some promising developments in the last five years, but remains a small contributor to the economies of most Pacific Island countries. Pearl and prawn culture account for most of the production value, and have been developed mainly in the French territories.

2.4 Production from the western and central Pacific tuna fishery has grown rapidly since the mid-1990s, reaching a record catch of almost 2.5 million tonnes in 2009 and 2010. About half of this comes from the waters of Pacific Island countries. The increase has been driven by expansion of the distant water purse-seine fishery, with some growth in the catches by national fleets and onshore processing in the region. In contrast, domestic tuna longline fisheries, which developed in many PIC during the 1990s, have faced difficult economic conditions in recent years and production has fallen.

2.5 Production from coastal fisheries, particularly subsistence fisheries, has never been well quantified across the region. It seems clear, however, that the value of some export fisheries such as beche-de-mer has fallen, as high-value species have been widely overfished and several national fisheries have been closed.

2.6 The region's living marine resources have global significance. Almost a third of the world catch of tuna now comes from the waters of Bank member Pacific Island countries. Half of the world's hard coral reefs lie within the region, including some of the most extensive systems. The west of the region forms part of the coral triangle, the global centre of tropical marine biodiversity. There are thus important reasons for the wider global community to share the concerns that Pacific Islanders have for their marine resources.

3. **Regional initiatives**

3.1 The threats to the region's oceanic and coastal fisheries have been well studied and are recognized by the highest level of Pacific Island leadership. A number of regional initiatives have been taken to address these, including the development of a Pacific Islands Regional Ocean Policy, repeated modifications to the Pacific Plan to provide increased reference and guidance on fisheries, and the recent formulation of a 'Pacific Oceanscape' to coordinate ocean-related initiatives and promote resource conservation, including on the high seas.

3.2 At the sub-regional level, the 8 countries that are Parties to the Nauru Agreement have recently established their own office as a means of furthering their common interests in regard to management of the tuna purse-seine fishery concentrated in their waters. These countries have already successfully used their powers of collective bargaining to extract greater concessions from distant water fishing nations operating in the region, and to impose on them more stringent conditions for fishery access. The recently-established Te Vaka Moana Agreement between several Polynesian countries has similar ambitions in regard to the southern longline tuna fishery in their waters. The Melanesian Spearhead Group has established a Fisheries Technical Advisory Committee to identify opportunities for sub-regional collaboration in fisheries among Melanesian countries. Coupled with the long-standing cooperative efforts implemented through the Secretariat of the Pacific Community

and the Forum Fisheries Agency, the countries of the region have a number of powerful tools at their disposal to address common problems in the fisheries arena. The Bank can add considerable value to this process through the application of its particular set of skills and resources.

4. **Bank strategy**

4.1 A Fisheries Engagement Strategy for the Bank is proposed, which identifies a niche role that takes advantage of the Bank's particular strengths in regard to knowledge-based activities, policy development, economic analysis, inter-sectoral cross-cutting activities, and the ability to mobilize experience from other countries or regions. The Strategy also recognizes and maintains consistency with a number of overarching regional strategic or policy statements agreed by PIC and their development partners, to ensure that initiatives by the Bank take place within this framework and do not seek to 'reinvent the wheel'. The purpose of the Strategy is to assist the Bank, potentially in conjunction with other development partners, to support its PI member countries in their efforts to:

- optimize sustainable economic benefits from PI fishery resources through economic analysis, improved fishery management, domestic industry development and promotion of investment in the sector; and

- conserve PI fishery resources and environments and ensure that these continue to make a sustainable contribution to national and local food security, livelihoods, and mitigation of climate change impacts, for present and future generations.

4.2 The Strategy is expected to provide guidance to the Bank over a 5-year period, from 2011 to 2016. Key thematic areas to be addressed include:

- supporting the efforts of the Parties to the Nauru Agreement to leverage increased economic benefits from the purse-seine tuna fishery through collective bargaining with DWFN on terms and conditions of access. The Bank has already provided initial support to the PNA Office and this will continue in the future. Further development of the tuna fishery will rely on increasing the economic benefits from existing (or possibly diminished) catches, not on increasing production. For this reason, the FES will also support the further refinement and implementation of the Vessel-Day Scheme for purse-seine fishery management (and, eventually, its' possible extension to the longline fishery). Depending on the wishes of the Bank's PI member countries, Bank support may extend to applying Bank financial resources to the capitalization of a PNA Stabilization Fund or similar instrument, with the primary purpose of funding a centralized VDS trading system to be operated by the PNAO;

- business planning advisory support to the PNAO will also be continued, to build on and provide follow-up to the activities already commenced;

- enhancement of regional fishery information systems to improve the recording, transmission and processing of oceanic fishery data and take advantage of the efficiencies and cost reductions offered by information technology. The Bank will work with national and regional fisheries agencies to assess the economic and management benefits of an improved oceanic fisheries information system and ways in which Bank financial resources could be applied to support it;

- developing national fishery management support projects in each Bank PI member countries that wishes to use Bank resources for this purpose. Central themes of national programs are likely to revolve around:
    - Restoration of beche-de-mer fisheries;
    - Support to the development of appropriate, practical ecosystem-based fishery management arrangements;
    - Improvement of national fishery information and statistical systems (biological and economic), building where possible on the Bank's work on developing fishery 'dashboards' in other regions;
    - mitigating the impacts of climate change on fisheries and coastal resources.
    - Additional activities can be added to (or taken away from) the national project 'core package' in line with the specific priorities and circumstances of each Bank PI member country.

- regional actions to leverage additional economic benefits from coastal resources, notably the BDM fishery, which is analogous to the PNA-tuna situation in that a few countries now control the lion's share of a global commodity which is in growing demand because of over-fishing;

- working with fishery agencies, civil society and the private sector in Bank PI member countries to identify specific national development needs and opportunities in regard to both coastal and oceanic fisheries. The focus is likely to be on identifying improvements to the business and investment climate as it relates to the fisheries sector, and if appropriate implementing these through national projects established under the FES. Development and investment facilitation work will be undertaken in partnership or consultation with the International Finance Corporation wherever appropriate;

- capacity-building, whether for government, the private sector or civil society, will be central to the Strategy, and will revolve around two main mechanisms: short-term attachment training at professional organisations or institutions having a reputation for excellence; and in-country mentoring by technical experts during repeat advisory/ assessment visits;

- analytical studies at both national and regional levels to assess oceanic and coastal fishery development/ management options and to evaluate prospects for leveraging additional benefits through innovative resource management approaches. In the first instance these will include an evaluation of potential economic and fiscal management tools for BDM and other export-oriented coastal fisheries, as well as an updated assessment of current BDM production and market trends. Additional work is also envisaged in regard to: the application of ecosystem-based management approaches in PI coastal fisheries; appropriate climate change adaptation and mitigation measures for coastal fisheries; improved models for aquaculture development; analysis of fishery access arrangements in the Pacific Islands; and a study of the linkages between access, aid, investment and other economic factors. Some of these studies may be carried out in partnership with PI regional organisations or international agencies, and with the Banks' PROFISH program. The Strategy will retain the flexibility to undertake additional technical and analytical studies identified during the course of implementation.

4.3 The FES will also contribute to the broader efforts of the Bank to address a number of crosscutting issues, including in relation to governance, gender, environmental issues and food security. Promoting integrated coastal management and climate change mitigation/ adaptation are central tenets of the Strategy.

4.4 During the implementation of the Strategy considerable attention will be paid to ensuring that information reaches its target audience. Emphasis will be placed on communicating key fisheries issues to decision-makers using appropriate information vehicles and technology, as well as targeting regional media to raise public awareness. Wherever possible mechanisms will be put in place to ensure that the Bank's PI member countries are committed to fully utilizing and acting on the results of advisory work undertaken through the FES.

4.5 In practical terms, the Strategy will be delivered through a World Bank-sponsored Regional Fisheries Enhancement Program (RFEP), with its own formal identity as a unit within the Bank's Pacific Program Office. The RFEP will report to a Program Steering Committee (PSC) comprising program partners and stakeholders, and will be managed through an Implementation Support Unit (ISU) which will initially comprise a single professional fisheries specialist engaged as Program Coordinator, supported as needed by short-term technical consultants undertaking specific analytical or advisory activities. Depending on the rate of Program implementation, the operational arrangements ultimately adopted and the availability of funding, additional personnel will be engaged by the ISU. Ideally the ISU will comprise a minimum of two professional staff within one year of RFEP commencement.

4.6 A priority activity of the ISU will be to establish the partnerships, funding and operational arrangements needed to support the implementation of the PNA Vessel-Day Scheme, as well as other regional oceanic fishery activities, including further organizational and business planning support to the PNA Office. While Trust Funds will continue to be used to support short technical assistance activities in this area in the first instance, it is anticipated that a request will quickly be submitted to the Global Environment Facility for a Project Preparation Grant (PPG) which will enable the development of a fully specified and costed proposal for a GEF Full-Size Project (FSP) using a participatory process involving all major stakeholders.

4.7 The ISU will also mediate the development of a series of National Fisheries Enhancement Projects (NFEP) in those Bank PI member countries that wish to utilize nationally-allocated Bank (IDA, IBRD or other) or GEF funds for this purpose. It is not anticipated that all Bank PI member countries will want to use these resources for fisheries management purposes, at least not in the first instance. During the first year of RFEP operation these options will be explored with Bank PI member governments, with the aim of 'picking the low-hanging fruit' by establishing national projects in those countries most interested in following this path, and for whom the benefits are greatest. It is anticipated that at least three NFEP can be agreed in the first year of operation, with more to follow. It is also expected that the first national projects could serve a demonstration function whose positive results would encourage other countries to participate in the RFEP. National projects would be implemented by government, private sector or civil society organisations as agreed during the project design process. Development of three or more national projects may also allow access to regional IDA funds in support of regional and multi-country activities planned under the RFEP.

4.8 The RFEP will operate on a 3-year rolling work program and budget, updated each year to provide detailed activity plans and cost estimates for the next twelve months. Annual work plans and budgets will be completed at least 3 months prior to the commencement of the year to which they apply.

4.9 The physical location of the Program will need to be determined. While synergies with other Bank projects and activities would be gained by having it based at the Bank's Sydney Office, attaching the project to a regional fisheries agency would offer practical advantages in terms of resource sharing and maintaining connections with national and regional fisheries professionals.

4.10 Financing of the RFEP is expected to be through a blend of trust funds managed by the Bank, regional and national loan and grant instruments, GEF national allocations, PIC national in-kind and other commitments and, possibly, incremental funding from the GEF International Waters thematic area and contributions by other development partners. A possible funding scenario might be as follows:

- The initial operation of the Program Coordination Unit, and selected technical studies and analyses will be financed from Trust Funds available to the Bank.

- At an early stage, funding will be sought to enable consultation with the Bank's PI member countries on the desirability and prospects of using nationally-allocated Bank and GEF resources in support of fisheries development and management activities. It is anticipated that at least three, and possibly more, Bank-supported National Fishery Enhancement Projects will be established within 2 years of commencement.

- National projects are likely to be funded using a blend of IDA credit and grant financing. In some countries the option may be available to supplement this funding with nationally-allocated GEF resources;

- With the establishment of three or more National Fisheries Enhancement Projects, the option to access regional IDA funds will become available. Bank PI member countries may elect to finance further regional work, including capitalization of the proposed PNA Stabilization Fund, by allocating regional IDA funds to the PNAO (or indeed to other regional organisations). Suitable on-lending or other arrangements between the relevant regional agency and the PI countries concerned would need to be developed so that the latter are appropriately compensated for financing activities that provide benefits to a broader constituency, some of which may not be drawing down on their own resources (or in some cases who may not be Bank members).

4.11 Detailed financial discussions and negotiations between the Bank and its PI member countries will need to take place to further develop the longer-term funding ideas and arrangements. These will be initiated at an early stage of RFEP implementation.

4.12 The Fisheries Engagement Strategy envisages an initial 5-year horizon for the RFEP and associated national-level activities, but this is a short time-frame in which to achieve major restructuring of the PI fisheries sector. Many activities, such as restoration of BDM fisheries, improving tuna fishery management arrangements, and promoting domestic fishery investments, may require time frames of a decade or more. One of the Bank's own internal documents states: 'Transformative change takes time and staying power, and the Bank will

need to resist the temptation to expect measurable impact too soon in our new engagement cycle'[1]. If the RFEP performs effectively and makes adequate progress towards its goals, it is anticipated that it will be extended beyond the 5-year horizon initially envisaged.

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[1] World Bank (2009). **Blue Water: Towards a World Bank Group Pacific Strategy**. Internal Document, World Bank, Washington, DC, USA.

1. Background

1.1. Introduction

1.1.1. The Bank's Pacific Program Office in Sydney, Australia, has developed the present Fisheries Engagement Strategy to guide its fisheries-sector related activities the PI region. As well as describing the rationale, objectives, activities and structure proposed for the FES, the present document also includes extensive background information to justify or substantiate the various elements of the FES and its component interventions.

1.1.2. The document is structured according to the following outline:

(i) Background (this section) – provides broad context on the Bank's philosophy, guiding principles and focal areas in the region, the development history of the FES, and the way the document is presented;

(ii) Pacific Islands fishery resources – briefly describes some of the resource development and management opportunities and constraints pertaining to the PI fisheries sector, with information divided into sub-sections on resource endowments, oceanic fisheries, coastal fisheries and aquaculture;

(iii) Fisheries in Pacific Island economies – provides summary information on the economies of PI countries and the ways that the fisheries sector con tributes to them in regard to license and access revenues, employment, exports, contribution to gross domestic product, food security and dietary health;

(iv) The Pacific Islands regional institutional framework – presents information on development cooperation between PI countries, statements of regional policy on fisheries, and organisations working in the regional level, including the principal development partners, Pacific Island regional organisations, the Western and Central Pacific Fishery Commission, non-government organisations and the private sector;

(v) A Strategy for World Bank engagement in the PI fisheries sector –describes the rationale, goals, objectives, activities, structure and activities proposed for the Bank's Fisheries Engagement Strategy, as well as prospective funding arrangements and possible next steps.

1.1.3. The final section contains a bibliography of literature and other sources consulted during the preparation of the FES. Several Appendices are also presented, containing information considered too detailed for inclusion in the main text, covering:

(i) The Pacific Plan and fisheries;

(ii) Pacific Islands Regional Ocean Policy;

(iii) Pacific Oceanscape;

(iv) Vava'u Declaration on Pacific Fisheries Resources.

1.1.4. The substantive part of the document is section 0, which contains the forward-looking strategy and program of activities proposed for World Bank implementation. The preceding sections provide context and factual information on the PI region's fisheries and institutions

in order to situate the FES. Hopefully they illustrate the complex array of arrangements already in place in regard to fishery resource utilization, development and management in the region, as well as describing the wide range of interests (coastal states, distant water fishing nations (DWFN), bilateral and multilateral development partners, foreign and domestic industry, non-government organisations (NGO) and civil society, among others) in them.

1.1.5. The proposed Strategy identifies a niche set off activities through which the Bank can use its specific strengths and abilities to support the fisheries sector in a manner that complements and maintains harmony with the fisheries development and management efforts already under way. The Pacific Office of the International Finance Corporation (IFC) is working in parallel with this effort to define what role it might have in an overall World Bank Group (WBG) fisheries strategy for the Pacific Islands, taking account of its private sector focus and recent requests for assistance by both governments and fishing industry participants in the region.

1.2. The World Bank in the Pacific Islands region

1.2.1. The World Bank currently has 11 member countries in the Pacific Islands (PI) region – Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu[2]. The Bank has identified a potential for engagement with these countries in order to support the sustainable development and management of their fishery resources. Fisheries are of great economic significance to Pacific Island countries (PIC) through their contributions to employment, export earnings, access fees, rural livelihoods, dietary health and food security. For some Bank member PIC, especially the fishery-dependent small-island states (Federated States of Micronesia, Kiribati, Marshall Islands and Tuvalu), fish stocks comprise the primary natural resource on which future development can be based. Deriving increased economic and other benefits from these resources, while at the same time ensuring that their utilization is sustainable, will be integral to the future well-being of the PI region as a whole.

1.2.2. In the early part of the present millennium, the Bank's approach was guided by its Regional Engagement Framework for the Pacific Islands region for FY2006-2009. Although this document acknowledges the economic contribution and potential of the region's fisheries sector, specific engagement in the sector was not proposed. Instead, the Framework focused more broadly on improving the effectiveness of public expenditure, improving the business environment and creating incentives for private sector growth in PIC.

1.2.3. The Framework was not formally renewed at its conclusion in mid-2010, but during its period of implementation the Bank began to review its overall strategy in the region in order to re-align and reinforce it. The Bank has been significantly scaling up its financial support for the region, has opened country offices in several PIC, has begun to develop Country Assistance Strategies for its PI member countries (CAS or equivalent documents are now in place for Kiribati, PNG and Solomon Islands) and has identified a number of additional areas where it may be able to add value in the future. According to a recent Bank internal discussion paper[3], these include:

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[2] Nauru is a possible candidate country for future Bank membership. The Pacific Program Office in Sydney is also responsible for Bank activities in Timor-Leste, but as that country has limited geographical, historical or economic connection with the PI region it has not been included as part of the fisheries strategy formulation exercise.

[3] World Bank (2009). **The World Bank Group: Strategic Directions in the Pacific**. Session 1 Background Paper, Pacific Seminar, October 10 2010. World Bank, Washington DC., USA.

- Promoting regional and global integration;
- Supporting improved telecommunications;
- Helping countries to strengthen the management of natural resource revenues;
- Building the resilience of PI countries to external shocks;
- Improving infrastructure asset management;
- Mainstreaming disaster risk management and climate change adaptation;
- Providing greater opportunities for women and youth as part of an increased emphasis on achieving millennium development goals (MDG);
- Building effective institutions in order to underpin sustainable development.

1.2.4. Engagement with the fisheries sector has the potential to contribute to (or, conversely, be supported by) several of these areas. Regional economic integration can generate opportunities for increased fisheries investment, employment and trade. Improving management of natural resource revenues clearly has implications for the fisheries sector, which generates rents on which several Bank member PIC are heavily dependent. Development and improved management of maritime and coastal infrastructure will reinforce fishery development and investment opportunities. Many of the issues associated with fisheries management and development relate to institutional weaknesses.

1.2.5. PROFISH, the Bank's Global Program on Fisheries, is a programming and funding partnership between key fishery sector donors, international financial institutions, developing countries, stakeholder organisations, and international agencies. PROFISH has supported earlier Bank work in the PI fisheries sector.

1.2.6. The objective of PROFISH[4] is to strengthen governance of the world's marine fisheries by:

- improving the quality of investments made by both public and private sectors;
- assisting countries and regions establish roadmaps to achieve effective sector governance and reform using improved fisheries management tools;
- aligning donor interventions.

1.2.7. PROFISH aims to improve sustainable livelihoods in the fisheries sector and to make concrete progress towards meeting the WSSD's goals in fisheries through three complementary activities:

- building sustainable fisheries initiatives into national plans and poverty reduction strategies;

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[4] See http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTARD/0,,print:Y~isCURL:Y~contentMDK:20663251~pagePK:210058~piPK:210062~theSitePK:336682,00.html

- building national and regional consensus on pro-poor sustainable fisheries initiatives and priority activities to implement the FAO Code of Conduct for Responsible Fisheries (CCRF); and

- aligning and enhancing international assistance on fisheries and sustainable use of aquatic

- ecosystems and catalyzing implementation of agreed initiatives.

1.2.8. The Fisheries Engagement Strategy presented here is aligned with the specific PROFISH program priorities[5] relevant to the specific needs of the PI region.

1.2.9. In other regions (Seychelles and some West African countries), PROFISH has been instrumental in developing fisheries 'dashboards', information systems which have both national and regional dimensions. The need for a faster compilation and turnaround of key regional data is clear, and the Bank's dashboards have direct application at country level, flagging trends in fish stocks, catches, employment and prices (fish, jobs, profits). Such dashboards are of direct value to decision makers while also serving as a means of monitoring implementation progress of Bank-sponsored activities.

1.2.10. PROFISH documentation[6] also notes that the strengths of the Bank in the fisheries sector include:

- the ability to support the process of restructuring forced upon the sector through rising costs and changing patterns of demand for tuna products;

- involving the wide range of partners that the Bank has developed beyond the fisheries sector, which may provide constructive and innovative solutions for assistance;

- the ability to engage on issues deemed too sensitive by other regional organisations – for instance effectively addressing the governance consequences of corruption;

- the ability to support the fisheries sector through a combination of studies, technical assistance and financial support for private and public investments;

- economic and environmental expertise, which could support analytical work to assist the future development of the fisheries sector.

1.2.11. In addition, the Bank is able to use its position as a disinterested player and 'honest broker' in the region, with no particular interests to defend or agenda to promote. The Bank is also well-positioned to provide information and knowledge on climate-change related issues, their potential impacts on fisheries and other sectors, and appropriate responses to them.

1.2.12. An internal Bank paper[7] notes that 'The Bank Group's multilateral personality means it can bring to the Pacific a degree of political neutrality that bilateral agencies cannot. We also bring expertise in diagnosing economic failure and the development of corrective

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5 World Bank (2011). **The Global Program on Fisheries: Strategic Vision for Fisheries and Aquaculture**. Agriculture and Rural Development Department, World Bank Group, Washington, DC, USA.

6 World Bank (2010). **PROFISH Work Plan and Progress Report**. Prepared for PROFISH Steering Committee, 8 July 2010, Washington DC, Revised December 2010. World Bank, Washington, DC, USA.

7 World Bank (2009). **Blue Water: Towards A World Bank Group Pacific Strategy**. Internal Document, World Bank, Washington, DC, USA.

policies, particularly in complex environments. Operational work can be used to ground policy analysis in an appreciation of the practical world, and of the opportunities and constraints that citizens and governments face'.

1.3. Development of the Fisheries Engagement Strategy

1.3.1. The fisheries sector has not traditionally been a major focus of World Bank activity in the Pacific Islands. This began to change in 2008, when the Bank undertook a study of the benefits that PI states derive from fisheries, and ways in which these might be increased. The study[8] recommended a number of ideas for further investigation, including:

- reduce corruption in fisheries;
- improve poor national fisheries institutions;
- enhance skills of fishery managers;
- encourage countries to "take advantage of their advantage" in dealing with DWFN;
- increase participation of Pacific Island countries in the tuna industry;
- improve impact of fisheries studies;
- improve government policies for tuna industry development;
- improve regional solidarity in fisheries;
- improve effectiveness of the Western and Central Pacific Fisheries Commission (WCPFC);
- strengthen governance in the inshore fisheries subsector;
- improve effectiveness of fishery monitoring, control and surveillance (MCS) through economic analysis;
- more active multilateral donor participation in fishing sector management;
- improve market access;
- specific studies that may cover a broader (economic and/or political) area than existing technical analysis.

1.3.2. The study report noted that many of the proposed areas of intervention may form part of a more fundamental restructuring of Pacific Island fisheries, particularly for tuna, which the Bank might support through a combination of studies, technical assistance, and financing of public and private investments. The report also noted the importance of involving PI regional organisations, especially the Pacific Islands Forum Fisheries Agency (FFA), at an

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[8] Gillett, R. and G. van Santen (2008). **Optimizing Fisheries Benefits in the Pacific Islands: Major Issues and Constraints**. Discussion Paper, Sustainable Development Department, East Asia and Pacific Region, The World Bank, Washington, DC, USA.

early stage, both to ensure commitment by the region, and to allow easier access to technical information by the Bank itself.

1.3.3. This initial study led to the development by the Bank of a draft Framework for the Pacific Islands Fisheries Program (January 2009). The draft noted that preliminary discussions with the region's major bilateral and multilateral donors, as well as the main regional organisations involved in fisheries (FFA, WCPFC and SPC [Secretariat of the Pacific Community]), indicate that the Bank could potentially play a key role in the sector, in particular by bringing in international experience and catalyzing support for the sector. The draft Framework proposed the development of a preliminary program of targeted fisheries-sector assistance to the Pacific Islands, taking into account the priorities of PIC, and noted that the scope of possible Bank interventions might include:

- development of policies and instruments to strengthen tenure over coastal fishery resources;
- reducing the dependency of coastal fisheries on imported energy;
- promoting enabling environments for aquaculture;
- building resilience to climate change;
- cross-cutting activities relating to trade, displacement of coastal communities, improved communications and information technology; and
- capacity building in regard to broader economic and policy agendas.

1.3.4. Many of these activities are strategic in nature, and some extend beyond the fisheries sector. The draft Framework noted that the Bank's interventions in fisheries must take full account of existing national and regional activities, and proposed the compilation of an inventory of current donor and other programs in the sector.

1.3.5. The draft also flagged the need to provide a framework for analytical work and technical assistance, and proposed several thematic investigations into:

- the effects of energy costs on fisheries;
- the impact of illegal, unregulated and unreported (IUU) fishing;
- bio-economic modeling of the wealth potentially available from PI tuna fisheries; and
- the role of distant-water fishing nations (DWFN) and foreign operators.

1.3.6. Later in 2009 the Bank co-sponsored (with the Asian Development Bank (ADB), the Australian Agency for International Development (AusAID), FFA and SPC) a review of fisheries in the region[9]. This study updated earlier estimates (from 2001) of the contributions of fisheries to gross domestic product (GDP), and examined their roles in supporting livelihoods, food security, nutrition and other social and cultural values. Some of the specific investigations recommended by the draft Framework were partially addressed through this

[9] Gillett, R. (2009). **Fisheries in the Economies of the Pacific Island Countries and Territories**. Pacific Studies Series, Asian Development Bank: http://www.adb.org/documents/studies/pacific-fisheries/default.asp.

study, while others have since been carried out or added to through subsequent work by other agencies.

1.3.7. These studies and discussions laid the foundations for the development of a more formal strategy for the Bank's involvement in the PI fisheries sector. Preparation of the present Fisheries Engagement Strategy (FES) involved the review of a large body of literature and documentation, some of which is listed in Section 0. Extensive consultation also took place with approximately 280 representatives of PI fishery administrations, the private sector, regional organisations, development partners, the NGO community and other stakeholders (a full listing of whom can be provided on request).

1.3.8. As well as building on the findings of earlier Bank studies, literature review and the consultative process, the FES takes into account: the Bank's existing or planned Country Assistance Strategies (CAS) for its PI members; several regional or thematic guideline documents used internally by the Bank; and the Bank's perceived areas of strength and comparative advantage in the fields of knowledge-based activities, policy development, economic analysis, inter-sectoral cross-cutting activities, and the ability to mobilize experience from other countries or regions. The FES also recognizes and maintains consistency with a number of overarching regional strategic or policy statements agreed by PIC and their development partners, to ensure that initiatives by the Bank take place within this structure and do not seek to 'reinvent the wheel'.

1.3.9. The FES thus provides the Bank with a framework for analytical work, technical assistance and the use of Bank financial instruments for fisheries development and management by its PI member countries, designed in response to identified/ articulated needs by the beneficiary states, harmonized with the activities of other donors and regional organisations, and based on thorough technical and economic assessment and analysis. The FES should place the Bank in a position of being able to approve and implement a multi-year program of fisheries sector support activities, formulated as an integrated suite of targeted interventions at national, sub-regional and regional levels.

1.3.10. As the Strategy was being developed, two specific short-term interventions were implemented in order to provide immediate assistance to the Parties to the Nauru Agreement[10] (PNA) and the PNA Office (PNAO) in a manner consistent with the longer-term goals of the FES itself.

- Examination of options for increasing employment of PNA nationals on fishing vessels operating in PNA Waters;
- Initial business planning advisory support to the PNAO.

1.3.11. Terms of reference were also developed for further studies on aspects of coastal and oceanic fisheries management in the PI region, which when completed will provide additional technical and economic analysis to support the development of specific interventions to be carried out under the FES.

1.4. Economic characteristics of Pacific Island countries

[10] Parties to the *Nauru Agreement Concerning Cooperation in the Management of Fisheries of Common Interest* are Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Palau, Papua New Guinea, Solomon Islands, and Tuvalu. All except Nauru are Bank member countries.

1.4.1. The following paragraphs provide a thumbnail sketch of the economic conditions prevailing in the Bank's Pacific Island countries. The aim is to illustrate the context in which PI fisheries operate. It is not intended to provide extensive descriptions of national or regional economies, which would be beyond the scope of this document and would duplicate existing material. More detailed information is available in a number of comprehensive documents on PI economies produced by the World Bank, ADB, AusAID and other agencies, as listed in Appendix 1.

1.4.2. The Pacific Islands comprise one of the World Bank's most diverse country departments: the 11 countries concerned[11] range in land area from 181 to 463,000 km2, in population from 11,000 to 6.9 million, and in per capita GDP from US$900 to 8,400. There are huge differences in land area, from the high islands of Melanesia to the tiny atolls and raised coral islands of Kiribati and Tuvalu, and in economic prospects or viability, from Papua New Guinea (PNG) at one end of the spectrum to Federated States of Micronesia (FSM) at the other. The small populations of PI countries are scattered over large areas or distances, leading to a cultural and linguistic diversity within Melanesia which is the most pronounced in the world, and distinct again from Micronesia and Polynesia.

1.4.3. Table 1~~Table 1~~ and
Table 2
1.4.4. ~~Table 2~~ below provide summary demographic, GDP and trade data on the Bank's PI member countries, and on the region[12] as a whole. The tables further emphasize the enormous diversity that characterizes the countries of the region:

- One country, PNG, accounts for almost 70% of the region's population and over 83% of its land area. Even after excluding PNG these statistics vary by several orders of magnitude among the remaining Bank PI member countries (Solomon Islands has 50 times more population and over 1,000 times more land area than Tuvalu);

- Some countries, including Kiribati and the relatively highly-populated Melanesian states of PNG, Solomon Islands and Vanuatu, have population growth rates approaching or exceeding 2% per annum. The populations of these countries are projected to show a 45-55% increase by 2030, and to roughly double by 2050;

- Population densities are predictably highest in those countries with the smallest land areas – FSM, Kiribati, Marshall Islands, Tonga and Tuvalu, all of which exceed 100 persons/ sq. km. The already limited land resources in these PIC will be stretched further by population growth in the coming decades.

1.4.5. Although the Bank's PI member countries comprise 95% of the region's land area and over 91% of its population, collectively they account for only a third of its GDP. Most PI states that are not Bank members are territories of metropolitan countries, from which they gain considerable economic advantage. Per capita GDP in Bank member countries is about 40% of the regional average. The largest economies of the region are New Caledonia, PNG, French Polynesia, Guam and Fiji, in that order. Palau, Marshall Islands, Kiribati and Tuvalu are among the smallest, along with Niue and Tokelau.

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[11] The 12th Bank member country for which the Bank's Sydney office is responsible, Timor-Leste, is not considered here.

[12] As well as the Bank's member countries, the PI region includes American Samoa, Cook Islands, French Polynesia, Guam, Nauru, New Caledonia, Northern Mariana Islands, Pitcairn Islands, Tokelau, and Wallis and Futuna. Unless otherwise stated, regional data presented in this document includes these countries.

1.4.6. Exports from PI countries are dominated by natural resources (minerals, hydrocarbons, timber, fish and 'unspoiled scenery' in the form of tourism), whose conversion into economic gain often relies on foreign expertise. The other main 'export product' is labor – remittances from citizens working overseas are important contributors to several PI economies (over 60% of foreign exchange earnings in Tonga, 50% in Samoa and 15% in Kiribati). Economic contractions and unemployment in the developed countries where their diasporas work quickly impact on remittances to PI countries[13].

Table 1: Demographic characteristics of Bank PI member countries and the PI region

World Bank PI member country	Mid-year population estimate		Land area (sq. km)	Population density (people/ sq. km)		Population annual growth rate (%)
	2011	2030		2011	2030	
FSM	102,360	103,205	701	146	147	0.4
Fiji	851,745	946,320	18,273	47	52	0.5
Kiribati	102,697	137,471	811	127	170	1.8
Marshall Islands	54,999	62,414	181	304	345	0.7
Palau	20,643	22,604	444	46	51	0.6
PNG	6,888,297	9,899,549	462,840	15	21	2.1
Samoa	183,617	197,689	2,935	63	67	0.3
Solomon Islands	553,254	846,151	30,407	18	28	2.7
Tonga	103,682	111,731	650	160	172	0.3
Tuvalu	11,206	12,488	26	431	480	0.5
Vanuatu	251,784	370,391	12,281	21	30	2.6
Sub-total	**9,124,283**	**12,710,013**	**529,550**	**17**	**24**	**n/d**
Total - PI region	**10,012,371**	**13,789,761**	**553,519**	**18**	**25**	**1.9**
WB member % of regional total	**91.1%**	**92.2%**	**95.7%**	**-**	**-**	**-**

Notes:
- Data in this table from SPC (2011). **2011 Populations and Demographic Indicators**. Spreadsheet, downloaded from: http://www.spc.int/sdp/index.php?option=com_docman&task=doc_download&gid=344&Itemid=42&lang=en. Secretariat of the Pacific Community, Noumea, New Caledonia.

Table 2: GDP and trade data in Bank PI member countries and the PI region

World Bank PI member country	Nominal 2010 GDP		Balance of trade (US$ million)			
	Total (US$ million)	Per capita (US$)	Exports	Imports	Trade balance	Data year
FSM	235.9	2,183	3.4	137.99	-134.6	2006
Fiji	2,928.0	3,499	925.2	2,265.0	-1,340.0	2008
Kiribati	144.8	1,490	9.8	70.3	-60.5	2007
Marshall Islands	149.2	2,851	n/d	75.2	n/d	2003
Palau	170.1	8,423	n/d	n/d	n/d	n/d
PNG	5,552.1	897	5,706.7	3,137.2	2,569.4	2008
Samoa	497.1	2,672	70.1	282.1	-212.0	2008
Solomon Islands	528.0	1,014	121.1	216.0	-94.9	2006
Tonga	270.2	2,620	8.8	0.7	8.1	2008
Tuvalu	17.5	1,831	9.8	12.6	-2.8	2006
Vanuatu	507.5	2,218	41.7	286.4	-244.7	2008
Sub-total	**11,000.4**	**1,226**	**6,896,527**	**6,483,507**	**488,255**	**-**
Total - PI region	**31,274.4**	**3,174**	**8,628,137**	**11,900,143**	**-3,294,981**	**-**
WB member % of regional total	**35.2%**	**38.6%**	**80%**	**54%**	**-15%**	**-**

[13] World Bank (2010). **East Asia and Pacific Economic Update 2010, Vol. I. Country Pages and Key Indicators**. World Bank, Washington, DC, USA.

Note:
- Data in this table from SPC (2011). **2010 Pocket Statistical Summary**. Secretariat of the Pacific Community, Noumea, New Caledonia.
- Export data not available for Marshall Islands and Palau. Import data not available for Palau.

1.4.7. Agricultural commodities (e.g. copra, coffee and cocoa) as well as certain specialty items (e.g. kava and vanilla) are exported from some countries, but most agriculture production is by smallholders and is consumed domestically. Logging of native forests is important in a handful of countries, but is environmentally damaging and will not be sustainable unless there is a transition to plantation forestry. Tourism is important in some countries and developing in others, and is considered to be one of the few areas where certain PIC may have a natural advantage. Many countries are reliant to varying degrees on royalties, especially from fishery access but also from licensing of telephone codes and internet domains, the operation of offshore finance centers and foreign shipping registries, and interest or profits from sovereign wealth funds. Imports exceed exports in all but two Bank member PI countries, and in several (Kiribati, Marshall Islands, Samoa and Tuvalu) exceed 50% of GDP. In some cases the balance of payments is kept in the black by overseas development assistance (ODA).

1.4.8. Despite their diversity, the Bank's PI member countries share a number of common characteristics, most of which place them at a disadvantage relative to other countries or regions. PIC have open economies, making them vulnerable to events beyond their control. Their particular geography means that great distances separate them from their trading partners and from each other. PIC exist on the 'global margin', remote from their markets and inherently uncompetitive as producers/ exporters of goods and services. Infrastructure is poorly developed, especially outside urban areas, and the costs of transportation and communication are high. As price-takers they are exposed to global market shocks, and although physically remote they are greatly influenced by external political and economic forces. They lie along interlocking spheres of strategic interest (the US, Australia, China, New Zealand, Japan and France), which sustains high per capita aid and fiscal flows[14.] Their external balances are vulnerable to rising oil prices and to changes in the accessibility of overseas labor markets. PI countries face considerable challenges in maintaining flows of remittances, tourism earnings, resource rents and export receipts. All PIC are prone to natural disasters (cyclones, volcanoes, earthquakes and tsunamis) which can damage infrastructure and support services and add greatly to the cost of development. The region is in the front line of exposure to climate change, which is likely to increase the severity of weather-related natural disasters and threaten the environment (including coastal ecosystems) and natural resources (including fisheries) on which Pacific Islanders depend.

1.4.9. Not surprisingly, therefore, the economic performance of PI countries has historically been rather poor. The 'Pacific 2020' study carried out in 2006[15] found that the PI region had experienced low or negative growth in per capita income in the years prior to the study. In the period 1990–2004, four of the five Micronesian countries had negative growth and, of the Melanesian countries, only Fiji had achieved an average growth of more than 1% per year. In general the Polynesian countries had done better, but only when compared with the rest of the region: their growth was well below the average for developing countries, and much less than

[14] World Bank (2009). **Blue Water: Towards A World Bank Group Pacific Strategy**. Internal Document, World Bank, Washington, DC, USA.

[15] AusAID (2006). **Pacific 2020: Challenges and Opportunities for Growth**. Australian Agency for International Development, Canberra, ACT, Australia.

that achieved by Mauritius, which the study considered to be a comparable case from outside the region.

1.5. Prospects for future economic growth

1.5.1. The region's most important productive sectors are agriculture, fisheries, forestry, mining and petroleum, and tourism. In regard to these sectors, the Pacific 2020 study found that:

- Agricultural productivity has to increase if living standards are to improve in the Pacific;
- Fisheries management must improve to allow better use of the region's marine resources;
- Natural logging is in crisis, but there are growth opportunities in forest plantations;
- Mining and petroleum could generate large revenues for some PIC but without good governance could lead to environmental damage, corruption and instability;
- PIC should diversify into tourism, a sector in which they can compete globally.

1.5.2. Key cross-cutting barriers to economic growth in the region include the following:

- weak governance is holding back growth;
- weak infrastructure (transport, telecommunications, power) is a major constraint to growth;
- integration and regional cooperation are not options but necessities for PI countries;
- poor implementation is the most serious constraint to successful reform and rapid growth.

1.5.3. The Pacific 2020 study described three possible futures for PI countries:

- a 'doomsday' scenario, where the region completely fails to meet its mounting challenges;
- 'muddling on', where collapse is prevented by continued aid and migration;
- a 'positive response' scenario in which appropriate reforms accelerate economic growth.

1.5.4. The nature of the actions required to achieve the economic growth scenario varies from country to country, but in general revolve around structural policy reforms and sensible public investment where a relatively quick growth impact can be expected (for example, in infrastructure), combined with more attention to tough, long-term growth constraints such as political governance and land tenure.

1.5.5. Since the Pacific 2020 report was prepared a number of external and internal shocks have affected the Pacific Islands, including:

- the 2008 global financial crisis and its progression into a broader economic recession;
- skyrocketing fuel and other commodity prices;
- doubling of the cost of rice, wheat and other imported staple foodstuffs in PI countries; and
- natural disasters, including cyclones, tsunami and floods, in different countries of the region.

1.5.6. These factors have combined in the PI region to result in lower foreign and domestic direct investment, lower prices and reduced demand for commodity exports, pressure on tourism, falls in remittance flows, reductions in the value of offshore national trust funds, downward pressure on other public revenue streams, and reduced availability of credit. As a result, the majority of the Bank's PI member countries continue to shown flat or declining economic performance. The exceptions are the countries of Melanesia, three of which have achieved relatively high levels of economic growth in the last couple of years due to resurgence of the minerals sector and investment in new petroleum/ hydrocarbon projects (PNG), logging (Solomon Islands) and improved policies towards the business sector (Vanuatu)[16]. The broad challenges to economic growth still remain, however, and may become even more daunting than in the past if oil, food and other commodity prices continue to rise[17].

1.5.7. Under these circumstances the fisheries sector is of key significance. At a time when the challenges facing the PI region are as great or greater than ever before, it is critical to secure gains in all the economic sectors that show prospects for improved performance. Fisheries comprise one of only a handful of such sectors: depending on the country concerned, fisheries may present opportunities for:

- increased royalties or rents payable for access to resources;
- production, value-adding and export of fishery products, or substitution of imports;
- local or overseas employment of citizens in fishery-based enterprises;
- increased support to rural communities and livelihoods;
- improved food security, nutrition and dietary health.

1.5.8. The challenges to development and economic growth in the PI region are well-studied and documented and there is no shortage of technical, financial and policy advice available to PI countries from regional agencies, bilateral and multilateral development partners, academic institutions and other bodies. As noted by the Pacific 2020 report, it is not the lack of information and guidance but poor implementation which is the most serious constraint to successful reform and rapid growth.

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[16] AusAID (2010). **Pacific Economic Survey 2009**. Australian Agency for International Development, Canberra, ACT, Australia.

[17] World Bank (2011). **East Asia and Pacific Economic Update 2011, Volume 1: Securing the Present, Shaping the Future**. World Bank, Washington, DC, USA.

1.5.9. Without increased economic growth, PI countries will be unable to meet their pressing challenges, the most immediate and widespread of which are unemployment and joblessness, which could lead to poverty, frustration and social instability. The region is also facing serious and worsening health problems (particularly in regard to lifestyle-related conditions), environmental challenges such as climate change, and rapid urbanization. If PI countries are to meet these challenges, their economies need to grow and create wealth which can be shared between the private and public sectors, thereby strengthening both. Only growth will create employment, as well as the revenue that the public sector needs to deal with environment and health challenges. Economic growth will not be sufficient to solve all the problems facing Pacific Island countries, but no country has succeeded in reducing poverty without it[18].

[18] World Bank (2009). **Blue Water: Towards A World Bank Group Pacific Strategy**. Internal Document, World Bank, Washington, DC, USA.

2. Pacific Islands fishery resources

2.1. RESOURCE ENDOWMENTS

2.1.1. The Pacific Ocean provides PI countries with a range of goods and services including living and non-living resources, coastal protection and waste disposal, transportation, recreation, customary, spiritual and other values. Although all are important, living resources currently make the largest direct contribution to the economies of the region, and are the primary focus of the present document.

2.1.2. Table 3~~Table 3~~ below provides information on the marine space endowments of the Bank's PI member countries, in various categories. In some cases these can be used as a proxy for, or indicator of, the abundance or accessibility of fishery resources.

Table 3: Estimated marine space endowments of Pacific Island countries

World Bank PI member country	Estimated area (km^2)				Coastline length (km)	Ratio of EEZ to land area
	Exclusive economic zone [12 - 200 nautical miles]	Territorial sea [0 - 12 nautical miles]	Continental shelf [0 - 200m depth]	Coral reefs		
FSM	2,780,000	91,494	2,325	4,340	1,295	4,248
Fiji	1,290,000	162,197	19,497	10,120	4,637	71
Kiribati	3,550,000	71,961	2,666	2,940	1,961	4,890
Marshall Islands	2,131,000	111,968	642	6,110	2,106	2,960
Palau	629,000	n/d	n/d	1,150	*1,519*	1,258
PNG	3,120,000	752,256	132,401	13,840	20,197	7
Samoa	120,000	10,120	584	490	463	41
Solomon Islands	1,340,000	212,294	25,922	5,750	9,880	45
Tonga	700,000	35,659	3,191	1,500	909	1,006
Tuvalu	900,000	n/d	n/d	710	*24*	34,615
Vanuatu	680,000	114,299	13,582	4,110	3,132	56
Sub-total	**17,438,000**	**1,562,248**	**200,810**	**51,060**	***24,112***	**33**
Total - PI region	**30,569,000**	**n/d**	**n/d**	**n/d**	***31,110***	**55**
WB member % of regional total	***57%***	**-**	**-**	**-**	***78%***	**-**

Notes:

- Ocean areas are estimates and may not be reliable. Published data varies widely, and may be calculated inconsistently between countries.
- EEZ area estimates from the Secretariat of the Pacific Community. Estimates do not include the disputed zone around Matthew and Hunter Islands (claimed both by New Caledonia and Vanuatu).
- Territorial sea and continental shelf area estimates from World Resources Institute – www.earthtrends.wri.org. Sub-totals exclude Palau and Tuvalu.
- Coastline length estimates from World Resources Institute (as above) except for Palau, Tuvalu and totals (in italics), which are from the CIA Fact Book. Scales at which the coastline lengths were measured are not stated, and data is not necessarily comparable across different countries. (The estimate for Tuvalu is almost certainly incorrect).
- Coral Reef Area estimates from Spalding, M. D., C. Ravilious and E. P. Green (2001). **World Atlas of Coral Reefs**. University of California Press, Berkeley, USA.

2.1.3. It should be emphasized that published data on the area of PI EEZ and other maritime zones is inconsistent and variable. Even PI regional fishery agencies are frustrated at the unreliability of this information, which is important for fishery planning, monitoring and stock assessment, not to mention attribution of access revenues. Part of the problem is that many maritime boundaries in the region remain undefined. At the time of writing only Fiji, Nauru and Palau have declared their maritime baselines, zones and outer limits in accordance with UNCLOS, while Papua New Guinea, Solomon Islands and Vanuatu have declared only

their archipelagic baselines. Of these countries, four (Fiji, Palau, Solomon Islands and PNG) are in the process of verifying / updating the data used to declare their respective baselines and maritime zones[19]. Of the region's 48 shared boundaries, only 21 are presently subject to treaty, as shown in Figure 1~~Figure 1~~ below.

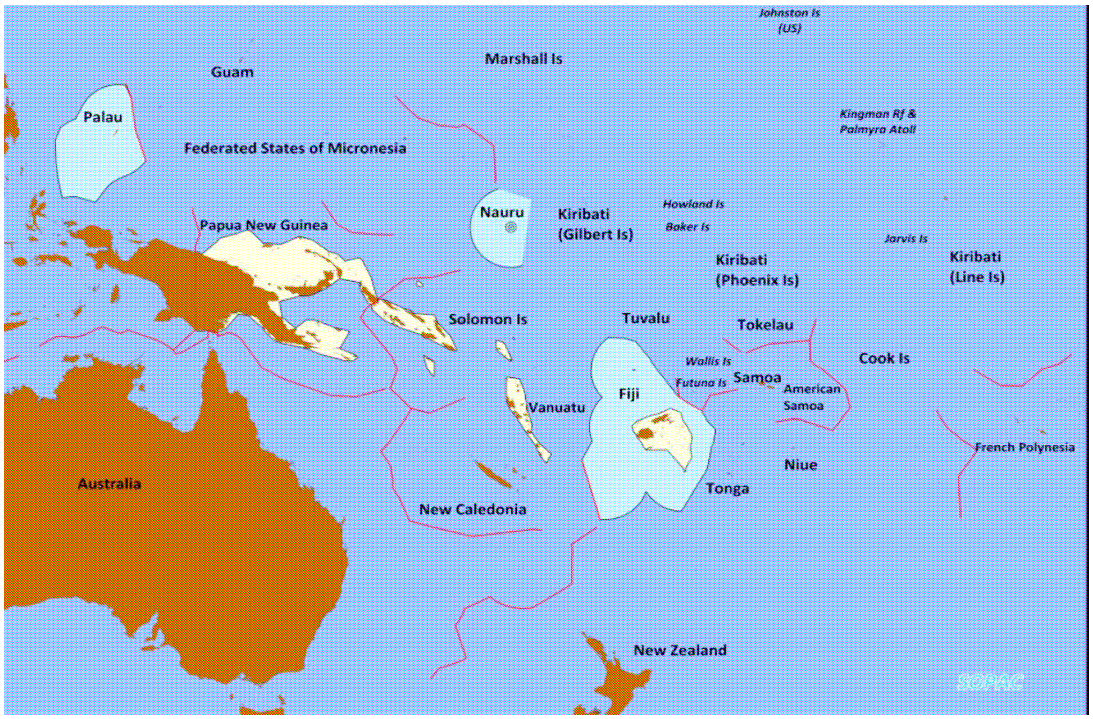

Figure 1: Regional map indicating those PIC maritime boundaries which have been declared and lodged in accordance with UNCLOS (Source: SPC)

2.1.4. As with land endowment, the size of PI countries' exclusive economic zones (EEZ) varies greatly. Kiribati has one of the biggest EEZ in the region: at 3.5 million km2 it is 30 times larger than that of the smallest, Samoa. Uniquely in the PI region, the Kiribati EEZ is broken into three separate areas of jurisdiction as shown in Figure 2~~Figure 2~~ below.

[19] SPC (2011). **Briefing document of the status of maritime boundaries in Pacific Island countries**. Working Paper 5, Seventh Heads of Fisheries Meeting (28 Feb - 4 March 2011), Noumea, New Caledonia. Secretariat of the Pacific Community, Noumea, New Caledonia.

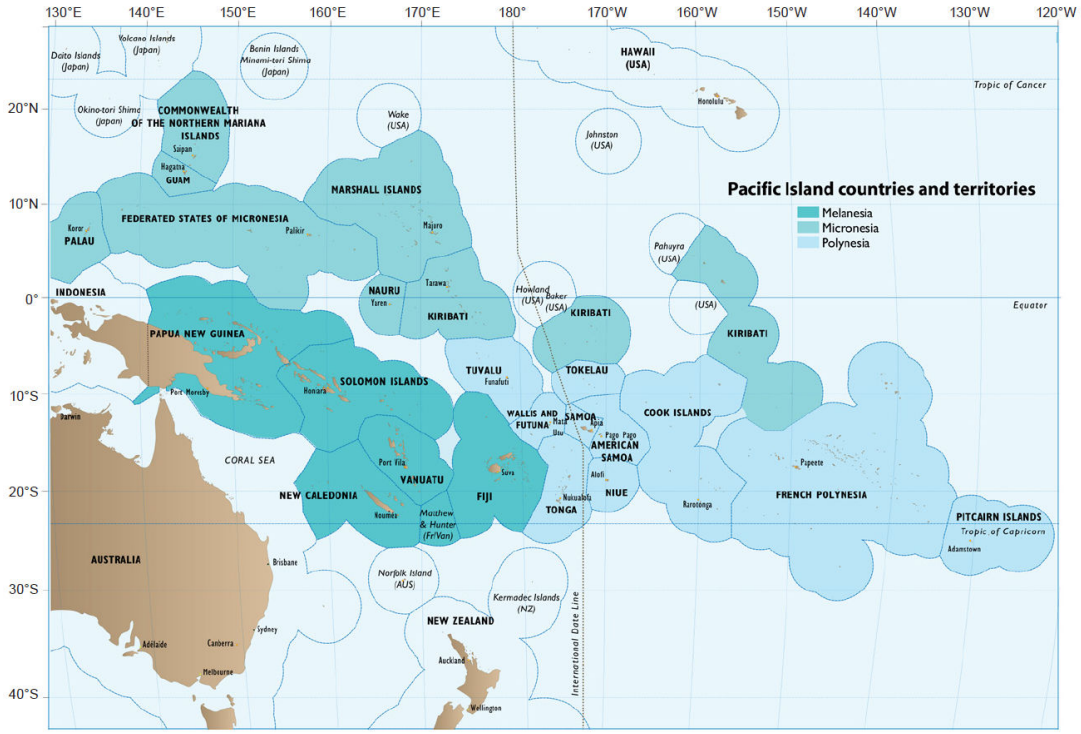

Figure 2: Distribution of exclusive economic zones in the PI region (Source: SPC)

2.1.5. PNG, FSM and Marshall Islands follow closely behind Kiribati in regard to the extent of their EEZ. These four countries plus Fiji and Solomon Islands all have EEZ that exceed 1 million km2. However the largest EEZ in the PI region is that of French Polynesia, at over 5 million km2. Other non-Bank members, including Cook Islands, New Caledonia and Pitcairn also have EEZ exceeding 1 million km2, and collectively the non-Bank PI countries account for about 13.5 million km2. Thus, although Bank PI member countries comprise almost 96% of the region's land area and over 91% of its population, they account for only 57% of its EEZ area. In addition there are substantial areas of high seas, some of which are fully or partially enclosed by EEZ of the region. Trans-boundary fishery resources straddle these various jurisdictional areas, which thus play a crucial part in fishery development, management and control arrangements.

2.1.6. Table 3~~Table 3~~ also shows estimated areas of territorial sea, continental shelf and coral reef area, as well as coastline length, all of which are relevant to fisheries:

- fish resources are typically more abundant in waters of the territorial sea than they are in more oceanic areas, and this area is more accessible to domestic PI vessels due to its relative proximity to land. In most PI countries foreign fishing vessels operating under access agreements are excluded from the territorial sea, and sometimes additional areas, in order to minimize conflicts and reserve resources for use by local fishers;

- the continental shelf (the zone between a depth of 0 and 200m) is the area most accessible to bottom-fishing operations. In many parts of the world this means trawling, but in PI countries steep contours and rugged seafloors make trawling

impossible in most places[20]. Demersal line-fishing for deep-bottom fish is nevertheless important throughout the PI region;

- the area of coral reef and associated habitat is of direct relevance to community-based and small-scale fishing operations carried out for subsistence and to supply local markets. These fisheries contribute most to food security, dietary health and rural livelihoods throughout the PI region. The estimated length of coastline, although less useful, is a further indicator of resource accessibility for small-scale fishers.

2.1.7. Globally, 39% of the world's population lives within 100km of the coast. In the PI region 100% of the population falls into this category apart from in PNG, where the relevant figure is 61%.

2.1.8. Also shown in Table 3~~Table 3~~ are estimates of the ratios of EEZ area to each Bank PI member country's land area, which provides an indication of the relative importance that ocean resources are likely to have in a given country. The ratio is lowest (below 100) in the Melanesian states (because of their relatively large land masses) and in Samoa (because its EEZ size is constrained by those of several neighboring countries), but exceeds 1,000 for all the Bank's other PI member countries, and approaches 35,000 in the extreme case of Tuvalu.

2.2. FISHERIES PRODUCTION

2.2.1. The PI region's fisheries are often divided into 'oceanic' (or 'offshore') and 'coastal' (or 'inshore') categories, based both on their geographical range and distribution, and on the ways in which they are exploited. Oceanic fisheries (tunas, marlins, billfishes, sharks and allied species) are primarily the target of large-scale, often foreign, fishing effort whose products are landed at industrial fish processing facilities, while coastal fisheries (for a wide range of reef and lagoon fish, invertebrates and plants) are generally exploited on a smaller scale, supporting local economies and rural livelihoods. There is some crossover, in that artisanal fisheries also exploit oceanic species throughout the region. Both categories contribute significantly to the economies of all PIC. Freshwater fisheries are important in a few PIC, although completely absent in others due to a lack of freshwater habitat. Aquaculture, both freshwater and marine, has developed in some PIC (especially the French territories) but has yet to become a significant economic activity in most Bank member countries.

2.2.2. Total fishery production by PI countries (i.e. excluding the catch taken by foreign fleets) for 2007 (the most recent year for which comprehensive data on both oceanic and coastal fishery categories is readily available) was estimated to be around 1.44 million tonnes, (mt) with a first landed value of US$ 2.44 billion. The majority of the region's fishery production originates from the Bank's PI member countries: collectively they produce about 93% (1.34 mt) of fishery landings and 84% ($2.15 billion) of its value. Some 40% of this volume, and 47% of its value, is from PNG, with other countries producing smaller but still significant amounts, as shown in Table 4~~Table 4~~. (The table does not include aquaculture production, which is discussed in more detail in Section 2.5).

[20] The only trawl operation of any significance in the PI region is the prawn fishery in the Gulf of Papua, PNG.

Table 4: Fishery (excluding aquaculture) production volume and value (2007) for the Bank's PI member countries, and for the PI region as a whole

World Bank PI member country	Total catch in country waters (volume in tonnes, value in US$ million)							
	Coastal (commercial and subsistence)		Offshore (domestic and foreign)		Freshwater		Total	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value
FSM	12,600	23.3	159,537	224.4	1	0.0	45,282	247.7
Fiji	26,900	67.6	14,236	97.4	4,146	4.3	172,138	169.2
Kiribati	20,700	47.1	163,215	244.1	0	0.0	183,915	291.2
Marshall Islands	3,750	7.2	76,296	108.0	0	0.0	80,046	115.2
Palau	2,115	5.4	4,494	24.1	1	0.0	6,610	29.4
PNG	35,700	62.5	583,868	794.8	17,500	16.6	637,068	873.9
Samoa	8,624	34.5	3,780	42.9	10	0.0	12,414	77.4
Solomon Islands	18,250	14.3	121,642	200.5	2,000	1.5	141,892	216.3
Tonga	6,500	17.5	1,119	20.6	1	0.0	7,620	38.0
Tuvalu	1,215	2.8	35,541	43.8	0	0.0	36,756	46.6
Vanuatu	3,368	7.9	12,858	33.9	80	0.2	16,306	42.0
Sub-total	**139,722**	**290.0**	**1,176,586**	**1,834.4**	**23,739**	**22.5**	**1,340,047**	**2,146.9**
Total – PI region	**154,722**	**366.1**	**1,265,781**	**2,049.5**	**23,858**	**23.1**	**1,444,361**	**2,438.6**
WB member PIC % of grand total	**90.3%**	**79.2%**	**93.0%**	**89.5%**	**99.5%**	**97.5%**	**92.8%**	**83.8%**

Notes:

- Data in this table from Gillett, R. D. (2011) **Fisheries of the Pacific Islands: Regional and National Information**. RAP Publication 2011/003, Food and Agriculture Organisation of the United Nations, Rome, Italy.
- Coastal commercial includes small-scale/ artisanal fishing such as trolling which targets tuna and other pelagic species.
- Offshore fishing is defined as being carried out by vessels that generally fish more than 12 miles offshore, and are industrial, i.e. they land their catch to a fish plant or processing facility.
- Offshore data includes both domestically-based and foreign-based fishing vessels. Some duplication in data recording occurred between categories, such that the volume of offshore catch in 2007 was exaggerated by approximately 9.2%, and the value by 10.1%, over the PI region as a whole.

2.2.3. About 88% (1.18 Mt) of the fishery production from Bank PI member countries came from oceanic fisheries, 10% (140,000t) from coastal fisheries and less than 2% (24,000 tonnes) from freshwater fisheries (Figure 3~~Figure 3~~). A similar pattern can be seen in the first landed value of production: oceanic fisheries account for about 84% ($2 billion) of the production value from Bank PI member countries, coastal fisheries 11.9% ($290 million) and freshwater fisheries about 1% ($23 million).

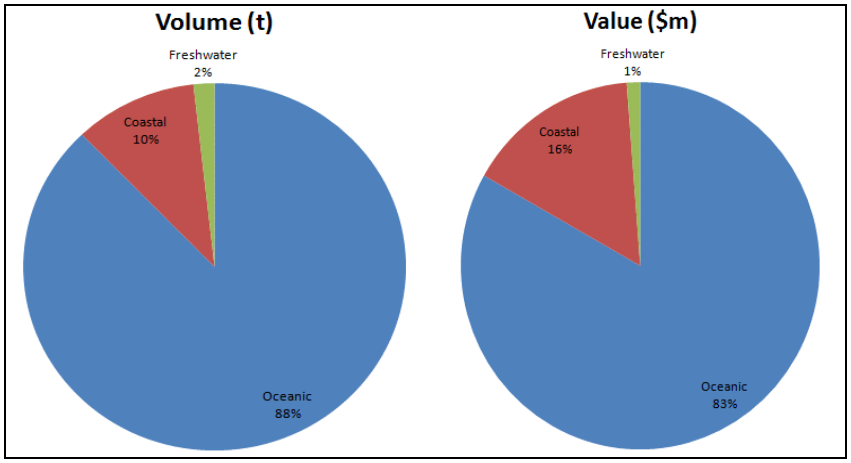

Figure 3: Volume and value of oceanic, coastal and freshwater fishery production from World Bank member PI countries (Source: Gillett (2011))

2.2.4. Comparative data presented in Gillett (2009)[21] indicates that coastal fishery production remained fairly static between 1999 and 2007, while oceanic fishery production increased dramatically, especially in PNG but also in most other PICs. Overall the unit value of coastal fishery products, at $3,350/ t for commercially traded products (or $2,075/ t for both commercial and subsistence fishery products[22]) exceeds that of oceanic fishery products ($1,330/ t) and freshwater fishery products ($949/ t). The relatively high unit value of coastal fishery products is at least partly attributable to the inclusion of beche-de-mer, aquarium fish and other high-priced items.

2.2.5. The next sections provide more information on the main sub-categories of the fisheries sector, all of which present different development opportunities and management needs.

2.3. OCEANIC FISHERIES

2.3.1. Tuna and associated species have been exploited in the Pacific Islands for centuries, both by local fishermen and by DWFN vessels, the latter of which have operated in the region for over 150 years. However the real expansion of the PI tuna fishery began in earnest in the late 1950s, with the development of tuna purse-seining by US fleets then operating in the Eastern Pacific, and its subsequent adaptation to the special conditions (especially the deeper thermocline) prevailing in the western Pacific Ocean. From being essentially non-existent in the 1950s, tuna purse-seining is now the dominant fishing method in the region, and has been embraced by Asian, Latin American and European operators. The more traditional longline fishing method also continues to be important, and is carried out by Asian, US, Australian, New Zealand and domestic PI fleets. Longline catch levels have not changed dramatically over the past 50 years, although the species composition of the catch has varied. The other main tuna fishing method historically used in the region, pole-and-line fishing, is still practiced in its original home in Japan and elsewhere, but has essentially disappeared from the PI region due to its being more operationally complex and less efficient than purse-seining. Trolling and other small-scale fishing methods, mostly carried out by local artisanal fleets, make up a small fraction of the tuna catch, as shown in Figure 4~~Figure 4~~.

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[21] Gillett (2009). **Fisheries in the Economies of Pacific Island Countries and Territories**. Asian Development Bank, Manila, Philippines.

[22] About 70% of PI coastal fishery production is from subsistence fishing activities, whose products are not sold and thus cannot be accurately valued based on real market price. SPC (Bain, 2006) recommends that subsistence fisheries be valued by assigning the products with a 'farm gate price', which is the equivalent to the price for which the products could be sold in the market, less the cost of getting them there.

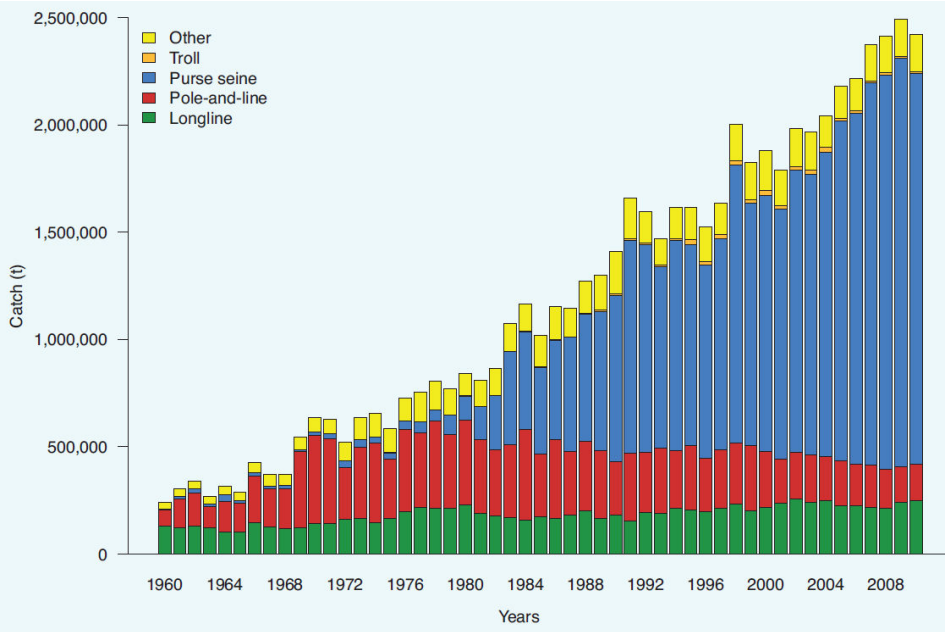

Figure 4: Evolution of WCPO tuna landings by fishing method, 1960 – 2010 (Source: SPC)

2.3.2. Continuing expansion of the tuna fishery in the 1970s and 80s was accompanied by the first scientific programs to assess the region's tuna resources (through SPC), and by PI country efforts to exert greater control over and derive more benefits from them (through FFA). By the 1990s it had become apparent that tuna resources of the PI and SE Asian regions were intimately connected through migration and movement, recruitment, and the fishing operations themselves. The PI fishery is now recognized to be part of an interconnected set of resources and harvesting operations dispersed across the larger western and central Pacific Ocean (WCPO), a region defined by the biological range of the tuna populations and other fish stocks within it. The WCPO extends from Vietnam and Indonesia in the west to French Polynesia in the east, and merges into the Eastern Pacific Ocean (EPO). Nevertheless the WCPO and EPO are biologically distinct, each containing separate stocks of tuna and other fishery species whose interactions are relatively limited.

2.3.3. The interconnected nature of tuna fisheries in SE Asia and the Pacific Islands has been recognized most recently through the agreement of the Western Central Pacific Fisheries Convention, and the subsequent establishment in 2004 of the WCPF Commission (WCPFC). The Commission was established to improve the management of this complex fishery, especially in areas beyond national jurisdiction (ABNJ). The Convention area (Figure 5~~Figure 5~~) encompasses all WCPO coastal states in whose waters the tuna resource is found. Many other nations which are not coastal states of the region but whose fleets carry out fishing in the WCPO are also members of the Commission, or cooperate with it, as noted in section 4.5.

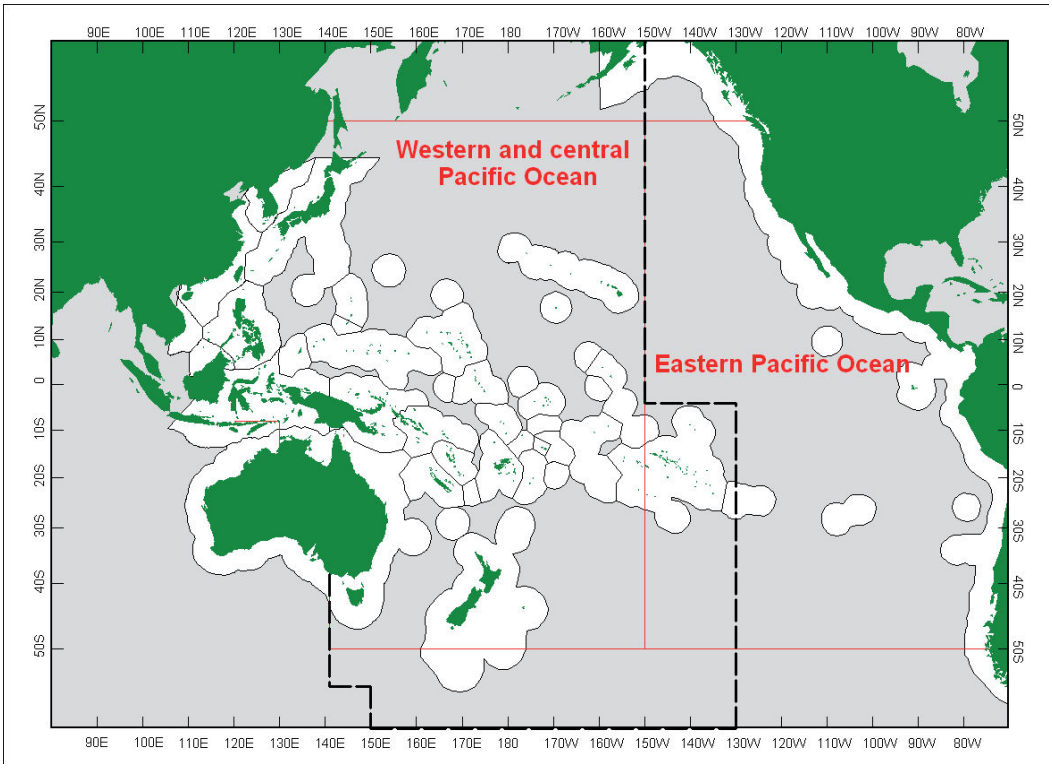

Figure 5: The western and central Pacific Ocean (WCPO), the eastern Pacific Ocean (EPO) and the WCPFC Convention Area boundary (dashed lines) (Source: SPC)

2.3.4. The global tuna catch in 2009 was about 4.2 million tonnes (t), of which 2.5 million t (58%) originated from the WCPO (the balance came from the Indian Ocean (21%), the Eastern Pacific (14%) and the Atlantic (7%)). The WCPO share of global production has increased from 49% in 2005, while the shares contributed by other oceans have fallen correspondingly. The WCPO is thus the most important tuna producing area in the world, and its importance has been increasing in recent years, as WCPO catches have continued to grow while those of other areas have declined. The 2010 WCPO tuna catch was about 2.4 million tonnes per year with a first landed value of some US$ 4.5 billion, as shown in Table 5~~Table 5~~.

Table 5: Tuna fishery catch and value data (2010) for World Bank PI member countries and the WCPO region (source: FFA)

Volumes in tonnes, values in US$ millions								
World Bank PI member country	**Total catch in country waters (all fleets)**				**Total catch by national fleet (all waters)**			
	Volume	**% of total**	**Value**	**% of total**	**Volume**	**% of total**	**Value**	**% of total**
FSM	155,678	6.5%	233.9	5.2%	23,802	1.0%	41.0	0.9%
Fiji	4,832	0.2%	16.7	0.4%	6,450	0.3%	30.4	0.7%
Kiribati	255,685	10.6%	364.6	8.1%	44,399	1.8%	57.9	1.3%
Marshall Islands	25,584	1.1%	58.6	1.3%	56,352	2.3%	75.2	1.7%
Palau	2,590	0.1%	20.1	0.4%	0	0.0%	0	0.0%
PNG	682,240	28.3%	970.2	21.6%	205,496	8.5%	285.9	6.4%
Samoa	2,957	0.1%	10.2	0.2%	3,090	0.1%	11.0	0.2%
Solomon Islands	177,481	7.4%	354.8	7.9%	24,785	1.0%	68.4	1.5%
Tonga	273	0.0%	1.2	0.0%	195	0.0%	0.9	0.0%
Tuvalu	60,233	2.5%	81.0	1.8%	10,582	0.4%	13.8	0.3%
Vanuatu	4,886	0.2%	17.6	0.4%	38,861	1.6%	89.9	2.0%
Sub-total	**1,327,438**	**55.1%**	**2,129.0**	**47.4%**	**414,012**	**17.2%**	**674.5**	**15.0%**
Other PIC	130,252	5.4%	226.2	5.0%	10,816	0.4%	37.0	0.8%
Other (non-PIC)	642,642	26.7%	1,161.5	25.8%	1,982,884	82.4%	3,784.2	84.2%

International waters	262,380	10.9%	978.9	21.8%	-	-		-
Grand total (All fleets, all waters)	**2,407,712**	**100.0%**	**4,495.7**	**100.0%**	**2,407,712**	**100.0%**	**4,495.7**	**100.0%**

Notes:
- Data in this table from FFA (2011) **Value of WCPO Tuna Fisheries – Aug 2011** spreadsheet.
- Data is provisional and does not include by-catch species.
- Catches from the disputed territory of Matthew & Hunter Islands are included in the 'Other PIC' category.

2.3.5. Over 80% of the 2010 tuna catch in Pacific Island waters was taken by foreign fishing vessels (FFV) of DWFN operating under access agreements. About 55% was taken in the EEZ of Bank PI member countries, up from 44% in 2009. A further 11% was taken in international waters, down from 23% in 2009. These recent changes in the distribution of catches are at least partly attributable to PNA management measures requiring DWFN fishing vessels operating in their waters to forego fishing on the high seas. The remaining 27% of the regional catch was taken in the waters of other PI nations (down from 30% in 2009).

2.3.6. There is a widespread perception that PIC are not securing adequate economic returns from the region's tuna resources. A recent study[23] sponsored by the World Bank estimates that, over a 50 year time period, carrying on 'business as usual' in regard to management of the WCPO tuna fishery will generate economic losses in net present value terms of at least US$ 3.4 billion (average $68 million/ year) compared to a more optimal harvesting regime. Although tuna catches within the EEZ of PIC represent over 50% of the WCPO tuna catch by volume, only 17% is taken by PI national fleets, and only 5% is processed in PIC. Fishing and particularly onshore processing activities have the potential to generate employment opportunities, increase export income and create domestic industries servicing the fishing and processing sector. Increasing these benefits is a priority area of development for many PI countries, and has been for many years, but is fraught with challenges. Numerous studies and assessments have been undertaken of barriers that stand in the way of PIC maximizing their returns from the tuna fishery. Some specific issues that have been identified include:

- Natural disadvantages – distance from markets, poor infrastructure, costly utilities – continue to constrain fishery sector investment. Many PIC are high-cost production environments, with diseconomies of scale for air and sea freight in many locations. Lack of fresh water and land for commercial purposes is a problem for onshore development in many places;

- General economic environment and policy frameworks are not conducive to industrial development. There is a generalized lack of consultation with industry, between government departments, and with other stakeholders;

- Poor governance (and sometimes corruption) issues persist. Some influential officials still call for state ownership of tuna enterprises, despite years of experience which shows that this has never been a successful model in the PI region (or most other places);

- Development polices may lead to over-promotion of fishing as an investment opportunity, creating boom/ bust cycles in tuna fishing. There is a need for strong, sound domestic policies to promote sustainable development and underpin regional/ multilateral negotiating positions;

[23] Grafton, R. Q. and T. Kompas (2009). **Tuna Wealth Study: Assessment of the Value of the Tuna Resources in the Western and Central Pacific.** Sustainable Environment Group, Australian National University, Canberra, Australia.

- The environmental, social and political aspects of fisheries management are inadequately addressed, detracting from development benefits and damaging the business environment;

- Heavy reliance on preferential trade access is likely to be eroded in future;

- Lack of business, trading and marketing skills and experience is a problem for domestic fisheries development, as is a lack of human resource capacity in private and public sectors;

- Absence of sanitary and phytosanitary (SPS) controls present a barrier to tuna fishery exports from PI countries, in particular to the EU but increasingly to other markets;

- Sustainability issues are becoming an increasing concern to many developed-country seafood retailers and consumers. Future demand from these markets will increasingly depend on PI countries being able to demonstrate that their resources are effectively managed;

- Illegal, unregulated and unreported fishing remains a concern, accounting for a small but significant part of the WCPO tuna catch;

- Monitoring, control and surveillance (MCS) arrangements, including the deployment of fishery observers, are steadily improving but remain costly and technically challenging for many PI countries;

- The Vessel-Day Scheme (VDS) for purse-seine fishery management has the potential to improve access returns for PI countries, but is not yet comprehensively implemented;

- Climate change may create constraints for some countries and opportunities for others, but these are currently poorly understood.

2.3.7. A major regional study of tuna development opportunities and constraints carried out in 2006[24] noted: 'It is heartening to look at progress to date against a backdrop of (in some cases) poor governance, capacity constraints, stifling bureaucracy and political pressures. That said, much remains to be done... a number of the constraints identified nearly a decade ago in a major ADB study[25] are still constraints in 2005. Clearly, there is no lack of ideas about how PICs may achieve more from their tuna resources. Many seem feasible but have yet to be tried by PIC governments. In some cases, there has tended to be a cycle of identifying a problem – commissioning a report – failing to act on the report – re-identifying the same problem – commissioning a report, and so on. However, given the political, economic and social and cultural background prevailing in PICs it is perhaps not surprising that progress is slow. Many of the issues that remain to be addressed are deep-seated structural issues that will take some time to overcome. While on occasion it is a lack of commitment to try recommendations on the part of officials that is the problem, in other cases

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[24] Barclay, K. and I. Cartwright (2006). **Capturing wealth from tuna: key issues for Pacific Island countries**. FFA Report 07/36. Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

[25] ADB (1997). **The Pacific's Tuna: The Challenge of Investing in Growth.** Asian Development Bank, Manila, Philippines.

the commitment may be there but insurmountable obstacles prevent forward movement. It is one thing for consultants and others to make pronouncements, frequently assuming an open and transparent market economy, on what should or should not be done, and quite another to make them happen'.

2.3.8. The WCPO tuna fishery is now reaching the limits of sustainable exploitation. The 2010 catch was the 2nd highest on record (after 2009) and constituted 60% of the (provisionally estimated) global tuna catch in that year. Purse-seine catches were the 3rd highest on record (after 2009 and 2008) and longline catches were the 2nd highest in the past decade (slightly lower than the 2002 record). Purse-seine skipjack catches were the 2nd highest on record (after 2009), purse-seine yellowfin catches the 3rd highest (after 2008), and longline yellowfin catches were the highest ever recorded (although these data now include Vietnam for the first time). Bigeye catches, however, were 27% less than in 2009 catch and below average for the past 5 years, as shown in Figure 6~~Figure 6~~ below.

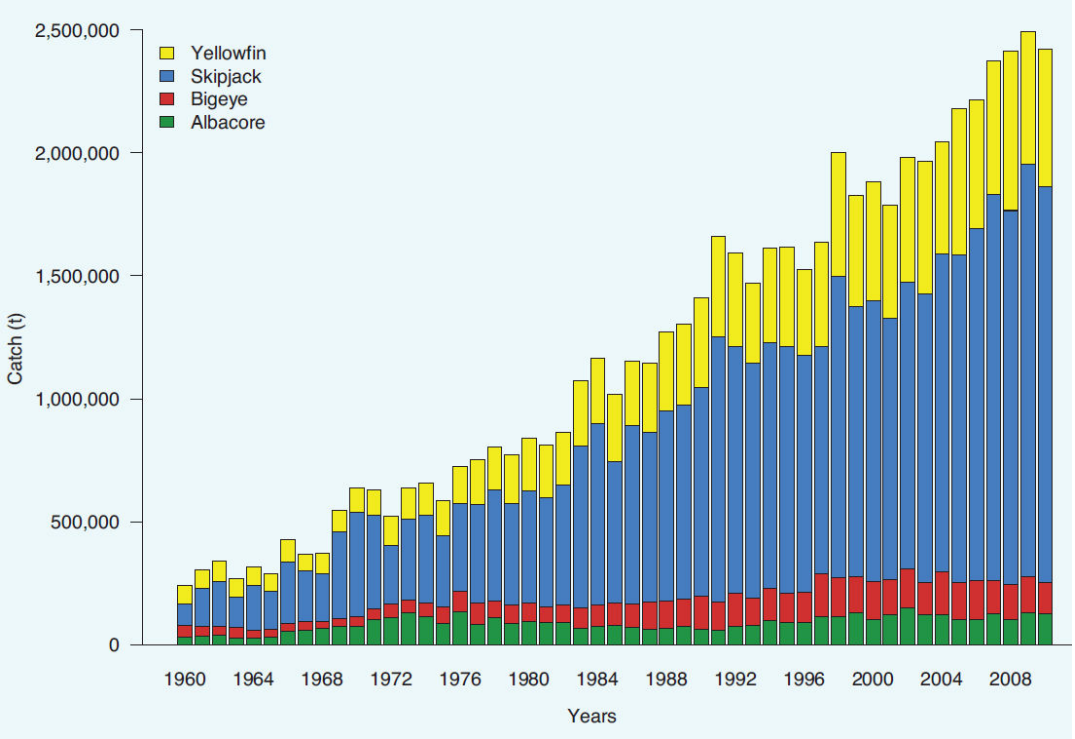

Figure 6: Evolution of WCPO tuna landings by species, 1960 – 2010 (Source: SPC)

2.3.9. Overfishing of bigeye is a particular cause of concern in the region. Although the species is not at risk of extinction, and is never likely to be, fishing effort is too high and the bigeye spawning stock is the most depleted of the four main WCPO tuna species, as illustrated in Figure 7~~Figure 7~~ below.

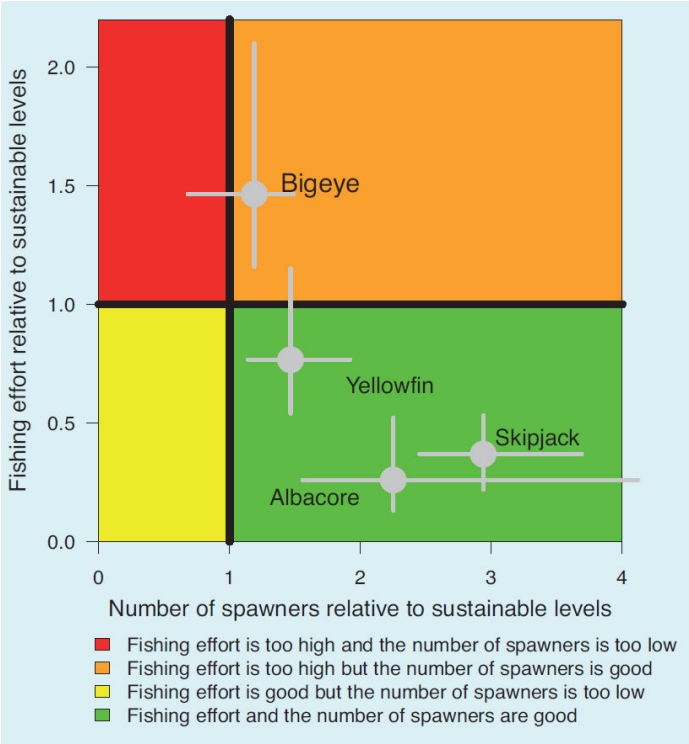

Figure 7: Relationship between fishing effort and spawning stock status for the four main WCPO tuna species (Source: SPC)

2.3.10. A recently issued SPC policy brief[26] notes that 'the WCPO fishery is in the best shape of all the tuna fisheries in the world. On a scale of 1-10, we estimate it as a 6-7, a green traffic light tinged with orange'. However the document recommends management action for all four species, including that bigeye fishing effort be reduced by at least 32% from average 2006-2009 levels to ensure long-term sustainability, that yellowfin fishing effort be limited to around current levels, and that that limits on skipjack fishing be considered to keep this critically important stock at healthy levels, get the best economic returns from the fishery, and provide food security to Pacific Island communities.

2.3.11. This situation presents both threats and opportunities to PI countries. The threat is that, if uncontrolled, the fishery will decline, reducing the actual and potential economic benefits that PI countries derive. However the fact that the fishery is becoming limited by supply rather than by demand, as in the past, presents opportunities for PIC to improve the leverage and control they can exercise over fishery access conditions by DWFN, thereby increasing benefits to themselves. Recent actions by sub-regional groups of resource-owning PI countries with common interests (the Parties to the Nauru Agreement and the Te Vaka Moana group) demonstrate a clear intention to capitalize on these changes to the tuna fishery landscape, while simultaneously implementing management measures intended to contribute to improved stock conservation. As well as the introduction of the VDS, recent measures implemented by the PNA include proxy closure of high seas areas (by requiring that licensed DWFN fishing vessels forego from fishing on the high seas) and seasonal bans on the use of fish aggregation devices (which increase the catch of juvenile bigeye by purse-seiners).

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[26] SPC (2011). **The Western and Central Pacific tuna fishery: 2010 overview and status of stocks**. Policy Brief 12/2012, Secretariat of the Pacific Community, Nouméa, New Caledonia.

2.3.12. Illegal, unregulated and unreported (IUU) fishing is a cause for concern in the region, although the true extent and significance of the problem is only poorly known. A recent global analysis[27] studied a number of different fisheries and regions, comprising about 75% of global fish catches, and estimated that the average annual IUU catch in the WCPO lies between 786,000 t and 1,730,000 t, with a value between US$707 million and US$1,557 million during the 2000-2003 period. The level of IUU fishing in the region has not changed markedly over time – around 38% of catches in the case study fisheries in the early 1980s, compared to 34% in between 2000-2003. However the study noted that much of this related to the operations of Indonesian vessels in the Arafura Sea, and that 'the proportion of illegal catch is low for tunas... unreported catches of tunas are now very small'. Greenpeace[28] has estimated the IUU catch in the Pacific to be between 100,000 and 300,000 t with an estimated value of $134 – $400 million, although this is a general estimate 'assuming a conservative 5-15% IUU'. A 2005 study by MRAG[29] estimates IUU fishery losses in the PNG tuna fishery range from 2% - 25%, but places them closer to the lower end of this range, with an assessed value of around US$15 million in 2001. Another study by the same group[30] states 'In the Western Pacific, the bulk of IUU fishing probably occurs within EEZs and in particular within the waters of FFA members. This is mostly conducted by the vessels of distant water fishing nations, and there is likely to be some fishing by flag of convenience (FOC) vessels in high seas waters. Due to the high value and operating costs for purse seine vessels as well as the increased risk of detection due to their size and method of fishing, it is unlikely that these vessels will conduct large scale illegal (e.g. unlicensed) fishing operations... The majority of IUU activity in tuna fisheries globally is now attributed to longline vessels operating under a wide variety of flags including many open registries. Typically reporting from these open registry states has been poor, but some improvements have been made in recent years through the provision of assistance to the more important open registry states in collecting their flag state statistics, and through port sampling programs'.

2.3.13. The study by Agnew et al. also identifies a strong relationship between IUU fishing, World Bank governance indicators[31], and other measures such as the Corruption Perceptions Index[32], pointing to the benefits of improving governance. In addition it points out that 'illegal fishing creates significant collateral damage to ecosystems: by its very nature, it does not respect national and international actions designed to reduce by-catch and mitigate the incidental mortality of sharks, turtles, birds and marine mammals. Where unreported extraction of fish from major stocks is not included this can bias both single-species stock assessments and ecosystem-based analyses in a dangerous direction of allowing more fishing than would otherwise be thought sustainable'. Finally, the authors note that the solutions most often proposed to eliminate IUU fishing are associated with increased governance and the rule of law – better cooperation between regional management authorities in management and control activities, increased capacity to undertake surveillance and enforcement of port

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27 Agnew, D.J., J. Pearce, G. Pramod, T. Peatman, R. Watson, J. R. Beddington and T. J. Pitcher (2009) **Estimating the Worldwide Extent of Illegal Fishing**. PLoS ONE 4(2): e4570. doi:10.1371/ journal.pone.0004570

28 Greenpeace (2004). **Development without Destruction: Towards Sustainable Pacific Fisheries**. Greenpeace Australia Pacific, Suva, Fiji.

29 MRAG (2005). **Review of Impacts of Illegal, Unreported and Unregulated Fishing on Developing Countries**. Marine Resource Assessment Group, London, UK.

30 MRAG (2005). **IUU Fishing on the High Seas: Impacts on Ecosystems and Future Science Needs**. Marine Resource Assessment Group, London, UK.

31 Kaufmann D, A. Kraay and M. Mastruzzi (2007). **Governance Matters VI: Governance Indicators for 1996–2006**. World Bank Policy Research Working Paper No. 4280.

32 Lambsdorff, J. G. (2003). **Background Paper to the 2003 Corruption Perceptions Index**. Transparency International and University of Passau: http://www.icgg.org/downloads/FD_CPI_2003.pdf.

state control measures, and the imposition of economic sanctions and trade measures. These activities are encouraging, but set in the context of burgeoning demand for food, and particularly protein, there will continue to be enormous pressure on fish stocks over the next 50 years, implying a need for PIC to address the problem of IUU fishing in a precautionary and pro-active manner.

2.3.14. Various national and regional strategies and plans (such as the Forum Regional Tuna Management and Development Strategy (RTMADS), and the Regional MCS Strategy, as well as national tuna fishery development/ management plans) identify actions that PI countries might take, individually or collectively, to overcome some of the barriers described above. The work programs of regional and national agencies, as well as several large donor-funded projects, have been formulated to address specific aspects of them, as described in more detail in sections 4.3 and 4.4.

2.4. COASTAL FISHERIES

2.4.1. Coastal marine resources in PI countries comprise a wide range of fin-fish, invertebrates and plants which together support subsistence and commercial fisheries in all PI countries, benefitting local and national economies and contributing significantly to nutrition, rural livelihoods, food security and dietary health:

- Finfish: on average, approximately one-third of the coastal catch total is comprised of emperors (Lethrinidae), surgeonfish (Acanthuridae) and snappers (Lutjanidae), but a typical small-scale commercial reef fishery in the western and central areas of the region may harvest between 200 and 300 finfish species, although the catch may be dominated by a relatively small number of them. As well as the more long-standing fisheries for shallow-water coastal species, non-traditional fisheries for deep-bottom snappers, aquarium fish and other export-oriented products have developed in some PIC;

- Invertebrates: the most-landed invertebrate food species groups in the region are giant clams (about 40% of total weight) and bêche-de-mer (5% – see Box 1~~Box 1~~ below), followed by much smaller amounts of crabs, lobsters, strombs, turban shells, arc shells, sea urchins, octopus, shoreline gastropods, beach bivalves, and land crabs, as well as trochus and pearl oysters for export[33]. In recent years there have been growing exports of live mollusks, crustaceans, corals and 'live rock' (reef rock covered with attached micro-organisms) for the aquarium trade. The export of wild-caught penaeid shrimps is significant only from PNG.

- Plants: seaweeds, harvested mainly for local food but exported from a few countries, are considered a fishery resource in most PIC.

2.4.2. Several commodities, in particular beche-de-mer, trochus shell and aquarium fish, are harvested exclusively to supply export markets, and contribute little or nothing to local food security, although they may be extremely important in supporting rural livelihoods.

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[33] SPC (2008). **Status Report: Nearshore and Reef Fisheries and Aquaculture**. Secretariat of the Pacific Community, Noumea, New Caledonia.

Box 1: The Pacific Islands beche-de-mer fishery

Beche-de-mer (BDM) is a dried product made from sea cucumbers (about 40 species in several genera of the family Holothuridae) and exported from many tropical developing countries, including the Pacific Islands, to satisfy demand in China, Hong Kong, Singapore and Chinese communities worldwide. The fishery is low-technology – collection is by hand or small boat in shallow waters, processing is by sun-drying or wood-smoking, and the product can be stored and transported without refrigeration.

These characteristics have allowed beche-de-mer fisheries to contribute to rural livelihoods in all the Bank's PI member states for many decades, and in the past they have generated exports whose value in some cases exceeded those from tuna fishing. However the growing demand resulting from economic growth in mainland China, coupled with declining supply caused by overfishing in other major production areas (Philippines, Madagascar, East Africa) has increased pressure on sea cucumber resources in the PI region. These formerly very important export fisheries are now seriously over-exploited in all PI countries and are yielding deeply sub-optimal economic and livelihood benefits throughout the region.

Several PIC have imposed moratoria on harvesting of beche-de-mer in the hope that this will lead to resource recovery. However recent research suggests that, at least for some species, natural recovery will take place extremely slowly, or not at all. Like many coastal invertebrates in PIC, sea cucumbers spawn synchronously and require certain minimum population densities to ensure reproductive success. When the animals are too thinly dispersed because of over-exploitation, reproductive failure occurs.

Enhancement of BDM populations through the release of artificially propagated juveniles or adults has been proposed as a solution to this problem, and has been trialled (so far unsuccessfully) in some PIC. However, even if the technical and economic barriers to this approach can be surmounted, the results will not be sustained and over-exploitation will re-occur unless an effective fishery management framework is also put in place.

The BDM fishery can have significant environmental impacts, including fish kills caused by the toxic stickwater produced when processing, and mangrove deforestation (ten tonnes of timber are needed to smoke one tonne of BDM). Sea cucumbers are responsible for bioturbation of lagoon sediments, and their digestive processes lead to increased local availability of dissolved calcium carbonate for uptake by reef-building corals. Sea cucumber population depletion can lead to gross environmental changes, including development of anoxic seafloor sediment conditions and the encroachment of blue-green algal mats into coralline areas.

2.4.3. Coastal fishery production in Bank PI member countries was estimated at around 163,000 tonnes in 2007, over 60% of which was taken in subsistence operations, as shown in Table 6~~Table 6~~ below.

Table 6: Coastal fishery production and value data (2007) for World Bank PI member countries

World Bank PI member country	Commercial		Subsistence		Freshwater		Total	
	Volume (tonnes)	Value ($ million)	Volume (tonnes)	Value ($ million)	Volume (tonnes)	Value ($ million)	Volume (tonnes)	Value ($ million)
FSM	2,800	7.56	9,800	15.73	1	0.01	12,601	23.30
Fiji	9,500	33.75	17,400	33.81	4,146	4.29	31,046	71.85
Kiribati	7,000	18.49	13,700	28.57	-	-	20,700	47.06
Marshall Islands	950	2.90	2,800	4.31	-	-	3,750	7.21
Palau	865	2.84	1,250	2.51	1	0.01	2,116	5.36
PNG	5,700	27.03	30,000	35.47	17,500	16.55	53,200	79.05
Samoa	4,129	19.56	4,495	14.90	10	0.03	8,634	34.49
Solomon Islands	3,250	3.31	15,000	10.98	2,000	1.46	20,250	15.75
Tonga	3,700	11.29	2,800	6.18	1	0.00	6,501	17.47
Tuvalu	226	0.62	989	2.23	-	-	1,215	2.85
Vanuatu	538	2.18	2,830	5.74	80	0.17	3,448	8.09
Sub-total	**38,658**	**129.51**	**101,064**	**160.45**	**23,739**	**22.53**	**163,461**	**312.49**
Total – PI region	**44,789**	**165.69**	**109,933**	**200.37**	**23,859**	**23.11**	**178,580**	**389.17**
WB member PIC % of grand total	**86.3%**	**78.2%**	**91.9**	**80.1%**	**99.5**	**97.5%**	**91.5%**	**80.3%**

Notes:
- Data in this table from Gillett (2009): **Fisheries in the Economies of Pacific Island Countries and Territories**. Asian Development Bank, Manila, Philippines.
- Data may not be reliable in all cases, especially estimates of subsistence production.

2.4.4. Although they produce less than tuna fisheries in both volume and value terms, coastal fisheries are more directly linked to local economies, especially in rural areas, where they are heavily relied on for food and income.

2.4.5. Many coastal fisheries in the region are now 'mature' – where market opportunities exist coastal fisheries are prone to over-exploitation, which reduces the benefits that they generate. Potential for increased harvests now mainly depends on resources in remote or inaccessible places, where the costs or technical difficulties of transporting the product to market previously constituted barriers to commercialization. This has led to something of a refocusing by PI Fisheries agencies over the past decade or two. In the 1970s and 80s a 'get more fish' philosophy prevailed, in which governments built boats, provided ice, carried out training, undertook marketing of coastal fishery products, and offered grants and subsidies to promote increased harvesting of coastal fishery resources. Now the emphasis has swung towards management, although there is little prior experience of this in many PIC. Systems for limiting or controlling harvests are poorly developed, and in many situations the agencies responsible for management do not have the capability, resources or recognized authority (in regard to communities with traditional user rights over marine resources or spaces) to carry it out effectively.

2.4.6. A recent study[34] used current fishery consumption patterns, combined with the predicted age and sex structures of future urban and rural populations in each PIC to forecast the fish needed in the Pacific in the years ahead to ensure good nutrition (34-37 kg per person per year). The study also used estimates of reef area, fishery productivity estimates and available coastal fishery catch statistics to estimate whether coastal fisheries were likely to meet the projected future demand. The results of the analysis relating to the Bank's PI member countries are summarized in Table 7~~Table 7~~ below.

Table 7: Current coastal fishery production and forecast future fish demand in World Bank PI member countries

Bank member PI country	Sustainable production potential (t/ yr)	Current catches (t/ yr)	Forecast future demand (t/ yr)		Future supply category
			2010	2030	
FSM	45,200	6,900	8,250	9,920	Redistribution
Fiji	30,000	23,250	30,000	37,500	Insufficient
Kiribati	12,500	12,3004	7,730	10,230	Redistribution
Marshall Islands	41,250	2,350	1,780	2,390	Sufficient
Palau	8,900	1,500	930	1,000	Sufficient
PNG	66,600	25,500	108,400	178,900	Insufficient
Samoa	1,400	3,500	15,180	15,600	Insufficient
Solomon Islands	13,800	11,150	18,000	29,900	Insufficient
Tonga	18,500	2,400	3,490	3,900	Redistribution
Tuvalu	4,000	950	1,050	1,050	Redistribution
Vanuatu	3,750	2,500	8,200	13,600	Insufficient

[34] Bell, J. D., M. Kronen, A. Vunisea, W. J. Nash, G. Keeble, A. Demmke, S. Pontifex and S. Andrefouet (2009). **Planning the use of fish for food security in the Pacific**, Marine Policy, Volume 33, Issue 1, January 2009.

Notes:

- Data in this table from Bell et al (2009): **Planning the use of fish for food security in the Pacific**, Marine Policy, Volume 33, Issue 1, January 2009.
- Estimated sustainable Production potential is based on 3 t/ sq. km per yr from the country's coral reef area.
- Future supply categories:
  - Sufficient = production should be sufficient to meet national demand;
  - Redistribution = production should be nationally sufficient but may be locally insufficient;
  - Insufficient = production not likely to meet national demand.

2.4.7. The study predicted that six of the Bank's PI member countries will have a sufficient fish supply to meet local demand by 2030, although in four of those cases it is expected that redistribution of catches within the country will be needed, mainly to satisfy urban populations. In most of these countries coastal fishery production will need to increase over present levels, but the authors estimate that the productive potential exists for this to happen. In the other five countries coastal fisheries will be unable to supply the expected demand, which will exceed the productive potential of the available resources. The authors conclude that these countries need to develop alternative sources of fish supply for their populations, and suggest that the most promising avenues are domestication of tuna fisheries, the use of inshore fish aggregation devices, and pond-based aquaculture of tilapia and other species. As with oceanic fisheries, coastal fisheries have been the subject of scrutiny in the region as PI countries attempt to identify ways to increase or maximize benefits from coastal fisheries, or to prevent their degradation. Some specific issues that have been identified include:

- With a few exceptions, management of coastal fisheries should focus on supporting livelihoods and food security rather than promoting commerce and, especially, exports;

- Management of coastal fisheries is a considerable challenge for most PI countries given the wide dispersal of resources and the communities that exploit them, and the difficulties of enforcing a regulatory-based management approach in the face of traditional user rights;

- Centralized fisheries regulatory systems are progressively being replaced by community-based or co-management arrangements in some countries, often with the involvement of civil society (NGOs or CBOs);

- An ecosystem-based approach to coastal fisheries management is being promoted by technical agencies and the NGO community, and may correspond better with traditional (pre-colonial) resource management systems;

- Statistics and data on coastal fisheries are often limited or of poor quality, making it difficult to identify problems in a timely way, or to assess the impacts of management actions;

- Coastal fishery resources are affected or threatened by agriculture, industry, urban and coastal development, destructive fishing practices and other anthropogenic impacts;

- In some locations future management should consider non-extractive uses, such as marine tourism, which may offer greater economic benefits than harvesting.

- Climate change may result in coral reef degradation and other changes to coastal environments, and in more frequent severe weather events, increasing the need for resilient coastal fishery resources as a social good.

2.4.8. The scale and nature of coastal fisheries, and the resource base that supports them, varies greatly between and within countries, so development opportunities and management needs are highly location-specific.

2.5. AQUACULTURE

2.5.1. Aquaculture is the world's fasting-growing food production sub-sector, and now accounts for about 50% of total seafood production, so is a major focus of World Bank development efforts in other parts of the globe. However despite many years of experimentation and trials in PIC, aquaculture has yet to become a significant contributor to most PI economies. Commodities for which there is some aquaculture in some Bank PI member countries include prawns, tilapia, giant clams, pearls, corals and seaweed, and production from these efforts is summarized in Table 8~~Table 8~~ below.

2.5.2. Although Bank member PIC produce around a third of the region's aquaculture production (both weight and pieces), they account for only 2% of its value. This is because the highest-value aquaculture products are pearls, which are produced mainly by the non-Bank PIC of French Polynesia and Cook Islands (although smaller-scale pearl producers exist in Fiji and Marshall Islands).

2.5.3. SPC has identified a number of commodities for further development or investigation[35], including:

- High feasibility: Trochus, Marine Ornamentals, Freshwater Prawn, Milkfish, Pearl Oyster, Seaweed, Tilapia;
- Medium feasibility: Marine Fin fish, Mud Crab, Sea Cucumber
- Low feasibility: Marine Shrimp

2.5.4. Other commodities, including Sponge, Carp, Redclaw, Crocodile, Abalone, Eels and Rock Lobster have also been evaluated but are considered to be too low-impact to warrant further investigation.

Table 8: Aquaculture production and value data (2007) for World Bank PI member countries

World Bank PI member country	Aquaculture production		
	Volume (tonnes)	Pieces	Farm gate value ($ million)
FSM	-	16,000	0.08
Fiji	247	48,100	1.75
Kiribati	143	100	0.08
Marshall Islands	-	25,000	0.13
Palau	2	3,100	0.05
PNG	200	-	0.68
Samoa	10	-	0.03
Solomon Islands	165	8,202	0.04
Tonga	-	12,334	0.02
Tuvalu	-	-	-
Vanuatu	34	2,500	0.30
Sub-total	**801**	**115,336**	**3.16**
Total – PI region	**2,984**	**305,336**	**146.87**
WB member PIC % of grand total	**26.8%**	**37.8%**	**2.1%**

[35] SPC (2007). **Regional Aquaculture Action Plan**. Secretariat of the Pacific Community, Noumea, New Caledonia.

Notes:
- Data in this table from Gillett (2009): **Fisheries in the Economies of Pacific Island Countries and Territories**. Asian Development Bank, Manila, Philippines.
- Some aquaculture commodities are marketed by weight, others (pearls, corals) by number of pieces.

2.5.5. As noted in section 2.4, a 'fish gap' is forecast in some PIC between the fish that can be supplied by coastal fisheries and the demand likely to arise from increasing populations. Freshwater or brackish-water pond aquaculture is one possible source of additional fish production that might help address the predicted shortfall in supply. Aquaculture development for food security and to increase rural livelihoods is thus a priority sector for a number of PIC, identified in national and regional strategies and plans[36].

2.5.6. A recent review of progress with the promotion of aquaculture in the PI region[37] underlined the need for more realistic economic analysis in support of aquaculture development activities in the region. Many past activities both by PIC and by regional organisations have focused on technical issues but have tended to ignore the economic realities that determine the feasibility or otherwise of development interventions. The study also suggested the following priorities for the future:

- undertaking and/ or facilitating thorough market and market chain research on key commodities/ species with aquaculture potential, at regional, national and local levels;
- building capacity to undertake thorough market research and feasibility studies at local level;
- raising awareness of the real, rather than the ideal nature of mariculture as a business;
- developing a regional hatchery strategy, and where appropriate supporting and facilitating national hatchery strategies;
- supporting and facilitating a more strategic approach to the issue of cost-effective feeds;
- strengthening mariculture development planning within the context of national economic development planning and integrated coastal management.

2.5.7. Aquaculture thus has considerable, though so far unrealized, potential, and is certain to develop further in the PI region, but this will depend on countries creating the conditions for economically viable activities, for which the involvement of the private sector will be important. A key role for governments will be to manage the biosecurity risks, and avoid some of the damaging impacts caused by badly managed aquaculture practices elsewhere in the world.

2.6. POTENTIAL IMPACTS OF CLIMATE CHANGE

2.6.1. Numerous studies (listed in Section 0) have attempted to assess the ways that climate change might affect fisheries and the people that depend on them, and the most appropriate responses to these impacts. In the Pacific Islands, a recent comprehensive review by SPC[38]

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[36] Pickering, T. (2011). **Aquaculture and biodiversity: Developing principles for aquaculture of introduced species**. Working Paper 6, Seventh Heads of Fisheries Meeting (28 Feb - 4 March 2011), Noumea, New Caledonia. Secretariat of the Pacific Community, Noumea, New Caledonia.

[37] Hambrey, J., H. Govan and C. Carleton (2011). **Opportunities for the Development of the Pacific Islands Mariculture Sector**. Secretariat of the Pacific Community, Noumea, New Caledonia.

[38] Bell, J. D., J. E. Johnson and A. J. Hobday (eds.) (2011). **Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change**. Secretariat of the Pacific Community, Noumea, New Caledonia.

states that 'all fisheries and aquaculture activities in the region are likely to be affected by climate change'. The distribution and abundance of tuna are influenced largely by water temperature and the availability of nutrients. Coastal fisheries and the region's major aquaculture operations are based largely on coral reef habitats which are threatened by changes to water temperature, ocean acidification, sea-level rise, and possibly more severe cyclones and storms. Freshwater fisheries have evolved in a climate of heavy rainfall and any major alterations in precipitation can be expected to change the nature of these resources.

2.6.2. Preliminary analysis presented in the SPC document identifies some possible effects of climate change on fisheries and aquaculture production in the Pacific Islands region as follows:

- Changes to the distribution and abundance of tuna: Alterations in ocean temperatures, currents and the food chains that support tuna are projected to affect the location and abundance of tuna species. In particular, future concentrations of skipjack and bigeye tuna are likely to be located further east and at higher latitudes than in the past. This has implications for the long-term management of the region's tuna resources, and for the development and profitability of national industrial fishing fleets and canneries in the WCPO;

- Decline in coral reefs and coastal fisheries: Rising sea surface temperatures and more acidic oceans are projected to have direct impacts on coral reefs and the habitats and food webs they provide for reef fish and invertebrates. Degraded coral reefs are likely to support different types of fish and lower yields of some species. Reduced catches of reef-associated fish will widen the gap between the availability of fish and the protein needed for food security;

- Freshwater fisheries: The projected increases in rainfall for the tropics, and sea level rise, are expected to increase the extent and duration of inundation that governs the life cycles and productivity of fish in the large rivers of PNG. These changes will also affect where and when people can catch fish. Some freshwater fisheries in PIC are based on species that migrate between the sea and fresh water. Changes in either rainfall or sea level may have impacts on these migration patterns with consequences for fisheries production;

- Difficulties in developing aquaculture: Changing patterns of rainfall and more intense storms could flood aquaculture ponds more regularly in some places, and make small pond farming for food security impractical in others due to more frequent droughts. There could also be higher financial risks associated with coastal aquaculture as a result of (1) greater damage to infrastructure and equipment from rising sea levels and the possibility of more severe cyclones and storms; and (2) the effects of higher water temperatures, ocean acidification, reduced salinity and increased incidence of disease on the growth and survival of shrimp, pearl oysters, seaweed and ornamental specimens;

- Increased operating costs: Projections that cyclones and storms could become progressively more intense present increased risks of damage to shore-based facilities and fleets for domestic fishing and processing operations. Fleets operating within the cyclone belt may need to be upgraded to increase their safety. Rising sea level may eventually make many existing wharfs and shore-based facilities unusable. Taken together the costs of repairing and relocating shore-based facilities and of addressing increased risks to occupational health and safety for fishers may compromise the profitability of fishing operations. Such increased costs will need to be taken into account by PIC when considering the balance between promoting local industry development and providing continued fishery access for DWFN.

2.6.3. Clearly the extent and importance of these impacts will vary between countries and localities. Flexibility to respond and adapt to them will become an increasingly important element of national and regional fisheries planning processes.

Fisheries in Pacific Island economies

3.1. LICENSE AND ACCESS FEES

3.1.1. Access fees represent an important source of government revenue for Pacific Island countries, especially the smaller, more fishery-dependent states (over 40% of government revenue in the case of Kiribati, and over 10% in Tuvalu). Table 9~~Table 9~~ below shows estimated 2007 fishery license revenues for World Bank PI member countries.

Table 9: Estimated fishery access fees received by World Bank PI member countries, 2007

Bank PI member country	Access fees (2007)			
	Total (US$)	as % of Government Revenue	Per capita (US$)	% of DWFN catch value
Fiji	256,985	0.03	0	48.7
FSM	14,757,221	10.2	134	8.0
Kiribati	21,361,214	41.7	228	10.9
Marshall Is.	1,953,644	5.4	37	5.5
Palau	1,121,281	3.2	55	6.0
PNG	14,966,216	0.6	2	3.9
Samoa	256,985	0.15	1	513.3
Solomon Is.	11,764,705	4.4	23	7.7
Tonga	132,206	0.2	1	
Tuvalu	3,445,378	11.3	355	? (large)
Vanuatu	1,359,700	1.7	6	8.4
Total	**71,375,535**	**1.69**	**8**	**5.5**

Notes:
- Data in this table from Gillett (2009). **Fisheries in the Economies of Pacific Island Countries and Territories**. Asian Development Bank, Manila, Philippines.

3.1.2. The explanation for the apparently very high fee-to-catch value ratios seen in some countries (Fiji, Samoa) is that, in these cases fishing vessels paid a fee for the opportunity to fish, but then did not utilize it, hence the catch was zero, or very small. The relatively low fee-to-catch ratio seen in PNG, the region's most important tuna producer, is probably a result of that country's domestication policy, which promotes investment, job creation and export generation above license revenues.

3.1.3. In the year under study, access fees to Bank member countries totaled about $71 million, equivalent to 5.5% of the value of the catch on which the fees were paid. This percentage varied greatly among countries, however. Over the longer term, returns to PI countries from access fees are generally said to be around 7-10% of first landed value of the catch, or 3-4% of wholesale value, but this is clearly an average that does not apply to every country or every year. Movement of fish and fleets within the WCPO, changes in exchange rates and market factors all combine to create significant inter-annual variation in access revenues, as shown in Figure 8~~Figure 8~~ below[39].

[39] FFA (2010). **Economic Indicators Update**. Occasional document updated from time to time and posted on www.ffa.int.

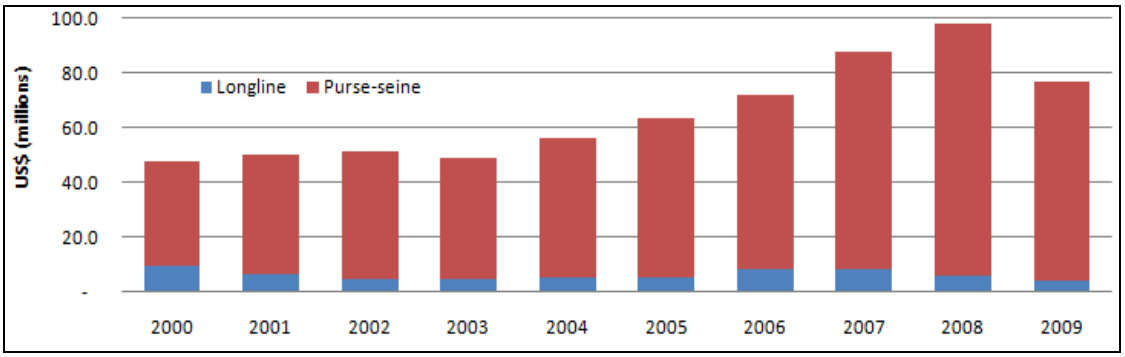

Figure 8: Estimated purse-seine and longline access fees received by FFA member countries between 2000 and 2009 (source: FFA)

3.1.4. FFA member countries (i.e. Bank member PIC plus 4 others) derived about US$88 million in fishery access revenues in 2007, $98 million in 2008, and $77 million in 2009. The most recent data tend to be the least complete, so the apparent decline in 2009 may be an artifact.

3.1.5. A key tool for increasing PIC benefits from fishery access fees is the PNA Vessel-Day Scheme (VDS) for management of the WCPO tuna purse-seine fishery. The VDS is replacing conventional fishery licensing and access arrangements with a market-driven system of allocating individual fishing days to vessels and fleets. The system is both an economic instrument and a sustainability tool: it should increase fishery access revenues for PNA countries by creating a 'scarcity value' which will ultimately push up the price of fishing days, while at the same time limiting fishing effort and ensuring resource sustainability.

3.1.6. The VDS operates by establishing a Total Allowable Effort (TAE), expressed as vessel-days (one day's fishing by a 'standard' purse-seine vessel), which can be revised each year by PNA countries according to scientific advice on the fishery, WCPFC decisions and other information[40]. The TAE is set at a point intended to limit fishing effort to 2004 levels (approximately 30,000 – 33,000 vessel-days)[41], thought to be the amount of effort that will best support maximum sustainable yield in the yellowfin and bigeye fisheries. Within the TAE, Party Allowable Effort (PAE) allocations are calculated based on a pre-determined formula that takes into account each Party's resource endowment over the past 10 years, and the utilization of vessel-days in its water over the past 7 years, based on the most recently-available data and after deducting an allowance for vessels fishing under the FSM Arrangement and the US Treaty. It is the responsibility of each Party to ensure that its PAE is not over-fished, thereby ensuring the integrity of the VDS as a fisheries management measure.

3.1.7. A large amount of the VDS design effort to date has been dedicated to ensuring that it is a robust sustainability tool. The above-referenced PNAO Business Plan notes that 'this work is a necessary, but not sufficient, condition for its success as an economic instrument' and suggests additional measures to be considered by the PNA group in further developing

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40 PNA (2005). **Palau Arrangement for the Management of the Western Pacific Purse-Seine Fishery – Management Scheme (Vessel-Day Scheme) (as amended by the VDS Working Group Meeting, 7 & 13 October 2005)**. Parties to the Nauru Agreement, Honiara, Solomon Islands.

41 Estimates of 2004 fishing effort have varied as data progressively became available. The initial estimate of 33,856 fishing days was subsequently revised to 29,144 days and then again to 30,720 days.

the VDS. Box 2~~Box 2~~, extracted from the Plan, illustrates how the VDS might contribute not only to increased revenues for PNA countries, but also to revealing information about the profitability of fishing operations and the industry's capacity to absorb increases in the cost of fishery access.

3.1.8. Formal adoption of the VDS nominally commenced on 1 December 2007, but the rate of practical implementation among PNA countries was initially variable. However stronger uptake in 2010 and 2011 saw the closure of some fisheries (Nauru, Solomon Islands) when vessel-days were fully utilized, and increased trading of fishing days between PIC. In May 2011 PNA Ministers set a minimum price per vessel-day of US$5,000, effective as of 2012: if the current TAE (36,324 vessel-days) are sold at this price, revenue to PICs will be around $181 million – a significant improvement on the sub-$100 million revenues of recent years. However a recent Bank-supported Business Plan developed for the PNAO[42] estimates that VDS revenues to PIC could easily reach $400 million per year, provided that PNA countries resist the temptation to maximize the number of available vessel-days and instead focus an actions that increase their value. One such action is the creation of a pooling system that allows vessel-days to be used in any PNA EEZ, rather than just the EEZ of the country that issues them, making them inherently more valuable to users.

3.1.9. The purse-seine VDS is still in its formative years and many conceptual and operational issues remain to be ironed out. In addition, PNA and other countries are planning to introduce a similar system for management of the longline fishery, which will be considerably more challenging considering the large number of fleets and vessels (some of which never come ashore in PIC), the more dispersed nature of the fishery and the greater difficulties of ensuring compliance within it.

[42] McClurg, T. (2011). **Business Plan, PNA Office, 2011**. Toroa Strategy Ltd., Wellington, New Zealand.

Box 2: Potential economic benefits of the VDS

Traditionally, the key factor of production in the skipjack tuna supply chain - the right to catch skipjack tuna - has not been priced fairly. Skipjack tuna migrate through many Exclusive Economic Zones (EEZs) and high-seas pockets, and as a result control over this crucial factor of production has been dissipated and weak. In these circumstances, harvesters have only had to consider the costs of vessel operations rather than the full value of the opportunity to fish. This opportunity has been obtained by the payment of licence fees established by negotiation. The information available to the negotiating parties is highly asymmetrical. The coastal state can estimate the value of catch taken in its zone (tonnes of fish x port price) but only the buyer of the licence knows the cost incurred to catch the fish and deliver it to market and the profit made by this activity. Furthermore, the buyer has every incentive to withhold this information from the coastal state. Used correctly, the VDS is a potent means not only of increasing revenues but also of eliciting accurate profit data.

At present, licensing negotiations take the form of a double bluff where harvesters seek to play coastal states off against each other and coastal states do the opposite. History suggests that harvesters (predominantly DWFN and vertically integrated multinational companies) have played this game more successfully than PIC. This is not surprising because of the information asymmetry between the parties. PIC in this situation often try to improve the odds through co-operation with licensing 'competitors' (i.e. other PIC) but to the extent that coastal states wish to ensure that catching or landing occurs in their own EEZ, there are incentives to cheat on fellow PIC in the same market. Double bluff therefore becomes a more complex but little more rewarding game of triple bluff.

Attempts by coastal states to 'guesstimate' the margins achieved by the vertically integrated businesses prominent in the tuna business encounter problems created by the presence of transfer pricing between related harvesting, logistics, processing and marketing businesses. The owners of vertically integrated businesses have influence over where profits are taken and how they are presented. Generally, these incentives are to minimise declared profits and to crystallize them in jurisdictions where corporate taxes are most favourable.

A VDS that allocates a sufficient number of multi-zone vessel days by tender or auction cuts through the fog obscuring margin data at present. The mechanics of this are illustrated in a hypothetical example below.

In this example we ignore multi-zone opportunities and assume that Country A has a Party Allowable Effort (PAE) of 4,000 days and an average catch rate per day of 25t in its EEZ. The gross revenue available from the PAE is (catch (t) x expected average price per tonne of catch ($)). The vessel days are tendered by Country A and a winning bid of $3,000 per day is received from DWFN B. This tells us there is surplus margin in the skipjack supply chain available to B of at least 4,000 days x $3,000t = $12m (6.7%) and that B's costs (including profit, as well as capital servicing on vessels and equipment) could be as much as $168m.

Year 1: Catch: 100,000 tonnes (25t/day average)	**$US**
Revenue ($US1,800/ t)	$180,000,000
Harvesting Costs (including profit)	$168,000,000
Vessel Day Payment ($3,000/Day)	$12,000,000

B is aware that Country A received a number of competitive bids from other DWFN and multinational companies in year 1 and that it faces strong competition to win vessel days in Year 2. B therefore carries out a review of its operations throughout its supply chain to identify possible cost efficiencies and value enhancements. B identifies ways to reduce costs by 1% and increases the value of the catch by 1% in Year 2. B would like to hold on to these margin improvements but in doing so, it knows that it would provide an opportunity for equally efficient competitors to outbid it without any compromise to their normal returns on capital. B therefore bids away its efficiency and value gains in the VDS auction, resulting in a 29% increase in VDS price in year 2. Once again, B is narrowly successful with its tender.

Year 2: Catch: 100,000 tonnes (25t/day average)	**$US**
Revenue ($US1,818/ t)	$181,800,000 (+1%)
Harvesting Costs (including profit)	$166,320,000 (-1%)
Vessel Day Payment ($3,870/Day)	$15,480,000 (+29%)

This simple example illustrates how the VDS:

- Reveals current supply chain costs and margins to vessel day sellers;
- Encourages buyers to seek ongoing cost efficiencies and value improvements;
- Compels vessel day buyers to bid away margin gains that cannot be secured by patents etc. (The risk of not being honest about the existence of 'super-profits' is that buyers will tender an uncompetitive bid and therefore lose not only the margin but the entire gross revenue available from the catching opportunity);
- Indicates to the coastal state the value of its rights to the tuna resource.

Source: Draft RNAO Business Plan 2011

3.2. EMPLOYMENT

- Providing an objective estimate of employment in the PI fisheries sector is difficult because there are a number of ways in which people participate in the sector, including:
    - Formal wage employment on board a fishing vessel, in a processing facility, or in some sort of support facility (boatyard, engine repair shop, etc);
    - Commercial fishing, processing or other activities as owner or worker on a fishing vessel or in another fishery-related operation, which may pay benefits in kind or be a family business;
    - Subsistence fishing.

- Most PI country data on employment only refers to the first category, and occasionally the second, but seldom the third, which is generally by far the largest – there are typically 10-20 times as many people involved in subsistence fishing as in commercial fishery activities. Where estimates have been made of the number of informal fishery sector participants, this has usually been done through one-off surveys, usually quite localized, rather than any more comprehensive data collection system.

- Fishery sub-sectors for which estimates of regional employment (for the entire region, not just Bank PI member countries) are available[43] include:
    - about 45,000 Pacific Islanders appear to be presently involved in commercial fishing.
    - aquaculture may contribute some form of full-time or partial employment for around 25,000 people in the region (mostly in PNG);
    - about 1,200 PI men work on foreign fishing vessels. The major employers are Japan (about 30% of the employment), Korea (24%), United States (15%), and Taiwan (13%);
    - the 14 operational trochus processing factories in the PI employ 213 workers;

- In regard to the tuna catching and processing industry, employment data shows an uptrend between 2002 and 2008, with a slight decrease in 2009[44]. More than 12,000 people are now engaged in the tuna industry, with about 3,400 (including observers) on vessels and almost 8,700 in onshore facilities (6,000 of these latter are in PNG). The figures have progressively increased since 2002 when around 8,500 were employment in the tuna industry (around 3,000 on vessels and 5,500 in onshore facilities).

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[43] Gillett, R. D. (2009) **Fisheries in the Economies of Pacific Island Countries and Territories**. Asian Development Bank, Manila, Philippines.

[44] FFA (2010). **Economic Indicators Update**. Occasional document updated from time to time and posted on www.ffa.int.

- National and regional efforts over the past 15 years have improved knowledge about women's participation in PI fishery activities. Most women formally employed in the fisheries sector work in canneries or other processing facilities, where they predominate. The relative participation in village fishing by sex for all types of fishing combined varies from a 80:20 male: female ratio in Tuvalu, to an approximately 50:50 ratio in PNG, with other Bank member countries evenly distributed along this gradient. This data however masks the distribution of roles within the sector: fishing using boats, nets, spears or any other gear apart from simple hook-and-line is almost universally carried out by men. Women generally harvest by hook-and-line and by reef gleaning, and are responsible for the majority of invertebrate harvests, apart from beche-de-mer, trochus and other export commodities. Women are also responsible for the majority of processing and marketing of catch, although there are always exceptions to these generalizations.

- Gillett (2009) states: 'information on fisheries employment is essential to fisheries management. In the many trade-offs involved, it is important to know how many people will be affected by decisions, both positively and negatively. Debates over the number of people to be affected by fisheries management decisions have occurred in several fisheries of the region, including beche-de-mer (Solomon Islands), spear fishing and trochus harvesting (Fiji), giant clams (Tonga), and export of reef fish (Palau). With the possible exception of employment related to tuna (industrial fishing and processing), few data are available on employment by fishery in any of the countries of the region. The message is that the availability of fisheries employment information by fishery could improve fisheries management decisions'.

EXPORTS

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Table 10

~~Table 10~~ below shows estimated fishery product exports (including aquaculture products) and related information from Bank PI member countries. The most notable feature shown by the table is that fishery product exports are very important to the Bank's PI member countries. In about half the countries (FSM, Kiribati, Palau, Samoa and Tuvalu) fishery product exports in 2007 accounted for more than half of total exports (and 100% in the cases of Palau and Tuvalu). Even where fishery product exports are proportionally less important, their value remains large in nominal terms: PNG (US$101 million), Fiji (US$63 million) and Marshall Islands (US$37 million). Only in PNG is the relative importance of fishery exports dwarfed by those of other products.

Table 10: Value of fishery product exports from World Bank PI member countries

Bank PI member country	Fishery product exports		
	Nominal Value (US$)	% of All exports	Additional information
FSM	12,301,318	76	Exports from offshore fishing account for 91% of exports.
Fiji	63,217,953	12.2	Tuna exports dominate, with other important items being marine ornamentals, beche-de-mer, trochus, and deepwater snapper.
Kiribati	1,893,375	58	Data is for 2006. Aquarium fish is the largest component. Seaweed exports have fallen markedly in recent years.
Marshall Islands	37,342,000	4.3	Data is for 2006. Tuna exports are the most important fishery export of the country. Aquarium fish is the largest component of the coastal exports. Export data in 2005/ and 2006 is distorted by sales of ships. Fishery exports averaged 30% of all exports 2002-2004
Palau	19,000,000	100	Tuna exports dominate, with other important commodities being marine aquarium items, trochus, and coral.
PNG	101,000,000	1.3	Major exports are tuna products (US$88 million) and other fish, lobster, shell, and shrimp (about US$13 million combined).
Samoa	7,634,000	55.3	Since 1997 export bans on several types of fishery products (coral, aquarium fish, and beche-de-mer) have resulted in almost all commercial fishery exports in recent years being tuna products.
Solomon Islands	19,784,631	12	The major commodities are tuna (by far the largest), beche-de-mer, trochus, aquarium products, seaweed, and shark fins.
Tonga	4,861,780	46.9	In 2007 the major exports by value were tuna (29%), live rock (21%), soft coral (12%), snapper (11%), and aquarium fish (10%).
Tuvalu	4,216	100	The only significant exports in recent years are beche-de-mer and (crushed aluminum cans), with the latter actually being a re-export.
Vanuatu	1,230,189	3.4	Data is the average of the 2004-2007 period. Trochus, beche-de-mer, and aquarium products dominate exports.
Sub-total	**268,269,462**	**2.8**	
Total – PI region	**996,332,709**	**n/a**	Data for Guam, Niue, Northern Mariana Islands and Tokelau not available.
WB member PIC % of grand total	**26.9%**	**-**	

Notes:
- Data in this table from Gillett (2009). **Fisheries in the Economies of Pacific Island Countries and Territories**. Asian Development Bank, Manila, Philippines.
- Information compiled from a variety of sources. Official data has been used where available. Values are Free On Board.

- Tuna products are by far the most important by total value. Determining the precise regional value of these or other export products is difficult due to the non-availability in some countries of export statistics disaggregated to the commodity level. In terms of participation in 2007, however, eight of the Bank's 11 PI member countries exported substantial amounts of tuna products. Kiribati and Tuvalu, which (judging by access fees) are located in good tuna fishing grounds, export little or no tuna. The export of aquarium products was significant in 8 of the Bank's PI member countries.

- Despite their national importance, on a regional basis Bank PI member countries account for only a quarter of fishery product exports by value. The three main exporters in 2007 were American Samoa, New Caledonia, and French Polynesia. Just the tuna exports from American Samoa approach the value of *all* the fishery exports in *all* other PIC combined. Of the total US$996 million in fishery exports in 2007, about 75% were from these three territories. Likewise, aquaculture exports were dominated by French Polynesia (pearls - US$123 million) New Caledonia (shrimp - US$107 million), and Cook Islands (pearls - US$1.6 million). These three states were responsible for 23% of fishery product exports from the PI region in 2007.

CONTRIBUTION TO GDP

- There is only limited information on the contribution of the fisheries sector to gross domestic product in Pacific Island countries. The little data that do exist are confounded because different countries' national statistics offices or their equivalents make their calculations in different ways, for instance by classifying commercial and subsistence activities differently, using a variety of incompatible statistical or other techniques, and using information or estimates that that are patently incorrect, often without checking with national or regional fisheries agencies who sometimes hold more reliable data.

- With these caveats in mind, Table 11~~Table 11~~ below provides information on the estimated contribution of fishing to GDP in the Bank's PI member countries. It should be emphasized that the data relate only to fishing, and not to processing, value-adding or other downstream activities. As such they represent a very minimalist estimate of the economic value of the fisheries sector. In addition to official estimates produced by the countries themselves, the table also includes independent re-estimates undertaken to remove methodological inconsistencies between countries and, in some cases, correct errors.

Table 11: Official estimates and independent re-estimates of fishing contribution to GDP in World Bank PI member countries

Bank PI member country	GDP in US$ (current market prices, '000)	Official contribution of fishing to GDP		Re-estimated contribution of fishing to GDP	
		US$ ('000)	Percent	US$ ('000)	Percent
FSM	236,900	n/a	n/a	23,690	10.00%
Fiji	3,289,754	62,505	1.90%	55,926	1.70%
Kiribati	70,752	2,476	3.50%	37,782	53.40%
Marshall Islands	156,125	625	0.40%	41,685	26.70%
Palau	156,614	3,446	2.20%	9,553	6.10%
PNG	5,521,765	149,088	2.70%	171,175	3.10%
Samoa	523,815	28,286	5.40%	32,477	6.20%
Solomon Islands	459,619	27,577	6.00%	31,254	6.80%
Tonga	243,993	10,248	4.20%	12,444	5.10%
Tuvalu	14,723	1,207	8.20%	1,516	10.30%
Vanuatu	499,804	3,998	0.80%	6,497	1.30%
Sub-total	**11,173,864**	**289,456**	**2.59%**	**423,999**	**3.79%**
Total – PI region	**28,133,454**	**358,439**	**1.27%**	**522,706**	**1.86%**
WB member PIC % of grand total	39.7%	80.8%	n/a	81.1%	n/a

Notes:
- Data in this table from Gillett (2009). **Fisheries in the Economies of Pacific Island Countries and Territories**. Asian Development Bank, Manila, Philippines.
- Dollar values of fishing contribution to GDP have been back-calculated using the percentage figures provided by Gillett (2009), and may not be reliable.

- On average, official estimates are that fishing contributes about 2.6% to GDP among Bank member PIC. The re-estimated average figure is around 3.8%, about 50% greater than the official figure. Both figures mask significant variation among countries. Official figures range from less than 1% (Vanuatu) to over 8% Tuvalu, while the re-estimated values range as high 53% (Kiribati) and 26% (Marshall Islands). Fisheries are undoubtedly important in these countries, but the re-estimates may be unreliable because of the way that subsistence fishing activities are treated in their national accounts.

- According to FFA, the overall contribution of tuna fishing to GDP has increased markedly over the years since 1997, when it contributed around US$ 52 million, in parallel with the trend of increasing fleet capacity. Tuna fishing in 2009 contributed $206 million to the economies of FFA member countries, a decrease from the previous year's $263 million on account of lower purse seine value. The overall trend is largely determined by the value of output from purse seine fishing relative to other fishing[45].

- Official statistics, national accounts and economic development initiatives in developing countries generally focus on commercial fisheries, which are often perceived to be the main economic contributors. While small-scale non-commercial fisheries, especially subsistence fisheries on coral reefs and near-shore areas, have been recognized as fundamental for social, cultural and food security reasons, their catches are seldom properly accounted for in official statistics, and hence their contribution to the GDP of a country are often not taken into consideration. Catch time-series reconstructions for small-scale coastal and coral reef fisheries in American Samoa and the Northern Mariana Islands suggested considerable discrepancies between reported (commercial) statistics and reconstructed (commercial plus non-commercial) estimates. Zeller et al (2005) applied a valuation approach used by ADB to the reconstructed coastal and coral reef catch data to estimate total fisheries contributions to national GDP, with value-added estimators for each fisheries sector in combination with available market prices for the period 1982-2002. The analyses suggested that the national contributions of small-scale fisheries to GDP for these two PIC may have been underestimated by a factor of 5 to 1, and indicated that the non-commercial sector plays a far more significant role in national accounts as contributors to GDP than currently assumed[46].

- Gillett (2009) makes a number of simple recommendations on ways that statistical offices could improve estimates of the contribution of fisheries to GDP. These include greater consultation between statistics office and fisheries agency staff, more use of readily available catch, price and value data from regional and national fisheries agencies, and formulation of logical categories of fishing activity that group similar fisheries together. Without improvement of this kind, national economic statistics relating to fisheries will continue not only to be inaccurate and unreliable, but will downgrade the importance of a sector that is economically important to many PIC, and that should be properly recognized in the development planning and monitoring process.

DIETARY HEALTH

- The contribution of fisheries to food security in the Pacific Islands is discussed in more detail in section 2.4. As noted in that section, 6 of the Bank's PI member countries are expected to have a sufficient fish supply to meet local demand by 2030, while the other 5 will need to develop alternative sources of fish supply, possibly through domestication of tuna fisheries, the use of inshore fish aggregation devices, and pond-based aquaculture of tilapia and other species.

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[45] FFA (2010). **Economic Indicators Update**. Occasional document updated from time to time and posted on www.ffa.int.

[46] Zeller, D., S. Booth and D. Pauly (2005). **Fisheries contributions to GDP: Underestimating small-scale fisheries in the Pacific**. Working paper # 2005-05, Fisheries Centre, University of British Columbia, Vancouver, Canada.

- As regards dietary health, fish is the main source of animal protein in many parts of the Pacific, since there are no large indigenous land animals readily found. Pigs are frequently raised, but are generally used on ceremonial occasions, and do not form a workday staple. Much the same situation applies to poultry, although to a lesser extent. Vegetable protein is found in some staples, particularly certain varieties of sweet potato and taro; but to get enough for bodily needs, large quantities must be consumed. It is almost impossible for very young children to obtain enough protein from vegetable staples because they literally cannot eat large enough quantities[47].

- The World Health Organisation (WHO) recommends that daily protein intake for good nutrition should be about 0.7 g of protein per kg of body weight per day, derived from a variety of sources to prevent micronutrient deficiencies. Based on the predicted age structure of populations in the Pacific until 2030, age-weight relationships typical of the region, and the fact that fresh fish consists of about 20% protein, annual average per capita fish consumption of 34-37 kg would be required to provide 50% of required dietary protein. Given the limited range of other forms of animal and vegetable protein and the strong tradition of eating fresh fish in the region, as well as the nutritional and health benefits of fish, this would be an appropriate long-term target for many PIC to plan for[48].

- The world average per capita fishery product consumption rate is 16.5 kg/ person/ year[49]. All of the Bank PI member countries exceed this rate, some by a large margin, as shown in Table 12~~Table 12~~ below.

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47 Martin, L. J. (1961). **Fish and its Uses: Some Health Education Aspects**. Technical Paper 1, 2nd Fisheries Technical Meeting, 5 – 13 February 1962, Noumea, New Caledonia. South Pacific Commission, Noumea, New Caledonia.

48 Bell, J. D., M. Kronen, A. Vunisea, W. J. Nash, G. Keeble, A. Demmke, S. Pontifex and S. Andrefouet (2009). **Planning the use of fish for food security in the Pacific**, Marine Policy, Volume 33, Issue 1, January 2009.

49 Vannuccini, S. (2005). **Implications for FAO Fish Consumption Statistics of Trash Fish Utilisation in the Asia-Pacific Region**. Paper Presented at The Regional Workshop on Low Value and "Trash Fish" in the Asia - Pacific Region, 7-9 June 2005, Hanoi, Vietnam. Food and Agriculture Organisation of the United Nations, Rome, Italy.

Table 12: Estimated annual per capita fishery product consumption for World Bank PI member countries

Bank PI member country	Range of fish consumption estimates (kg/ person/ year)
FSM	72.0 – 114.0
Fiji	44.0 – 62.0
Kiribati	72.0 – 207.0
Marshall Islands	38.9 – 59.0
Palau	84.0 – 135.0
PNG	18.2 – 24.9
Samoa	46.3 – 71.0
Solomon Islands	32.2 – 32.7
Tonga	25.2 – 30.0
Tuvalu	85.0 – 146.0
Vanuatu	15.9 – 25.7

Notes:

- Data in this table from Gillett and Lightfoot (2001): Gillett, RD. and C. Lightfoot (2001). **The Contribution of Fisheries to the Economies of Pacific Island Countries**. Pacific Studies Series, Asian Development Bank/ World Bank/ Forum Fisheries Agency/ Secretariat of the Pacific Community.
- Information is compiled from a variety of surveys carried out over a number of years

- The table indicates a trend for small-island countries to have high fish consumption rates, while those in large-island countries are lower. This is linked to the ratio of coastline length to land area, and the relative ease of access to coastal resources, as discussed in section 1. The exceptions to this generalization are Tonga, where studies suggest relatively low fish consumption rates, and Palau, where the rate is exceptionally high. Four countries (PNG, Solomon Islands, Tonga and Vanuatu) currently fall below the 34-37 kg/ year consumption threshold that would provide 50% of annual protein requirements.

- The above-referenced study by Bell et al. made the following additional observations:
  - Many rural communities depend heavily on fish. In Polynesia, fish consumption by rural communities was twice that in urban centers. In Micronesia, differences between urban and rural areas were less pronounced, but large consumption differences between coastal communities and urban dwellers were indicated. Inland communities in PNG and to some extent Solomon Islands had poor access to fish and thus ate less fish than their urban counterparts, but many coastal fishing communities in Melanesia consumed as much fish as rural coastal people in Micronesia and Polynesia;

  - Rural communities have a high dependence on subsistence fishing. For most PIC, 60-90% of fish consumed in rural areas was caught by the household. The high proportions of national populations residing in rural areas, and substantial dependence on subsistence fishing even in urban areas, also resulted in high levels of subsistence fishing nationwide for many PIC;

  - Fresh fish dominates the diet. For the great majority of PIC, a consequence of the high levels of subsistence fishing was that fresh fish dominated national fish consumption in general, and rural consumption in particular. Indeed, in rural areas fresh fish often contributed over 80% of fish consumption. Similar patterns applied to urban areas, where fresh fish usually accounted for more than 75% of consumption. The remainder comprised canned fish;

- Fish provide the majority of animal protein – not surprisingly, given the high levels of fish consumption and the limited opportunities for agriculture and animal husbandry in many PIC.

▪ These patterns of fish consumption are similar to those reported previously from the region, and demonstrate that PIC continue to have a high dependence on fresh fish. Many communities in the Pacific rely heavily on subsistence fishing and have limited access to other sources of protein.

OTHER BENEFITS

▪ Fisheries can make direct contributions to national economies through access revenues, exports, job creation, food security and dietary health. However well-managed marine resources have the potential to contribute to PI economies in other non-monetary way that are harder to value. These include:

- Recreation and ecotourism: various studies have demonstrated that the economic worth of a kilo of fish caught by recreational fishing recreational is tens or hundreds of times greater than that of the same fish caught by commercial fishing operations. Where such fishing is carried out by international tourists, it can represent a large inflow of foreign capital into the local economy. Non-extractive tourism activities such as SCUBA diving and underwater photography are even more productive in that the resource remains unaffected by them;

- Storm threat protection: healthy coral reefs provide protection from storm waves, dissipating their force before they reach inshore waters. Healthy mangrove forests and other coastal wetlands provide a similar function on the shoreline itself, dissipating wave energy and retaining sediments to prevent coastal erosion;

- Attenuation of pollution: healthy coastal environments have a greater capacity to absorb and neutralize pollutants, especially organic waste from coastal communities;

- Carbon storage: Mangrove forests and other coastal wetlands sequester atmospheric carbon dioxide and rank among the most intense carbon sinks available. Protection of these environments will contribute to mitigating the impacts of climate change;

- Social, cultural and existence values: aesthetic appreciation of marine resources and environments is a social asset in itself, and one that will be marred by resource depletion and environmental degradation. Portions of a lagoon or coral reef may be of particular importance to local residents for cultural or spiritual reasons. There is a value attached to the inalienable nature of the community's association with the coastal environment[50].

[50] Spurgeon, J. P. G. (1992). **The economic valuation of coral reefs**. Mar. Poll. Bull., 24 (11): 529-536.

- In most cases effective management of fisheries is critical for preserving these benefits, whereas poor fisheries management will weaken or negate them. Some examples include:
    - Use of destructive fishing methods is common in the Pacific. At the most basic, gleaning may be carried out by walking the reef with a hammer and crowbar to break rocks when collecting reef animals. Fish drives, where large groups of people walk the reef, can cause significant coral damage. Fishing with derris or other traditional poisons is widespread and kills many more juveniles of fish and invertebrates than it catches. Dynamite fishing, often using recovered WW-II ordinance or explosives illicitly obtained from mines and construction sites, is common in some areas and has obvious detrimental impacts on the marine environment;

    - Overharvesting of marine resources can have significant environmental impacts, for example in the case of beche-de-mer fishing. Sea cucumbers perturb and aerate sediments of the lagoon floor: in their absence sediments can become anoxic and colonized with blue-green algal mats, which can then encroach on adjacent corals. Overfishing of sea cucumbers is also thought to reduce the amount of dissolved calcium carbonate in the seawater and available to reef building corals, since this is a by-product of sea cucumbers' sediment digestion. These factors in turn lead to coral die-back, altered fish populations, and a reduced ability of the coastal environment to provide the services listed above. In addition, traditional methods of beche-de-mer production utilize large amount of firewood, usually cut from mangrove forests, and produce toxins which are often discharged into the lagoon, killing fish and invertebrates.

- There are many other examples of the ways in which failure to effectively manage fisheries will not only reduce the direct contributions of those fisheries to the economy, but will also have a detrimental impact on other services provided by the marine environment. Essentially, an ecosystem approach is needed whereby the effects of fisheries management decisions on other sectors are considered – and, conversely, where account is taken of the impacts that other sectors can have on fisheries through a process of integrated coastal management.

The Pacific Islands regional institutional framework

4.1. REGIONALISM

▪ The Pacific Islands have for many years been characterized by a high degree of regionalism. As noted by the Pacific 2020 study[51], the small size and limited capacity of most PI countries dictate that regional cooperation and integration are not options but necessities in many cases. Regionalism provides opportunities for harmonized responses to common or shared problems, exchange of information and experience, and efficiencies of scale. This is particularly the case in regard to the region's oceanic fisheries, which traverse the boundaries of all PIC.

▪ The Pacific Plan[52] (described in more detail in Appendix 1) identifies several different forms of regionalism relevant to PIC:

- Regional Cooperation: Setting up dialogues or processes between governments. Regional cooperation means services (e.g. health, statistics, audit, etc) are provided nationally, but often with increased coordination of policies between countries. This is either based on an agreed strategy or arranged through a coordinating body;

- Regional Provision of Public Goods and Services: Pooling national services (e.g. customs, health, education, sport, etc) at the regional level. Governments are freed from daily management of some services and can concentrate on service delivery in other areas, and policy development;

- Regional Integration: Lowering market barriers between countries. Barriers may be physical (e.g. borders) or technical (e.g. quarantine measures, import taxes, passport requirements, etc). Regional integration can improve access for Pacific businesses to consumers, increasing economies of scale, reducing prices and making more goods available.

▪ The Pacific Plan further notes that regionalism can reduce the costs of providing a service if the number of people benefiting from the service is increased, resulting in economies of scale in both the public and private sectors. On the other hand, regionalism can also increase costs, for instance, by requiring the movement of goods, services and people over long distances. These 'diseconomies of isolation' are particularly relevant in a vast area such as the Pacific. When countries work regionally to achieve a goal, economies of scale must be balanced against diseconomies of isolation. The best approach may in some instances be sub-regional or a grouping of a few countries to deliver a service.

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[51] AusAID (2006). **Pacific 2020: Challenges and Opportunities for Growth**. Australian Agency for International Development, Canberra, ACT, Australia.

[52] Forum Secretariat (2005). **The Pacific Plan for Strengthening Regional Cooperation and Integration**. Pacific Islands Forum Secretariat, Suva, Fiji.

- The advantages of cooperation and collaboration were recognized in the early days of the region's modern history when in 1947 the colonial powers then occupying the Pacific Islands established the South Pacific Commission as a shared technical advisory service providing support in agriculture, health, education and other fields. Since that time individual PI countries and territories have acceded to the Treaty establishing the now re-named Secretariat of the Pacific Community in their own right. Those PI countries that have gained independence from their former colonial occupiers have also established new organisations designed to serve their political and economic interests. Those most relevant to the fisheries sector are (in alphabetical order, and with the key agencies underlined):
    - Pacific Islands Forum Fisheries Agency (FFA);
    - Pacific Islands Forum Secretariat (PIFS, or ForSec);
    - Secretariat of the Pacific Islands Regional Environment Program (SPREP);
    - Secretariat of the Pacific Community (SPC);
    - South Pacific Bureau for Applied Geoscience (SOPAC, which became a division of SPC on 1
    - January 2011); and
    - University of the South Pacific (USP)*.

- There are also three recently-formed sub-regional country groupings with a specific interest in fisheries: the Office of the Parties to the Nauru Agreement (PNAO); the Melanesian Spearhead Group (MSG) Secretariat Fisheries Technical Advisory Group (MSG-FTAC); and the Te Vaka Moana (TVM) Arrangement between certain Polynesian states. However only the first of these has so far become a player of any significance in the regional fisheries-sector institutional framework. Although not a regional organisation, the Western Central Pacific Fisheries Commission (WCPFC) clearly has a major influence on regional fishery management arrangements.

- Many other international agencies of various types also operate in the region, including inter-governmental organisations such as the various United Nations (UN) agencies, specialized international research or technical agencies, non-governmental organisations (NGO), and others. Documenting the roles of all these numerous agencies is beyond the scope of the present document, but those with active involvement in the fisheries sector are briefly described later in this chapter.

4.2. POLICY AND PLANNING

- In recent years PIC and their development partners have worked together to improve the performance of governments, donors, lenders and other stakeholders in implementing reforms and delivering development projects, including through strengthening national and regional strategic planning, monitoring and reporting arrangements. At the national level, each PIC prepares a National Development Plan or equivalent document, which lays out a 4- or 5-year road map of the country's goals and strategies for growth or improvement in the major social and economic sectors, including fisheries. In some cases these are supplemented by additional fishery-related planning documents – all PIC have a Tuna Fishery Development and Management Plan or its equivalent, and some have management plans for other fisheries, as well as plans of action for sharks and sensitive marine species. Bilateral and multilateral development partners are generally guided by their own Country Assistance Plans or equivalent documents, again covering multi-year periods and designed in partnership with beneficiary countries to be consistent with national strategies and with each other. Some regional organisations now follow a similar procedure, working with their members to develop multi-year joint action or assistance strategies at both national and regional or sub-regional levels.

- Since 2004 Forum leaders' statements on regional human and economic development issues and resource management concerns, including fisheries, have been integrated into the Pacific Plan, which provides guidance and a coordination mechanism to PI countries, regional organisations, donors and other development partners. The Plan (Appendix 1) is built on four 'pillars' – Economic growth, Sustainable Development, Good Governance and Security Through Regionalism.

- Forum leaders have made several declarations that identify the region's priorities and concerns for the fisheries sector, including:
    - the Kalibobo Roadmap (2005) and Nadi Decision (2006):
    - the Vava'u Communiqué and Declaration (2007);
    - the Alofi Communiqué (2008);
    - the Cairns Communiqué (2009);
    - the Vanuatu Communiqué (2010);
    - the Waiheke Declaration (2011).

- The fisheries-related policy statements made in these declarations are summarized in Box 3. The most comprehensive and far-reaching of these statements was the Vava'u Declaration on Fisheries 'Our Fish, Our Future', the full text of which is shown at Appendix 4.

- Forum Leaders' statements on fisheries and other topics provide important guidance for development partners and, especially, for Pacific Island Regional Organisations, and have led directly to the formulation of regional fisheries development strategies and plans. These include the Regional Tuna Management and Development Strategy 2009-2014, and the Regional Fishery Monitoring, Control and Surveillance Strategy 2010-2015, both mediated by FFA. SPC has formulated a Regional Aquaculture Strategy, and has mediated the development of The Apia Policy, which provides PIC with guidelines on coastal fishery management.

Box 3: Recent Regional Policy Declarations on Fisheries

Kalibobo Roadmap (2005) and Nadi Decisions (2006). ***Leaders agreed to:***

- encourage effective fisheries development, including value-adding activities;
- develop and implement national and regional conservation and management measures for the sustainable utilisation of fisheries resources.

Vava'u Communiqué and Declaration (2007). ***Leaders agreed to:***

- promote domestic fisheries, in particular national tuna industries;
- apply a long-term strategic approach to Pacific fisheries, and to tuna species in particular, to ensure that these resources are effectively managed;
- commit to the conservation and sustainable management of highly migratory tuna resources;
- support SPC's current tuna tagging initiative;
- commit to the protection of high-seas biodiversity and the conservation and management of non-highly migratory fish stocks in the Pacific Ocean;
- develop and manage coastal and inshore fisheries and aquaculture to support food security, sustainable livelihoods and economic growth; and
- develop policies and plans for biosecurity.

Alofi Communiqué (2008). ***Leaders called on PI regional organisations to supplement national capacity and support regional action with a focus on:***

- developing effectively managed and sustainable national tuna industries;
- implementing comprehensive fisheries conservation measures to protect stock levels;
- expediting improved regional monitoring, control and surveillance; and
- supporting the sustainable and effective management of national coastal fisheries and stock assessments and the expansion of aquaculture for future food security.

Cairns Communiqué (2009). ***Leaders agreed to:***

- work to ensure that effective measures to address overfishing are adopted by the Western and Central Pacific Fisheries Commission;
- develop a strong monitoring control and surveillance framework; and
- develop legal arrangements to strengthen regional efforts to improve fisheries surveillance and enforcement.

Vanuatu Communique (2010):

- ***Leaders welcomed***: the achievements made on strengthened regional approaches to fisheries conservation and management through the collaborative work of FFA and SPC and more recently through the efforts of the Parties to the Nauru Agreement (PNA); and
- the presentation from the Directors-General of SPC and FFA of the summary report of 'The future of Pacific Island fisheries' and reaffirmed the importance of managing this resource sustainably and responsibly to the optimum benefit of the peoples of the Pacific.
- ***Leaders noted***: that fisheries resources of the Pacific represent a major source of food and income for PICTs and for many Pacific people are the main prospect for sustainable economic development. The maximisation of return from these resources and their sustainable conservation and management is therefore fundamental to the long-term socio-economic well-being and stability of the region, as is the protection of those resources; and
- the work undertaken by FFA, SPC, and PNA on fisheries.
- ***Leaders tasked***: the relevant regional organisations to explore options for optimising fisheries commercialisation to increase fisheries revenue beyond licensing fees; and
- these regional organisations to prepare and submit through the Forum Secretariat a report on fisheries commercialisation for further consideration by the FEMM (Forum Economic Ministers Meeting) 2010.
- ***Leaders encouraged***: the formation of new regional partnerships between Forum members on commercial fisheries enterprises, especially in processing activities under a new Forum process on fisheries commercialisation to be developed by FFA and SPC.

Waiheke Declaration (2011). ***Leaders pledged to:***

- Pursue improved sustainable returns to Pacific island economies from the abundant natural resources, particularly fisheries, available from the wealth of our shared Pacific Sea of Islands;
- Foster an environment that supports increased investment, productive activity and a strengthened private sector, particularly in relation to fisheries, agriculture and tourism, to generate income and employment;
- Address the persistent problem of illegal, unregulated and unreported fishing in the Pacific through enhancing the effectiveness of regional monitoring, control and surveillance activities.

4.3. PACIFIC ISLAND REGIONAL ORGANISATIONS

- From the viewpoint of the fisheries sector, the most significant regional agencies are:
  - Secretariat of the Pacific Community (SPC). The oldest of the regional agencies, SPC undertook its first fisheries-related activities in 1957. The fisheries program is now divided into 2 main components. The Oceanic Fisheries Program (OFP), which arose from a regional tuna tagging study carried out in the late 70s, is the region's fishery science and monitoring facility which collects and collates catch and effort data, observer reports and other information on oceanic fisheries from SPC member countries (including DWFN vessels fishing under license) and provides analyses and stock assessments to them. The OFP is now contracted as the science service provider to the WCPFC (see below), and derives a good part of its income from this source. The Coastal Fisheries Program (CFP) focused initially on the development and expansion of national fisheries, providing information, training, and technical assistance on fishing and post-harvest technology and techniques. While still fulfilling this role, since the mid-80s the CFP has responded to the progressive maturation of inshore fisheries by expanding its role in coastal fishery science and management. It now supports national efforts to assess resources, establish community-based fisheries initiatives, improve coastal resource management arrangements, and promote aquaculture.

  - Pacific Islands Forum Fisheries Agency (FFA). Originally established in 1978 as a division of the Pacific Islands Forum, FFA is now an independent agency in its own right which provides economic and technical services to its member countries in regard to fisheries development and management, primarily those concerning oceanic fisheries. FFA has been instrumental in supporting countries in their negotiations with foreign fishing interests, mediating the development of various regional treaties and access arrangements, and operating the regional register of fishing vessels in good standing and the regional vessel monitoring system on behalf of PI member states. FFA also aims to promote domestic fishery development and investment, and other economic growth opportunities, as well as supporting its member countries in developing regional, sub-regional and national fishery management arrangements and participating effectively in the WCPFC. Until the formation of the PNA Office in 2010, FFA provided secretariat services to the PNA group.

- Other agencies that have less direct but still noteworthy involvement in the fisheries sector include:
  - Pacific Islands Forum Secretariat (PIFS) deals primarily with regional policy and economic matters, and mainly leaves fisheries-related work to FFA. Forum leaders periodically address fisheries policy matters, and other regional agencies (including FFA and SPC) regularly provide progress reports to the Forum and take guidance from it;

  - Secretariat of the Pacific Regional Environment Program (SPREP) promotes improved environmental stewardship in PI countries, and mediates PI activities under several international conventions, including the Convention on Biological Diversity (CBD). Fishery-relevant work program areas include coastal zone management, coral reef conservation, protection of turtles and other and sensitive

marine species, and assessing and mitigating the environmental impacts of climate change;

- South Pacific Bureau for Applied Geoscience (SOPAC): formerly a separate organisation, SOPAC was restructured as a division of SPC in 2010. Under this new arrangement SOPAC continues to provide technical advice to PI countries in regard to non-living marine resources (especially minerals and aggregates), coastal hydrography, ocean and coastal mapping and delimitation of maritime boundaries;

- University of the South Pacific: USP provides the region with tertiary education relevant to fisheries and oceans. In the past the University's Institute of Marine Resources has undertaken fishery research and investigations, although this has been somewhat reduced in recent years. The Institute of Applied Sciences undertakes assessment and monitoring of the marine environment, and provides laboratory services in support of fishery food safety controls.

▪ The differential memberships and overlapping mandates of the various regional agencies have at times led to duplication of effort or unclear responsibilities among them. In the past, SPC and FFA have occasionally become competitors in specific technical areas which appear to fall into the mandate of both agencies. SPREP, with its broad environmental charter, is sometimes involved in aspects of marine conservation that impinge on the work of SPC or FFA. To resolve these issues, in the early 1990s SPC and FFA established a coordination mechanism specifically to harmonize their fisheries-related work programs. This subsequently evolved into the Council of Regional Organisations of the Pacific (CROP), an inter-agency committee which aims to leverage synergies, improve efficiency and avoid duplication in all sectors and disciplines, which was formalized by the PIF in 1998. Heads of CROP organisations now meet once each year, but the main consultative work has been assigned to a series of sectoral working groups on Education, Health, the Marine Sector, Information Technology and other topics, whose responsibilities have grown to include the development of regional projects and policy initiatives. The Marine Sector Working Group is responsible for the development of the Pacific Islands Regional Ocean Policy (PIROP), described more fully in Appendix 2, and has contributed to the Pacific Oceanscape initiative (Appendix 3). The MSWG and other CROP working groups also provide technical advice to PIF intergovernmental working groups taking part in United Nations and other international negotiations and processes.

4.4. SUB-REGIONAL ORGANISATIONS

▪ A number of new sub-regional fisheries cooperation arrangements have also been established, some quite recently, with the express purpose of promoting collaboration among smaller groups of countries having shared interests that are not common to the region as a whole:

- Parties to the Nauru Agreement Office (PNAO): The EEZ of PNA countries[53] contain extensive tuna resources which currently produce well over 50% of the WCPO tuna catch of some 2.4 million tonnes (2010 data), and about 25% of the

[53] Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Palau, Papua New Guinea, Solomon Islands and Tuvalu.

world's canned tuna supply. The Nauru Agreement[54] was signed in 1982, at which time secretariat services were provided to the PNA by FFA. However in January 2010 the PNAO was established to provide greater support to PNA countries in their efforts to collectively leverage greater economic benefits from fisheries, particularly the tuna purse-seine fishery, which takes place almost entirely in their waters and adjacent ABNJ. PNAO initiatives, which are at varying stages of development, include: introduction of higher-yielding access arrangements, notably though the purse-seine VDS (see section 1); obligatory placing of PI crew on DWFN fishing vessels operating in PNA waters; commercial joint-ventures between PNA and foreign entities; and other actions yet to be developed. Unusually for a PI organisation, the PNAO is expected to function semi-commercially rather than be supported by contributions from its member countries. Although the PNAO appears to have good potential to generate additional benefits for PNA countries, limited manpower, an over-ambitious mandate and conflicting national priorities have hindered it to date. All PNA are also FFA member countries, and there have been concerns about the division of responsibilities between the two agencies, which are still not entirely clear. During the development of the FES the Bank has supported the PNAO in regard to the development of a Business Plan to help guide its future operations;

- Te Vaka Moana (TVM) is a grouping of Polynesian states[55] which have recently (2010) signed a formal fisheries cooperation agreement. A major focal area of collaboration relates to leveraging benefits from the southern longline tuna fishery, much of which takes place in their EEZ or adjacent high seas. Although this fishery does not approach the scale of the PNA purse-seine fishery, there are undoubtedly benefits to be gained through cooperation among TVM countries in the areas defined by the treaty, which include information-sharing, harmonization of management measures, improved MCS, and fisheries development;

- The Melanesian Spearhead Group (MSG) Fisheries Technical Advisory Committee (FTAC). After coming into existence as a political grouping of Melanesian states[56] in 1983, the MSG was formally established by treaty in 2007, and has recently begun to take an interest in fisheries cooperation. The FTAC has so far only met twice (April 2010 and April 2011) and its role and functions are still being clarified. The 2010 meeting identified a number of areas of common concern in regard to oceanic and coastal fisheries management, aquaculture, and development and downstream processing of fishery products. MSG leaders subsequently noted that if there were specific issues not covered by existing regional organisations such as FFA, SPC and PNA, then the MSG-FTAC should prioritize and concentrate on these issues as the basis of formulating its work program. The MSG has also been active in promoting regional and international trade arrangements, and it is possible that fisheries trade issues could become an area of MSG-FTAC focus in the future.

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54 Full title: **Nauru Agreement Concerning Cooperation in the Management of Fisheries of Common Interest**.

55 Cook Islands, New Zealand, Niue, Tokelau, Tonga and Samoa.

56 Fiji, Papua New Guinea, Solomon Islands and Vanuatu. New Caledonia's *Front de Libération Nationale Kanak et Socialiste* (FLNKS), a pro-independence alliance of political parties, is also a member of the MSG.

▪ In organizational terms all these sub-regional groupings are relatively new: although the Nauru Agreement dates back to 1982, the PNA Office we only established in early 2010, and the MSG-FTAC and TVM Arrangement are similarly recent. The exact roles and functions of these collectives are thus still under development and may evolve and change significantly in the coming years.

4.5. WESTERN CENTRAL PACIFIC FISHERIES COMMISSION

▪ WCPFC is not a PI agency, but a Regional Fisheries Management Organisation (RFMO) as defined by Article 64 of the United Nations Convention on the Law of the Sea (UNCLOS). All of the Bank's PI member countries, as well as other PI states and territories[57], are participants in WCPFC, as also are some 20 DWFN having fishery-related interests in the region. WCPFC provides a mechanism for stakeholders in the region's tuna fishery to debate and eventually agree on fishery management measures (including for the high seas) which all members are then obligated to enforce through national legislation and action. However the interests of PI coastal states and DWFN may be diametrically opposed, debates can be confrontational and acrimonious, and agreement may be elusive or demanding of great compromise. FFA member countries form one of two voting chambers in the WCPFC (the other being composed of DWFN) and FFA mediates considerable preparation and discussion among them prior to Commission meetings, in order to debate shared concerns and formulate common positions, with largely positive outcomes to date. The recently-established PNAO and the newly-formed TVM and MSG-FTAC sub-regional groupings should further enhance the region's ability to develop positions within the WCPFC and derive benefits from it.

4.6. DEVELOPMENT PARTNERS

▪ Numerous bilateral and multilateral development agencies support the PI fisheries, including (in alphabetical order):

- The Asian Development Bank (ADB) has used its grant and loan mechanisms to support major fisheries projects in FSM, Marshall Islands and PNG in recent years. A review of ADB's fisheries policy in 2007[58] concluded that the Bank's support to national-level fisheries activities had not been sufficiently successful to warrant continuation, but it has now begun to re-engage in the sector. ADB is currently supporting the Coral Triangle Initiative in several World Bank PI member countries[59], and via its Pacific Regional Office in Suva, Fiji, has provided technical advice on fisheries to the 2010 Forum Economic Ministers' Meeting.

- The Australian Agency for International Development (AusAID). AusAID's interventions in the fisheries sector are guided by a policy document prepared in

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[57] **WCPFC members**: Australia, China, Canada, Cook Islands, European Union, Federated States of Micronesia, Fiji, France, Japan, Kiribati, Korea, Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Chinese Taipei, Tonga, Tuvalu, USA, Vanuatu. **Participating Territories**: American Samoa, Northern Mariana Islands, French Polynesia, Guam, New Caledonia, Tokelau, Wallis and Futuna. **Cooperating Non-members:** Belize, Ecuador, El Salvador, Indonesia, Mexico, Senegal, Vietnam, Panama, Thailand.

[58] ADB (2007). **Special Evaluation Study on ADB's Fisheries Policy**. Operations Evaluation Department, Asian Development Bank, Manila, Philippines.

[59] Fiji, Papua New Guinea, Solomon Islands, Vanuatu.

2008[60], which emphasizes: Improving fisheries governance and institutions; Supporting private sector led development of commercial fisheries and aquaculture; Sustaining small-scale coastal commercial and subsistence fisheries; Supporting effective ecosystem-based management for sustainability; and Improving understanding and access to information. These are to be achieved by: Increasing the effectiveness of regional organisations; Targeted bilateral activities, in particular the strengthening of institutional and national capacities; establishment of an analytical research program on fisheries issues to inform aid programming; and forging stronger links through the development of partnerships among agencies and stakeholders. In line with this strategy, AusAID provides significant levels of extra-budgetary financing for fisheries activities carried out through the PI regional organisations, as well as supporting other activities at regional and national levels[61]. In recent months resources have been provided to FFA and SPC to enable a range of food security-related fisheries interventions, including: Institutional Strengthening Reviews in up to four PI countries; Legislative Reviews to update the fisheries laws of all FFA members; a Fisheries Negotiation Course; support to the FFA Regional Economic Integration Project; Evidence, Investigation and Prosecution Training; support to the Regional Observer Scheme; support to Niue Treaty Subsidiary Arrangement negotiations; improving the quality of scientific advice to support fisheries management; promoting a sustainable aquarium fish export industry; promoting small- and medium-scale mariculture; and assisting national fisheries authorities and the private sector in PIC to meet fishery product health, food safety and other regulatory requirements. AusAID has previously supported large bilateral fisheries projects in PNG, Samoa and elsewhere, and is considering future funding of institutional strengthening and other fisheries programs in PI countries.

- The Australian Centre for International Agricultural Research (ACIAR) has been a key source of funding and technical support for aquaculture and coastal fishery research in PI countries. ACIAR promotes joint-ventures or partnerships between Australian and developing-country research agencies, and has supported investigations and training on coastal fishery resource assessment and management, small-scale aquaculture of giant clams, pearl oysters, sea cucumbers and other invertebrates, the capture and culture of larval reef fish, and aquaculture of freshwater fish, among other things. Many ACIAR activities have been carried out in partnership with the WorldFish Centre.

- The European Union (EU) has become a major benefactor of the fisheries sector in the PI region, with a series of large projects financed under the last four 6-year funding cycles of the European Development Fund. As well as financing national-level interventions in Pacific-ACP states, the EU has also supported a number of recent and current projects implemented through PI regional organisations. These include FFA/ SPC DEVFISH (Development of Sustainable Tuna Fisheries in Pacific ACP Countries) project phase 2 and the SPC SCICOFISH (Scientific Support for the Management of Coastal and Oceanic Fisheries of the Pacific Islands region) projects, both of which have recently commenced. Recently

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[60] AusAID (2007). **Valuing Pacific Fish: A Framework For Fisheries-Related Development Assistance In The Pacific**. Australian Agency for International Development, Canberra, ACT, Australia.

[61] The Australian Government, through the Department of Defence, supports the Pacific Patrol Boat Program, through which a total of 22 patrol vessels have been provided to 12 PI countries.

completed projects have included the FFA/ SPC DEVFISH project phase 1, and the SPC-implemented SCIFISH (Scientific Support for Oceanic Fisheries Management in the Western and Central Pacific Ocean) projects.

- The Food and Agriculture Organisation of the United Nations (FAO) has its Pacific Regional Office in Apia, Samoa, through which it periodically undertakes interventions in the fisheries sector. These are often small national-level studies or technical assistance projects in FAO member countries, but regional studies, workshops and training courses are also regularly supported. Research and analysis of fishery issues relevant to the Pacific Islands is routinely undertaken as part of larger studies carried out by FAO's headquarters in Rome. FAO is the mediator of many global arrangements and agreements on fisheries, including the Code of Conduct for Responsible Fisheries, and International Plans of Action for sharks, seabirds and other sensitive species, and has assisted several PIC to formulate corresponding national plans and codes. FAO HQ also maintains data and country-specific fisheries and aquaculture information on all its member countries, including those of the PI region. In the past FAO has undertaken multi-country, multi-year projects to promote fisheries and aquaculture development in the PI region.

- The Global Environment Facility (GEF) has previously financed a regional International Waters project via SPREP, and is currently funding the Oceanic Fisheries Development and Management Program implemented by SPC and FFA. The current GEF strategy document[62] notes that the goal of the International Waters focal area is the promotion of collective management for transboundary water systems and subsequent implementation of the full range of policy, legal and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services. Specific objectives relevant to the fisheries sector include 'catalyzing multi-state cooperation to rebuild marine fisheries and reduce pollution of coasts and Large Marine Ecosystems (LME) while considering climatic variability and change'.

- The New Zealand Aid Program (NZAP) has supported the PI fisheries sector for many years through both national and regional level interventions. Current or recent national activities include fisheries institutional strengthening projects in Cook Islands, Solomon Islands and Tuvalu. At the regional level NZAP provides funding to allow expanded technical support to the region's fishery observer programs by SPC and FFA. NZAP has also been instrumental in brokering the Te Vaka Moana (TVM) fishery cooperation arrangement among certain Polynesian states, and is currently developing a program of fishery training activities for Pacific Islanders in New Zealand. NZAP activities region are guided by its Pacific Strategy[63] which, while not making specific reference to the fisheries sector, sets a framework for New Zealand's development cooperation in the Pacific Islands, whose primary focus is on poverty alleviation.

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62 GEF (2010). **GEF-5 Focal Area Strategies**. Global Environment Facility, Washington, DC, USA.

63 NZAID (2007). **Pacific Strategy 2007 – 2015. Tackling Poverty in our Region: A strategy to guide New Zealand's development program in the Pacific Islands region**. New Zealand International Aid and Development Agency, Wellington, New Zealand.

- Various other development agencies support the region's fisheries sector, and bilateral or regional fisheries projects are under way supported by governments or other organisations of Japan, Taiwan, China, Korea, France and Germany, among others. Similarly, other multilateral agencies, including various UN organisations and even the Arab Development Fund, operate in the region.

4.7. NON-GOVERNMENT ORGANISATIONS

- A number of NGO are active in the PI fisheries sector, including in particular:
  - The World Fisheries Centre (WorldFish), one of 15 research agencies supported by the Consultative Group on International Agricultural Research (CGIAR). WorldFish carries out development-oriented research on small scale fisheries and pro-poor sustainable aquaculture. The Centre has a country office in Solomon Islands which has promoted small-scale community-oriented aquaculture activities, supported the development of community-based fisheries management arrangements, and advised the government on larger-scale marine resource management issues. WorldFish has also organized regional or multi-country research and development activities, studies, training programs and technical workshops to support improved management and culture of inshore fishery resources amenable to use by communities or small-scale fishers. WorldFish was instrumental in developing FishBase, a comprehensive database of information about fish[64], which is now maintained by a dedicated multi-agency consortium, and has also established ReefBase, both on-line resources that are extensively used by PI fisheries staff.

  - The Pacific Islands Tuna Industry Association (PITIA) is an 'association of associations', providing a regional voice for national tuna industry bodies. The association was established to provide greater stakeholder participation – particularly by the private sector – in tuna fishery management decisions at both national and regional level, in order to improve the quality of decision-making and increase transparency. PITIA is a relatively new association which has received DEVFISH and GEF-OFMP support to its establishment and which now represents the tuna industry at most major regional meetings. Although initially established with the supported of donor funds, the association is now investigating more sustainable financing options.

- Several international conservation NGO are also active in the PI fisheries sector, including Conservation International (CI), Greenpeace, the Locally Managed Marine Area (LMMA) Network, The Nature Conservancy (TNC) and the World Wide Fund for Nature (WWF). CI and WWF have been vocal advocates for improved management of oceanic fishery management, and both have or are planning major programs in this area. All four organisations also have national programs with marine or fishery elements in one or more PIC, and also work in partnership with World Bank programs in other regions, and globally. National fisheries development and management NGO and CBO also operate in almost all PI countries, often in partnership with international conservation NGO, and are influential in some of them.

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[64] As of May 2010, FishBase included descriptions of 32,200 species, 295,700 common names in hundreds of languages, 51,300 pictures, and references to 46,700 works in the scientific literature.

4.8. THE PRIVATE SECTOR

- Many fisheries specialists who have worked in the Pacific Islands region note that PIC often lack home-grown entrepreneurial skills and capital, but are unattractive destinations for foreign investors and businesses. In addition to high operating costs and the diseconomies of isolation, many PIC impose excessively bureaucratic administrative conditions on both local and overseas businesses and investors, and fail to consider them – or even actively exclude them – as stakeholders in the fisheries development and management process.
- Part of the reason for this is that the very conditions that have in the past dissuaded responsible investors with long time horizons have often attracted the opposite sort of entrepreneur – 'fly-by-night' operators whose goal is to quickly extract resources and make money in a short time-frame, and then move on to the next location, leaving behind damaged resources and disappointed local partners. This is a particular issue in regard to coastal fisheries, and has led to a deep-seated distrust of the private sector in many minds. Unfortunately responsible investors and businessmen tend to be tarred with the same brush as disreputable ones.

- This situation is slowly changing in the region as PIC now increasingly recognize the need to manage fishery resources, limit access to them, and make that access conditional on land-based investment and infrastructure which requires a greater degree of commitment by the private operator than fishing floating, mobile infrastructure such as fishing vessels. In addition, the development of national fishing industry associations (FIA) in many PIC is providing the private sector with a formal mechanism through which it can participate more effectively in fishery development and management discussions, and have its voice recognized. Many PIC now regularly include their national FIA, and sometimes other private sector representatives, in their delegations to meetings of the WCPFC, Forum Fisheries Committee and other regional fora.

A Strategy for World Bank Engagement in the Pacific Islands Fisheries Sector

5.1. INTRODUCTION

- Preceding sections of this document provide the background needed to position a strategy for the World Bank's engagement in the Pacific Islands fisheries sector. Specifically, information has been presented on:
    - The Bank's priorities and philosophy in regard to its work in the region;
    - The main characteristics of the fisheries sector in the Bank's PI member countries, and the ways in which they contribute to PI economies;
    - The policies and strategies of PI countries, regional organisations and development partners to promote sustainable management of the region's oceans and fisheries.
    - The economic, political and institutional environment in which the fisheries sector operates;

- The fisheries landscape in the region is complex and crowded, with numerous stakeholders undertaking a wide range of complementary and generally well-synchronized actions that have developed over many years. If the Bank is to become a partner in this institutional environment, it needs to identify a niche where its particular strengths can be constructively applied in a manner that harmonizes with and adds value to the initiatives already under way.

- The Fisheries Engagement Strategy formulated in the following pages seeks to accomplish this goal. It recognizes:
    - The various problems and constraints to the sustainable development and management of PI fisheries identified in other parts of this report;
    - The legitimate aspirations of PI countries to develop and manage their fishery resources, and their sovereignty in this regard;
    - The strategies, plans and activities already agreed and being implemented by other players;
    - The desirability of working through existing national and regional institutional arrangements wherever possible.

- It also recognizes that the fisheries sector in the PI region is unique in a number of ways:
    - The contribution of fisheries to the economy in the region as a whole, and to many individual Bank member PIC, is proportionately greater than in any other part of the world;

- Despite this, PI fisheries are under-performing assets which could be making greater contributions to national economies and the collective wealth of PIC than they currently are:

- The regions leaders are conscious of, and pre-disposed to, ensuring sustainable economic development of fisheries, but need support to identify and implement the most appropriate approaches and mechanisms;

- The small size and limited economic diversity of many PI economies means there is real potential for improved governance and smarter management of the fisheries sector to make a significant and lasting impact;

- There are clear opportunities for the Bank to leverage its skills and resources in order to help improve the economic contribution and sustainable use of the region's fishery resources.

▪ In a recent keystone publication[65], the Bank states 'experience shows that successful (fisheries) reforms may require champions'. Although this is not meant to imply that the Bank itself should assume such a role, there is a rationale for the Bank to be pro-active in the case of the PI region. The issues and findings documented in the Sunken Billions, and in other Bank documents, provide invaluable lessons for the region that are not readily available through other agencies. The Bank's ability to mediate access to funding (whether through grants, loans, investments, leveraging of partner contributions, or other mechanisms), and to influence the way in which they are used, positions it to help ensure that resources are channeled towards the most productive actions and useful outcomes.

▪ The challenges that the Fisheries Engagement Strategy must address can be summarized as follows:
  - Development issues: there are opportunities for PI countries to derive more economic benefits and generate greater wealth from fishery resources:
    - In regard to oceanic fisheries, the value of access to the resource has historically been undervalued, leading to unreasonably low license revenues to PIC. The establishment of domestic tuna fishing, processing and supply/ service industries, and consequent increases in tuna product exports, have long been considered the 'holy grail' of fisheries development for many PIC;

    - In regard to coastal fisheries, many resources are now underperforming assets because of over-exploitation, and need restoration through improved management. Restoration of beche-de-mer fisheries probably holds the greatest potential to generate greatly increased economic benefits that will directly support rural incomes and livelihoods. Sustainable harvesting of ornamental fish, increased production from aquaculture and the expansion of tourism-related non-extractive uses present other opportunities.

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[65] World Bank/ FAO (2008). **The Sunken Billions. The Economic Justification for Fisheries Reform**. World Bank, Washington, DC, USA/ Food and Agriculture Organisation of the United Nations, Rome, Italy.

- For the most part these issues are not new, but realizing them has proven elusive in many PIC. In recent years the key role of the private sector has become increasingly recognized, although the failed model of government involvement in commercial activities has not yet been universally abandoned. Development constraints are numerous and well-documented, and some may be intractable – the isolation, inadequate infrastructure, high transport costs and limited resources of land, fresh water and labor in many PIC mean that certain types of development may never be practical in some locations. Alternative solutions may involve creative approaches to labor mobility, leveraging investment through selective use of fishery access, efforts to improve economic and policy environments, negotiation of favorable trade arrangements, and technological improvements, especially in regard to aquaculture;
    - Fisheries management: overfishing is now a threat to the sustainability of the region's fishery resources, both oceanic and coastal:
        - In oceanic fisheries, although skipjack tuna stocks appear to still be healthy, bigeye are being over-exploited and overfishing of yellowfin is a potential threat. Increases in the number, size and efficiency of fishing vessels (especially purse-seiners) operating in the region, the widespread use of fish aggregation devices (FAD), and other technological improvements mean that there is now excess capacity in the fishery. Despite this, additional vessels are already under construction, and there are signs that fleets from other areas are seeking to relocate to the WCPO because of overfishing and, in the Indian Ocean, piracy. A significant reduction in fishing effort is required in the WCPO if bigeye catches are to return to a sustainable footing. Economic assessments indicate that effort reductions could improve the efficiency and profitability of the fishery, which in turn could allow it to yield higher rents for resource-owning PI states;

        - Coastal fisheries also face major management challenges. Traditionally harvested mainly for subsistence and local trade, coastal resources remain essential for food security and livelihoods in many rural areas and small islands. Growing urban populations and increasingly cash-based economies have led to an increase in commercial fishing, with depletion of resources in almost all areas that have market access. The beche-de-mer (BDM) fishery provides a unique case (see Box 1~~Box 1~~): the productivity of BDM fisheries and their contribution to rural economies in PIC have fallen to a fraction of their former levels as a result of overfishing. The situation for valuable shell species, harvested for export as mother-of-pearl, is similar, while in some areas giant clams have been fished to local extinction. The region's population is expected increase by 50% in the next 25 years, increasing pressure on these resources.

- A key requirement for the sustainable utilization of the region's fisheries, both oceanic and coastal, will be to identify and implement innovative ways to limit and control access to marine resources, and secure greater benefits to PI economies from them.
    - Ecosystem impacts: awareness has been growing for some time of the negative impacts that fishing operations may be having on the broader marine environment,

as well as of the way that they themselves are compromised by activities in other sectors, especially coastal development and urbanization. This has led many PI countries to consider an ecosystem approach to fisheries management. Unfortunately the processes developed for this approach have proved hard to put into operation, even in developed countries, due to their requirement for sophisticated and costly science and monitoring. A more pragmatic approach is needed that takes ecosystem principles into account in a manner that fits the priorities and capacities of PIC, whose traditional resource management systems are essentially ecosystem-based;

- Climate change will have widespread long-term effects on the region's marine resources. Rising levels of CO2 in the atmosphere are already leading to increased acidity of the Pacific Ocean, reducing the ability of corals and shelled invertebrates to grow and making them more vulnerable to other forms of stress (such as increasing water temperatures). Changes in ocean circulation may alter patterns of nutrient availability, cutting the production potential and changing the abundance and distribution of tuna, to the advantage of some PIC and the expense of others. Extreme weather events are likely to become more frequent, increasing the importance of maintaining resilient coastal environments that can buffer damage from storms and tides and contribute to food security during natural disasters. Many of these changes cannot be accurately forecast so a precautionary approach is needed to exploiting marine resources that may be impacted by climate change. At the same time mitigation and adaptation strategies must be developed to reduce or replace any loss of resources, services and benefits threatened by climate change.

- Key constraints in all these areas include:
  - Governance. Fishery development and management decisions are often made behind closed doors, without proper consultation with fishery sector stakeholders or regard for their legitimate interests. Bribery, nepotism and other forms of corruption occur periodically in the sector, especially when foreign interests seek access to resources or concessions. Linking aid or trade with resource access can negatively influence fisheries management decisions. There is a generalized need to improve probity and transparency in the fisheries decision-making process, and to ensure that all stakeholders are involved in it;

  - Limited human and institutional capacity within many of the region's fisheries administrations. Small government departments with few staff, limited skills and scarce financial resources will be persistently challenged by the many and increasingly complex responsibilities that they now face;

  - National statistics and data on fisheries are generally poor, and do not provide an adequate basis for fishery planning and monitoring. This pertains not only to information on the nature, distribution and value of catches, but also on subsistence fishing, employment, national patterns of consumption, value-adding and export, and the broader contribution of the fisheries sector to PI economies. Improved fishery statistics would not only provide a better basis for fisheries management decision-making and subsequent monitoring, but also improve the profile of the sector among decision-makers by underlining its true economic worth. Broadening and better integration of data sources, improvement and of

statistical methodologies and development of faster and more accessible outputs are required.

- Consideration of these overarching challenges will be fully integrated into the activities undertaken under the aegis of the Bank's Fisheries Engagement Strategy.

- Based on the preceding descriptions of fishery sector challenges, the existing institutional framework and the large suite of activities already under way, the following paragraphs summarize the purpose, goal and objectives of the Bank's Fisheries Engagement Strategy.

- Purpose: The purpose of the Fisheries Engagement Strategy is to assist the Bank, in conjunction with other development partners, to support its PI member countries in their efforts to:
  - optimize sustainable economic benefits from PI fishery resources through economic analysis, improved fishery management, domestic industry development and promotion of investment in the sector; and .

  - conserve PI fishery resources and environments and ensure that these continue to make a sustainable, equitable contribution to national and local food security, livelihoods, and mitigation of climate change impacts, for present and future generations.

- The Strategy is expected to provide guidance to the Bank over a 5-year period, from 2011 to 2016.

- Goal: The goal of the FES, in line with the priorities of the Bank's PI member countries, is:
  - the marine resources of the Bank's Pacific Island member countries are sustainably managed for economic growth, food security, maintenance of livelihoods, equitable distribution of benefits and environmental conservation.

- The FES addresses key priorities of the Bank's PI member countries as defined in the Pacific Plan's Sustainable Development Pillar, particularly improved natural resource and environmental management (Appendix 1). The Strategy also addresses many of the priorities of the 2007 Vava'u Declaration by Forum Leaders (Appendix 4), and other regional statements of fisheries policy (section 0).

- Objectives: Objectives of the Fisheries Engagement Strategy are as follows:
  - Objective 1: To promote informed policy decisions on marine resource issues in Bank PI member countries:

  - Objective 2: To assist the Bank's PI member countries leverage increased, sustainable economic benefits from the regional tuna fishery;

  - Objective 3: To assist the Bank's PI member countries in developing and implementing economically sound and socially achievable coastal fishery management policies and systems;

- Objective 4: Bank interventions in the fisheries sector are managed in an efficient, participatory and cost-effective manner.

▪ The objectives form the basis of a series of proposed results below, and activities as described in section 0.

▪ Results : Table 13~~Table 13~~ below shows a generalized results framework for the FES, with expected results under each of the above objectives matched against output targets and performance indicators.

▪ The Strategy is likely to be implemented progressively over a substantial time frame, and in multiple countries, with some activities still to be fully defined: the results framework is therefore necessarily generic at this stage, and will need further refinement in line with the specific interventions to be developed. Not all results will be achieved at the same rate or in all participating counties, and flexibility will be needed to allow adaptation of the expected results and appropriate performance indicators to meet emerging national and regional priorities.

Table 13: Fisheries Engagement Strategy proposed results, outcome targets and performance indicators

Objective/ Result	**Target/ Indicator**
Objective 1: To promote informed policy decisions on marine resource issues in Bank PI member countries	
Result 1.1 Capacity-building activities result in increased ability of fisheries agencies, private sector and civil society in Bank PI member countries to participate in developing responses to complex fishery questions;	Formation of fishery advisory committees or similar groups in selected Bank member PIC. Formal consultation mechanisms established between government, private sector, NGOs, civil society and other stakeholders.
Result 1.2: Technical studies and analyses are undertaken through the FES and the results disseminated to policy-makers, technical personnel and the general public in Bank PI member countries in an appropriate format for their target audience	Analytical and study findings/ recommendations are communicated through technical reports, presentations, media releases and other mechanisms, including at high senior decision/ policy-making level.
Result 1.3: Advice on appropriate oceanic and coastal management arrangements, ecosystem approaches to fisheries and climate change adaptation and mitigation measures developed, accepted and implemented by stakeholders in Bank PI member countries	Bank member PIC incorporate recommendations on improved fishery management arrangements into national fishery policy, legislation, regulations and management plans. Impacts of management measures are monitored and modifications adopted where appropriate.
Objective 2: To assist the Bank's PI member countries leverage increased, sustainable economic benefits from the regional tuna fishery	
Result 2.1: Technical advice provided and financing arrangements made to permit the Vessel-Day Scheme for purse-seine fishery management to operate effectively as a centralized rights-based trading system	VDS implementation completed for the purse-seine fishery, including introduction of a mechanism for at least 10% of vessel-days on a regional basis. VDS is progressively extended to the tuna longline fishery.
Result 2.2: Business planning advice results in improved governance, performance and effectiveness of the PNA Office	PNAO work program emphasizes VDS as priority activity. Regulatory and commercial activities separated.
Result 2.3: Fishery sector investment or employment opportunities identified which create jobs and income for the Bank's PI member countries.	Analytical and investment studies and brokering (in conjunction with IFC) result in onshore investments and improved fishery-sector labor mobility within the region.
Result 2.4: Regional systems for obtaining, transmitting and processing data on oceanic fisheries in Bank PI member countries are improved and generate more useful and timely information for use by decision-makers	Research and development into the integration of e-reports, e-observer reports and other data sources into the regional fisheries information management system, as well as incorporation of VDS trading mechanisms.
Objective 3: To assist the Bank's PI member countries in developing and implementing economically sound and socially achievable coastal fishery management policies and systems	
Result 3.1: Techniques and tools developed to allow restoration and sustainable utilization of beche-de-mer (BDM) fisheries in Bank PI member countries, with participation of all	National partnerships established between resource owners/ users, community groups, commercial interests, research organisations and other stakeholders. Technical

relevant stakeholders, including communities, government fishery agencies and seafood exporters	measures, funding, implementation arrangements agreed for BDM fishery rehabilitation and management reform.
Result 3.2: Options for using regional cooperation to leverage additional economic benefits from beche-de-mer and other coastal fishery resources identified, accepted and implemented by the Bank's PI member countries	Regional cooperation agreement established among principal BDM exporting countries. Harmonized terms and conditions of BDM resource access agreed and put in place by Bank member PIC.
Result 3.3: National fishery statistics and information systems on coastal fisheries in Bank PI member countries are improved and generate more useful, reliable and relevant biological, economic and operational data for use by decision-makers	Data on production, biological characteristics (species and size composition) and economics (value, employment, consumption, trade) being routinely gathered, analyzed and formally considered in fishery management decisions.
Objective 4: Bank interventions in the fisheries sector are managed in an efficient, participatory and cost-effective manner	
Result 4.1: Program plans and activities that respond to the needs and priorities of Bank PI member countries developed through a process of broad stakeholder consultation	Initial 'roadshow' allows definition of national priorities. PIC confirm interest by committing IDA or other funds. Ongoing monitoring allows adjustment as needed.
Result 4.2: Effective partnerships established and working relationships maintained with Bank PI member governments and agencies, regional organisations, development partners, the private sector, NGO and CBO, and other relevant stakeholders	RFEP Steering Committee and other consultative mechanisms used to ensure exchange of information and ideas. Implementation of collaborative or co-financed activities in appropriate technical areas.
Result 4.3: Bank activities in the fisheries sector delivered to the greatest possible degree through existing national and regional institutions	Opportunities for cooperation with FFA, SPC and other PIRO explored and used when possible. In-country activities implemented through national organisations.

- Through the FES the Bank will respond to the challenges described in section **Error! Reference source not found.** and elsewhere in this report by assisting Pacific Island governments to make informed decisions about fisheries policy, development and management based on comprehensive, high-quality information and advice, as well as by helping to strengthen the capacity of PI governments and fishery sector stakeholders to implement those decisions.

- Much of the work proposed for implementation under the FES will involve the conduct of policy, economic and technical study and analysis, review and improving fishery-related data management systems, and promoting the exchange of information between countries and regions, working with stakeholders to scrutinize and refine fisheries management policy and practice, promoting partnership arrangements, and building national capacity to implement effective, transparent and participatory fishery management arrangements. The FES will involve a blend of interventions at regional, sub-regional and national levels, as appropriate to the requirements of each specific situation or activity area.

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- <u>Oceanic fisheries</u>

- A primary activity of the FES will be to support the efforts of the Parties to the Nauru Agreement (PNA) to leverage increased economic benefits from the purse-seine tuna fishery through the further improvement of pricing mechanisms for distant-water fishing nation (DWFN) fishery access. Although PNA countries and other PIC are promoting the development of domestic fishing and processing operations, the majority of the catch is still taken by DWFN vessels, and this situation is likely to continue for the foreseeable future. The fishery has reached and could soon exceed sustainable limits. PNA countries have been cooperating to impose restrictions on fishing effort in order to avoid this situation, through several innovative management measures, including: progressive implementation of the Vessel-Day Scheme (VDS) for the tuna purse-seine fishery; proxy closure of high seas areas adjacent to their EEZ (through a licensing requirement which prohibits vessels authorized to operate in PNA EEZ from fishing on the high seas) and seasonal bans on the use of fish aggregation devices (FAD) by purse-seiners. PNA countries have recently succeeded in having the free-school component of the skipjack purse-seine fishery certified as sustainable by the Marine Stewardship Council (MSC). These and other measures are progressively improving the ability of PNA countries to regulate and manage fishing operations in their waters and adjacent areas beyond national jurisdiction (ABNJ), while also increasing the economic returns they receive. The Bank has already provided initial support to the PNA Office to assess options for the introduction of mandatory minimum local crewing levels on DWFN fishing vessels operating in PNA waters, and in developing a Business Plan for the PNAO.

- Future development of the PI tuna fishery will rely on increasing the magnitude of benefits derived from existing (or possibly diminished) catches, and the profitability of fishing and processing arrangements, rather than on any increase in production. For this reason, the FES will place priority on supporting the further refinement and improvement of the region's tuna fishery management arrangements, starting with enhancing the implementation of the PNA tuna purse-seine VDS. Through the FES the Bank will support PNA efforts to design and develop specifications for trading of a regional pool of vessel-days within the VDS, and assist the PNAO with its implementation and management. As well as assisting in the technical aspects of VDS implementation, the Bank will also investigate mechanisms for providing the liquidity that may be required to allow the VDS to operate as a truly regional tradable rights pool. Depending on the wishes of the Bank's PI member countries, it may be feasible to explore the prospect of applying Bank financial resources to the capitalization of a PNA Stabilization Fund or similar instrument, with the primary purpose of funding pre-purchase of regionally-traded vessel-days from PNA countries.

- Support to the development and effective implementation of the purse-seine VDS in PNA waters will thus be a central initial activity of the FES. Depending on progress and success in implementing the system, and on the wishes of the Bank's PI member countries, the Bank may also consider supporting the extension of the VDS to the tuna longline fishery in PNA waters and, if required, in other non-PNA Bank member countries.

- Business planning and organizational advisory support to the PNAO will also be continued, to build on and provide follow-up to the activities already commenced. This work is focusing on improving the institutional base for the PNAO (development of corporate policies, strategies and plans, determination of internal operating procedures and systems, definition and recruitment of an appropriate staff complement, establishment of work programs and budgets, institution of performance monitoring procedures, etc.), establishing clear and effective governance arrangements, and importantly, separating the PNAO's regulatory and management functions from its commercial aspirations. This will help the PNAO to progressively implement improved work program prioritization and planning, ensure robust governance, and establish rigorous management and operational systems, all to support the effective delivery of the outputs and services expected by PNA countries.

- Effective information systems will be fundamental to the successful future management of the region's oceanic fishery resources. Data collection systems are currently in place for many components of the oceanic fishery, under which fishing operators use paper forms to provide daily catch and effort information, and observers compile scientific, operational and other information. However the data submission, transmission and processing arrangements are slow, inefficient and costly, and do not take advantage of modern information technology. The result is that data may take months or years to become available to fishery managers and MCS agencies, leading to slow fishery management response times, missed enforcement opportunities, and reduced fleet compliance with fishery management arrangements. In addition, there will be a need to integrate the data management aspects of the VDS with existing data collection and processing mechanisms. The Bank will work with national and regional fisheries agencies (including PNAO, FFA, SPC and WCPFC) to assess the economic and management benefits of improved oceanic fisheries information systems and, if appropriate, ways in which the Bank could apply its financial resources, or leverage those of other development partners, to support these. Oceanic fishery data requirements and obligations are governed primarily by the provisions of national laws and regulations, but data needs to be aggregated among multiple countries, so the improvement of oceanic fishery information systems will involve actions at both national and regional levels.

- There are numerous other oceanic fishery issues that also require a country-specific focus, including for example: industrial and artisanal tuna fishery development prospects; national-level monitoring, control and surveillance; promoting improved governance and transparency, especially in licensing; and enhancing national policy setting capacity. The FES will mediate the establishment of national fishery support projects in those Bank PI member countries that wish to follow this path, through which they will be able to draw on the Bank's technical and financial resources in support of national tuna fishery development and management efforts.

- Analytical studies on aspects of oceanic fisheries will be undertaken at both regional and national levels to assess development options, and to evaluate the prospects for promoting sustainable resource use and leveraging additional economic benefits through innovative fishery management approaches. In the first instance these will include cost-benefit assessments of different purse-seine VDS implementation scenarios, and of the extending the VDS to the tuna longline fishery in and beyond PNA waters. An analysis of fishery access arrangements in the Pacific Islands, and a study of the linkages between access, aid, investment and other economic factors, is also projected, in conjunction with the Banks' PROFISH program. Other technical analyses have been proposed, and the FES will retain the flexibility to carry out further studies provided that these are consistent with the Bank's mandate, skills and areas of comparative advantage.

- <u>Coastal fisheries</u>

▪ Development and management issues relating to coastal fisheries are often common to several countries of the region, and stocks or populations of some inshore fishery resources are linked internationally through patterns of larval distribution and recruitment. However in most cases the actions to develop and manage these resources are most appropriately taken at national rather than regional levels. The FES will therefore focus on developing national fishery management support projects in each Bank PI member country that wishes to use Bank resources for this purpose. A consultative process between the Bank and its PI member countries will take place for this purpose as soon as practically feasible. Coastal fishery resources differ in their importance among Bank PI member countries, and each national project will need to be designed to respond to specific country needs and priorities, but it is expected that they will all revolve around a set of common themes, as follows:

- Restoration of beche-de-mer (BDM) fisheries will be the centerpiece of most national-level Bank-sponsored fishery support projects. BDM fishery restoration will require interventions at several levels, including: resource assessment; promotion of or support to community-based management; improved monitoring, control and surveillance, especially at the point of export; better data collection systems; and (in some locations) restocking of depleted populations through aquaculture, habitat restoration or improvement, or other forms of resource enhancement. An area of particular focus will be the exploration and development of economic (rather than regulatory) tools (such as scaled license fee structures, levies and other fiscal incentives and disincentives) that can improve management of the fishery by altering the behavior of BDM harvesters, processors and exporters.

- Collectively, restoration and improved management of PI BDM fisheries comprise prime candidates for support through the Bank's FES. Positive results in this area have the potential to generate significant economic and environmental benefits to PI countries in a manner that directly supports rural livelihoods for coastal and outer-island communities whose alternatives are often very limited. Successful rehabilitation of BDM fisheries will also to serve a demonstration function in respect to the potential impacts of improved management of other coastal fisheries. Depending on the achievements of national- and regional-level BDM fishery management initiatives, it may be feasible to consider extending the approach to other resources, including trochus and pearl shell, the region's other main community-based export fisheries.

- There is also potentially a regional dimension to the BDM fishery, in that there are opportunities to be gained from cooperation among PI countries. As with tuna, BDM is a supply-limited fishery and the Bank's PI member countries together control the majority of the resource on which it is based. They stand to improve economic benefits from the fishery if they act collectively to develop and adopt harmonized, advantageous management policies and conditions of resource access. This concept is discussed further overleaf.

- Support to the development of appropriate, practical ecosystem-based management (EBM) arrangements which take into account the impacts of fisheries on the broader environment as well as the impacts of other sectors (especially coastal infrastructure development, pollution and waste disposal,

agriculture, forestry and other watershed management issues) on fisheries. There is a need to simplify and demystify ecosystem-based management in the PI coastal fisheries context, and to identify pragmatic, do-able approaches that can be taken by PI fisheries managers working in partnership with other stakeholders. An ecosystem approach to fisheries (EAF) appropriate to the needs of Bank PI member countries will incorporate elements of community-based management, integrated coastal management, and ridge-to-reef concepts of resource stewardship.

- Bank interventions in this area will require close liaison and partnership with governments, the private sector, non-government organisations, communities and community-based organisations, and other civil society institutions, all of which are stakeholders in the coastal fishery management process. Supporting the development of EBM arrangements for coastal fisheries is an area where the establishment and maintenance of effective partnerships and the use of participatory and consultative processes will be critically important.

- Improvement of national fishery information and statistical systems, both biological and economic. The paucity or poor quality of information on coastal fisheries is a systemic weakness among the Bank's PI member countries, and presents a serious impediment to effective resource management. In the absence of at least basic data there is a strong risk that fishery management decisions will be poorly informed and will fail to take into account important considerations or stakeholder interests. Similarly, the impacts of fishery development or management initiatives cannot be evaluated or adjusted without objective assessment of their consequences. This will also be an issue in regard to understanding and adapting to the impacts of climate change. In other regions of the world the Bank has successfully developed fishery 'dashboards', which are statistical systems that generate timely, practically useful outputs that are easily accessible to fishery decision-makers, and this approach could be extended to the PI region. Initiatives by the Bank to help PI member countries improve the range and quality of data on coastal fisheries will need to involve national statistics offices and possibly other government departments, the private sector and civil society, as well as fisheries agencies;

- Understanding and mitigating the impacts of climate change on fisheries and coastal resources. There is a growing body of scientific (and pseudo-scientific) knowledge on the likely impacts of climate change, which will continue to expand in the next few years. This will need to be translated into practical guidance for appropriate national-level action, tailored to the specific circumstances of individual Bank PI member countries. The Bank can contribute significantly to this process by providing technical advice and assisting in the design of appropriate adaptation and mitigation measures.

▪ These four main elements are likely to form the basic 'core package' of each national-level fisheries support project established under the FES, but other activities can be added (or taken away) in line with the specific priorities and circumstances of each PIC. The rate of implementation will also need to be tailored to the capacity and operational conditions in each PIC.

- In addition to national projects, regional actions will be undertaken to leverage additional economic benefits from coastal fishery resources. These have invariably been considered as country-specific national assets in the past, and there have not been any significant or sustained regional efforts to add value to them through collective bargaining or harmonization of management regimes.

- There is nevertheless scope for such action in selected cases, notably that of the BDM fishery, which is analogous to the PNA-tuna situation in that a handful of countries now control the lion's share of a global commodity which is in growing demand because of over-fishing. In parallel with national efforts to restore BDM fisheries, the FES will mediate the formation of a regional or sub-regional BDM fishery grouping to advance the economic interests of participating PI countries. The arrangement will focus in the first instance focus on harmonizing economic and other management arrangements, establishing minimum terms and conditions of resource access, maximizing the leverage available through collective bargaining and action, and promoting exchange of technical information. The proposed BDM arrangement will almost certainly be built on an existing regional or sub-regional grouping.

- Analytical studies will be undertaken at both national and regional levels to assess coastal fishery development/ management options and to evaluate prospects for leveraging additional benefits through innovative resource management approaches. In the first instance these will include an evaluation of potential economic and fiscal management tools for BDM and other export-oriented coastal fisheries, along with an updated assessment of current BDM production and market trends. Additional work is also envisaged in regard to: the application of ecosystem-based management approaches to coastal fisheries in individual PIC; appropriate climate change adaptation and mitigation measures for coastal fisheries; and improved models for aquaculture development. Some of these studies may be carried out in partnership with PI regional organisations or international agencies. The FES will retain the flexibility to undertake additional technical and analytical studies in areas that conform to the Bank's areas of specialization and comparative advantage.

- Generic activities

- Fisheries Development. The Bank will work with fishery agencies, civil society and the private sector in its PI member countries to identify specific national development needs and opportunities in regard to both coastal and oceanic fisheries. The focus is likely to be on identifying improvements to the business and investment climate as it relates to the fisheries sector, and if appropriate implementing these through national projects established under the aegis of the FES. Development and investment facilitation work will be undertaken in partnership or consultation with the International Finance Corporation.

- Capacity Building. Capacity-building needs will be evaluated as part of each national project, as well in conjunction with regional-level activities. Support to capacity-building, whether for government, the private sector or civil society, is likely to revolve around two main mechanisms: short-term attachment training at professional organisations or institutions having a reputation for excellence; and in-country mentoring by technical experts during repeat advisory/ assessment visits.
    - Information and communication. Transforming public policy requires careful advocacy. Communication is at the heart of the change processes, and deciding on audiences and messaging must be part of the design of any initiative. During the implementation of the FES considerable attention will be paid to ensuring that information reaches its target

audience. Emphasis will be placed on communicating key fisheries issues to decision-makers, and targeting regional media to raise public awareness. Appropriate information and communication materials will be produced in conjunction with each substantive activity carried out. Depending on the nature of the activity, these may include technical or other reports, policy briefs, press releases, contributions to magazines or newspapers, posters, or other media. Where appropriate use may also be made of: websites of the Bank, partner agencies or other stakeholders, including social networks; e-mail groups; technical meetings and conferences; and broadcast media.

- A common feature of technical fishery studies in the PI region is that sound advice is often ignored and technical reports end up on the shelf instead of being used. Mechanisms will be put in place to ensure that the Bank's PI member countries are fully committed to utilizing and acting on the results of advisory work undertaken through the FES.

- Crosscutting issues

- As well as addressing specific technical fisheries topics, the FES will contribute to broader efforts of the Bank to address a number of crosscutting issues:
    - Governance: The FES will contribute to enhanced institutional capacity for planning and implementation in Bank PI member country fisheries administrations. Greater transparency will be promoted by encouraging partner agencies to place non-sensitive fishery information (such as fishery licensing data) in the public domain. The enhancement of consultative processes and community management arrangements, as well as support to private sector associations, will increase public participation in decisions on resource issues. Development efforts in fisheries and aquaculture will seek to provide a framework that encourages private enterprise and investment.

    - Gender: The contribution of women in Pacific fisheries is often under-valued and misinterpreted due to gender stereotypes and lack of accurate information. The FES will link to other programs that address gender issues, both within the Bank and in its PI member countries. The Strategy will promote the involvement of all sectors of the community in decision-making on resource issues, and efforts will be made to encourage women in fisheries-related careers and to support their professional development.

    - Environment: Promoting the sustainability of fishery resource use is a core feature of the FES, which is inherently environmentally responsible, as also is the design and implementation of ecosystem-based fishery management measures. Development activities promoted or supported under the FES will be required to comply with environmental safeguards as practiced more broadly by the Bank. Where appropriate the FES will assist in evaluating and designing any environmental mitigation measures required for major developments in the fishing industry and aquaculture.
    - Food security: Improved fishery management through the application of an ecosystem approach, development of mitigation and adaptation responses to climate change impacts, and promotion of community-based management arrangements will all contribute to greater fish supply and food security, as also will any initiatives that focus on development of improved economic models for aquaculture. Restoration of beche-de-mer fisheries will support rural livelihoods through improved incomes. Tuna fishery development efforts that result in increased landings and processing in Bank PI member countries will contribute to food security and dietary health through an increase in the supply of tuna to local markets.

- The above catalogue of technical and thematic areas to be addressed by the FES is not exhaustive, and is likely to be adjusted or amended as the strategy moves to implementation. The activities identified so far are based on consultations held during the development of the FES, coupled with literature research and preliminary analysis or assessment. They are consistent with the Bank's relative areas of strength, and provide synergies with the work of other agencies and donors without creating overlap or duplicating effort. Close coordination will of course be needed to ensure harmonization with the activities of other donors operating in the sector, with the work of regional organisations and the NGO community, and with the new regional and sub-regional initiatives that continue to emerge.

- All the listed activities will undoubtedly bring benefits to the Bank's PI member countries, but they also carry risks, as summarized in Table 14~~Table 14~~ overleaf. As can be seen, most of the risks that are rated as of 'high' importance are at the national level, and reflect institutional weaknesses and the need for improved fishery governance mechanisms in PI countries. The table also proposes mitigation measures for the risks identified. Overall, although there are several important risks that will threaten implementation of the FES, there are none that are thought to be so significant that they present a major threat to the overall approach, or cannot be managed.

- *Partnerships:* It is clear that the Bank cannot respond comprehensively or single-handedly to all or even many of the broad challenges enumerated above. It is also recognized that numerous other stakeholders – governments, regional organisations, development partners, private sector operators, non-government organisations and civil society – already have in place a wide range of activities aimed at addressing some of them. The Bank can add greatest value to this matrix by focusing on those areas in which it has the greatest comparative advantage, whilst at the same time ensuring that its interventions are carried out in partnership with the major agencies operating in the sector.

Table 14: Benefits and risks associated with proposed RFEP activities

Activity area	Benefits	Risks (Rating – High, Medium or Low)	Risk mitigation measures
Implementation of the Vessel-Day Scheme for tuna purse-seine fishery management in PNA waters.	Increased access fee returns to PNA countries. Reduced fishing effort reverses current trends to overfishing. VDS margins/ profits allow self-financing of PNA Office.	Market-based trading of vessel days undermines relationships between PIC and long-term investors in the fishery sector. (L) PNA countries that feel disadvantaged by their vessel-day allocation break ranks and undermine the system as a whole. (L)	A goal of the VDS is to reduce fishing effort, so some vessels and fleets will need to drop out of the fishery. Those that remain will by definition be the ones that accommodate and adapt to the VDS. Vessel-day allocations will need to be based on a predetermined formula, which may need to be adapted periodically in response to developments in the fishery.
Organizational management and business planning support to the PNA Office.	PNAO operates under appropriate governance in a transparent, efficient and cost-effective manner. PNAO commercial development activities increase benefits derived by PNA countries.	Differing fishery development opportunities and priorities in PNA countries prevent consensus on PNAO focal areas and key activities. (M) PNAO commercial activities compete with or confound national investment/ development projects. (L)	PNAO commercial activities will need to be ring-fenced from its management functions so that these can continue unaffected. Effective governance mechanisms over PNAO commercial activities will ensure that these do not conflict with national aspirations.
Improvement of oceanic fishery information system.	Reduced cost and increased efficiency of oceanic fishery data processing arrangements. More timely data reporting increases responsiveness of fishery management and compliance/ enforcement actions.	Complexity of current fleet reporting and observer obligations and observer arrangements hinders harmonization of data management systems. (M)	Rationalization of observer activities will be needed over time, with improved harmonization of the activities of countries and regional agencies, and international agreements allowing cross-border accreditation of observers.
National-level capacity building for fisheries policy and management.	Stakeholders in PI countries capable and empowered to participate in fishery management decisions.	Vested interests attempt to block measures to increase transparency and empower stakeholders in order to maintain status quo. (H)	Improved mechanisms for stakeholder participation in fishery management decision-making will reduce the influence of powerful interests. Improved transparency and information dissemination on fishery management issues and outcomes will lead to more equitable decisions.
National-level beche-de-mer fishery restoration.	Greatly increased rural incomes, exports, and contributions to national economies.	Corruption and governance issues prevent effective beche-de-mer fishery management. (M)	Improved MCS for beche-de-mer fisheries, and greater transparency in licensing and decision-making will be required.

Activity area	Benefits	Risks (Rating – High, Medium or Low)	Risk mitigation measures
Regional-level cooperation in beche-de-mer fisheries management.	Further economic gains to beche-de-mer exporting countries through harmonization of resource access mechanisms and increased rents.	Foreign and domestic interests attempt to undermine regional collective action in order to maintain the status quo and maximize profits to industry members. (M)	Stricter legislation/ regulations on BDM fishery licensing and export arrangements, based on regionally-agreed minimum terms and conditions of access, will need to be implemented in PIC.
Improvement of national fishery statistical and information systems.	Improved information for fishery management decision-making, monitoring, impact assessment and adjustment.	PI countries have a history of failing to assign sufficient priority and resources to collection and compilation of fishery statistics, and this may continue. (H)	Formal systems will be needed to ensure that statistics are properly integrated into decision-making processes, so that data becomes a requirement rather than an option. Promoting improved harmonization between fisheries, customs, economic and other agencies will increase data quality and reduce costs.
Adaptation and implementation of ecosystem-based fisheries management systems appropriate to national needs in PI countries.	Fishery management arrangements progressively reduce negative environmental impacts of fisheries. Coastal management and other development activities adapted to progressively reduce their negative impacts on fisheries and coastal areas.	PI countries have insufficient human and financial resources to effectively implement ecosystem-based fishery management. (H) Coordinating actions among the multiple agencies and sectors involved in coastal zone management has proven a major challenge to PI countries in the past, and this may continue. (H)	Simplified mechanisms for implementing ecosystem approaches will need to be developed, and greater reliance placed on coastal communities and resource owners/ users, even if this leads to localized variation in the type and quality of management. Agency responsibilities will need to be revised and where possible centralized or managed through formally-established inter-agency working groups.
Translation of climate change information into practical fishery management actions	Oceanic fishery investments and development options tailored to predicted shifts in tuna distribution. Coastal fisheries and environments managed to ensure greater resilience to climate change impacts.	Results of climate change science are too large-scale or unreliable as a basis for specific national decision-making. (H) As with ecosystem management, coordinating actions among multiple agencies and sectors may be an insurmountable challenge in some countries. (H)	Considerable additional research is planned by a range of agencies which will improve the quality of scientific information on climate change impacts over time. Agency responsibilities will need to be revised and where possible centralized or managed through formally-established inter-agency working groups.
Analytical studies and assessments.	Information provided to improve decisions and actions on specific fishery management issues.	Beneficiaries do not act on findings or implement recommendations. (M)	Prior commitments to acting of study findings will be sought prior to their commencement. Effective dissemination of results among stakeholders will make it more difficult for authorities to ignore them.

- The primary organisations active in the PI fisheries sector are described in chapter 0, and include PI regional organisations, bilateral and multilateral donors, the NGO community, and others. Agencies with which the Bank will need to liaise and eventually develop working relationships with include (in alphabetical order):
    - Asian Development Bank;
    - Australian Agency for International Development;
    - Australian Centre for International Agricultural Research
    - Conservation International;
    - European Union;
    - Food and Agriculture Organisation of the United Nations;
    - Greenpeace;
    - Locally Managed Marine Area Network;
    - Melanesian Spearhead Group Fisheries Technical Advisory Committee;
    - Nature Conservancy;
    - New Zealand Aid Program;
    - Pacific Islands Forum Fisheries Agency;
    - Pacific Islands Forum;
    - Pacific Islands Tuna Industry Association;
    - Parties to the Nauru Agreement Office;
    - Secretariat of the Pacific Community;
    - Secretariat of the Pacific Regional Environment Program;
    - Te Vaka Moana;
    - University of the South Pacific;
    - World Fisheries Centre;
    - World Wide Fund for Nature.

- The above list is not exhaustive, but simply notes the key agencies operating at the multi-country level in the region whose partnership with the Bank would be mutually beneficial in regard to implementation of the FES. Agency policies and available resources undergo periodic adjustment and this may result in resetting of priorities or changed approaches. In addition, varying numbers of national and local agencies, many of which are civil society or community organisations, are active in each Bank PI member country. The consequence is a dynamic and rapidly changing landscape of fishery support and cooperation activities at both national and regional levels.

- In practical terms, the FES will be delivered through a World Bank-sponsored Regional Fisheries Enhancement Program (RFEP), with its own formal identity as a unit within the Bank's Pacific Program Office. The RFEP will be managed through an Implementations Support Unit (ISU) which will report to a Program Steering Committee (PSC), comprising representatives of:
    - all Bank PI member countries participating in the Program (i.e. those that are benefitting from regional or sub-regional activities, or have drawn on IDA or IBRD resources to establish national fisheries projects);

    - development partners making financial or other contributions to the Program;

- technical agencies actively involved in the program or collaborating in the delivery of its outputs;

- the Bank itself.

▪ PSC meetings will take place up to twice a year, preferably taking advantage of other regional fisheries meetings in order to minimize travel time and cost. The ISU will initially comprise a single professional fisheries specialist engaged as RFEP Coordinator, supported as needed by short-term consultants undertaking specific analytical or advisory activities. Depending on the rate of Program implementation, the operational arrangements ultimately adopted and the availability of funding, additional personnel will be engaged by the ISU. Ideally the ISU will comprise a minimum of two professional staff within one year of RFEP commencement.

- A priority activity of the ISU will be to establish the partnerships, funding and operational arrangements needed to support the implementation of the PNA Vessel-Day Scheme, as well as other regional oceanic fishery activities, including further organizational and business planning support to the PNA Office. While Trust Funds have been used to support short technical assistance activities in this area in the first instance, other sources of funding will need to be explored as a priority activity. Possible options include the Bank's internal Development Grants Facility, the GEF, bilateral partner contributions, PIC's own IDA grant or credit allocations (for national level work), and regional IDA funds that could be leveraged in the event of several PICs choosing to use national IDA resources (see section **Error! Reference source not found.**).

- The ISU will also mediate the development of a series of National Fisheries Enhancement Projects (NFEP) in those Bank PI member countries that wish to utilize nationally-allocated Bank (IDA, IBRD or other) or GEF funds for this purpose. It is not anticipated that all Bank PI member countries will want to use these resources for fisheries management purposes, at least not in the first instance. During the first year of RFEP operation these options will be explored with Bank PI member governments, with the aim of 'picking the low-hanging fruit' by establishing national projects in those countries most interested in following this path, and for whom the benefits are greatest. The target would be to agree at least three NFEP in the first year of operation, with others to follow. It is also expected that the first national projects could serve a demonstration function whose positive results would encourage other countries to participate in the RFEP. National projects would be implemented by government, private sector or civil society organisations as agreed during the project design process. Development of three, or even two, national projects may also allow access to regional IDA funds in support of regional and multi-country activities planned under the RFEP (see section **Error! Reference source not found.** for more detail). Figure 9~~Figure 9~~ below provides a graphic representation of the organizational structure envisaged for the RFEP.

- The RFEP will operate on a 3-year rolling work program and budget, updated each year to provide detailed activity plans and cost estimates for the next twelve months. Annual work plans and budgets will be completed at least 3 months prior to the commencement of the year to which they apply.

- The physical location of the ISU will need to be determined. While synergies with other Bank projects and activities would be gained by having it based at the Bank's Sydney Office, attaching the project to a Pacific Island regional fisheries agency would offer numerous practical advantages in terms of technical and administrative resource sharing, and networking with regional and national fisheries professionals. There may also be benefits to having the RFEP attached to one of the Bank's PI country offices, although these seem less obvious.

- A possible approach could be to establish the RFEP at the Bank's Sydney Office during an initial 6-12 month set-up phase, and use this period to negotiate a hosting arrangement with a regional fisheries organisation. SPC and FFA are the obvious agencies of choice in this regards, with SPC being preferred because of its larger staff complement, broader scope of technical fishery activities (which encompass both oceanic and coastal fishery domains), and involvement in a range of complementary technical disciplines (maritime boundary delimitation, climate change, economic statistics, health and nutrition).

- The fisheries sector in the Pacific Islands region is dynamic and evolving quickly, so the RFEP will need to be continually monitored and regularly reviewed to ensure it remains relevant and keeps pace with the contextual changes that will almost certainly take place. Bi-annual review of the Program's work and achievements will be undertaken by the PSC meetings. Monitoring of Program outcomes and results will take place on an ongoing basis against agreed indicators, with the ISU reporting twice yearly to the PSC in advance of its meetings. The RFEP will also report opportunistically to meetings of the region's senior fisheries personnel and other relevant gatherings organized by SPC, FFA and other relevant agencies as well as (possibly) the WCPFC. A more detailed technical and financial review will be undertaken after 3 years by external or other specialists appointed by the Bank. The review findings will be presented to the PSC for consideration and action.

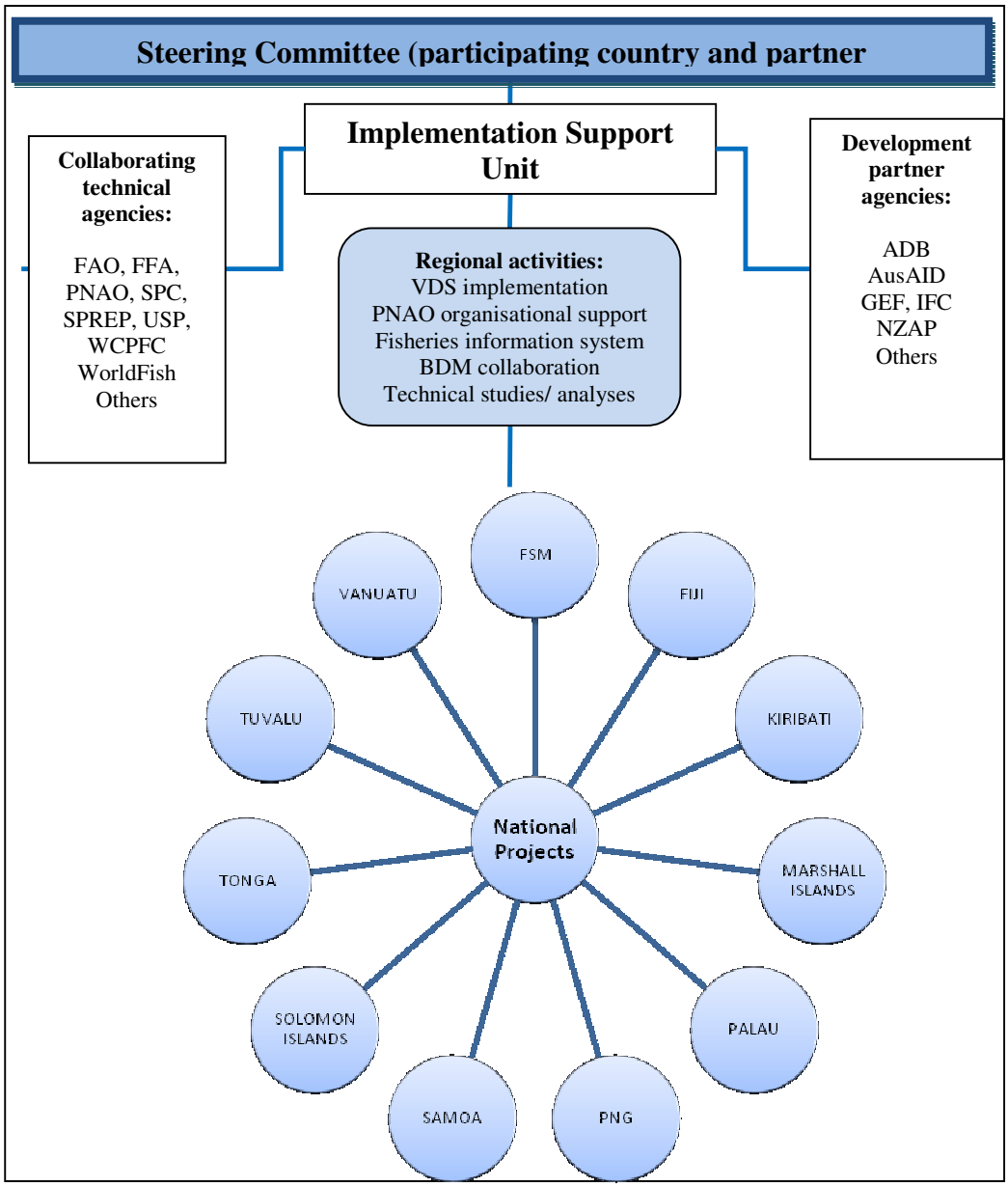

Figure 9: Relationship diagram of the proposed Fisheries Enhancement Program

- The FES envisages an initial 5-year horizon for the RFEP and associated national-level activities, but this is a short time-frame in which to envisage major restructuring of the PI fisheries sector. Many activities, such as restoration of BDM fisheries, improving tuna fishery management arrangements, and promoting domestic fishery investments, may require time frames of a decade or more. One of the Bank's own internal documents[66] states: 'Transformative change takes time and staying power, and the Bank will need to resist the temptation to expect measurable impact too soon in our new engagement cycle'. If the RFEP performs effectively and makes adequate progress towards its goals, it is anticipated that it will be extended beyond the 5-year horizon initially envisaged.

- The Bank's two main financing agencies that concern the PI region are the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA). Eligibility for loans or grants from these agencies depends on a range of factors, including national income levels and the country's creditworthiness. Of the Bank's 11 PI member countries, two (Marshall Islands and Tonga) are eligible to receive grants from IDA, three (PNG, Samoa and Vanuatu) are eligible to receive credits (which are essentially interest-free loans) and four (FSM, Kiribati, Solomon Islands and Tuvalu) are eligible for both. Fiji and Palau are not eligible for IDA funding, but, along with PNG, may access the less concessionary loans available from IBRD. In general, however, experience has shown that there is little demand for IBRD lending in the PI region for technical assistance, due to the availability of bilateral grants and other cheaper alternatives.

- The provisional IDA funding allocations for each of the Bank's PI member countries during the current 3-year replenishment round (which commenced in July 2011) are shown in

[66] World Bank (2009). **Blue Water: Towards a World Bank Group Pacific Strategy**. Internal Document, World Bank, Washington, DC, USA.

Table 15

~~Table 15~~ below. A total of US$ 47 million in grants and $188 million in credits are available to the Bank's 9 IDA-eligible PI member countries. Each country will negotiate with the Bank in regard to how these funds will be utilized: if a country considers that fisheries development and management are high priority activities, then it is feasible that these funds could be used for that purpose.

Table 15: IDA grant and credit allocations for Bank PI member countries, 2011-2014

World Bank PI member country	IDA funding allocation 2011 – 2014 (US$ millions)			
	Grants	Credits	Total	Comments
FSM	6	6	12	50/50 grants/ credits
Fiji	0	0	0	IBRD only
Kiribati	6	6	12	50/50 grants/ credits
Marshall Islands	10	0	10	Grants only
Palau	0	0	0	IBRD only
PNG	0	120	120	Credits only. Also IBRD
Samoa	0	25	25	Credits only
Solomon Islands	8	8	16	50/50 grants/ credits
Tonga	12	0	12	Grants only
Tuvalu	5	5	10	New member, terms to be determined
Vanuatu	0	18	18	Credits only
Total	47	188	235	
Regional			50	3+ countries, multiplier of 3:1 or more

- In addition to the national allocations listed in the table, there is a regional IDA allocation which is available to support multi-country activities (and which is often under-utilized in the PI region). If, for example, three countries[67] were each to draw down nationally-allocated grant funding for fisheries development and management purposes, they could become eligible for an additional top-up, on the same terms, from the regional allocation, to support regional, sub-regional or multi-country activities. The top-up ratio is typically 3:1 but under some circumstances can be as high as 8:1. Thus three countries drawing down $1 million each would generate an initial fund of $3 million, which could then be topped up to $9 million or more from regional funds.

- This mechanism thus has the potential to provide cheap or free financing for a multi-country fisheries program with both national and regional or sub-regional components. In order to access these funds, however, national fisheries agencies will need to consult internally with the responsible central government bodies (Departments of Finance and Planning or their equivalents) to ensure that fisheries is given sufficiently high priority relative to other economic sectors.

- A range of other Bank-managed financial instruments may also be able to support the RFEP, although the resources available may be smaller, and there can be strong competition for funds in some cases. Bank-managed Trust Funds have already been used to support the studies on which the present Strategy is based, as well as the technical support previously provided to the PNAO. Further support to the PNAO is likely to be sought from the Bank's Development Grants Facility (DGF) in the near future.

- A further potential source of funding for activities under the FES is the Global Environment Facility (GEF). Most GEF funding is incremental in nature, providing for additional activities that are not covered under baseline funding already available. GEF has previously supported the region through its International Waters thematic area, which has financed the Oceanic Fisheries Management Program (OFMP), implemented by FFA and SPC. Several new projects are presently under consideration, including a second phase of the FFA/ SPC OFMP, a global project on management of fisheries in areas beyond national jurisdiction (which may finance pilot activities in the WCPO) and, possibly, support to the Pacific Oceanscape initiative (Appendix 3). It is anticipated that that the RFEP will provide a mechanism through which additional IW funding might be channeled to the region in support of fisheries conservation and sustainable utilization.

- GEF also has a number of other thematic areas, which unlike International Waters, are managed through national funding allocations. Table 16~~Table 16~~ shows the national allocations for Bank PI member countries in the Biodiversity, Climate Change and Land Management thematic areas for the current GEF 4-year funding cycle, which commenced in July 2010.

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[67] In the case of Fragile and Conflict-Affected States (FCAS), only two countries are needed in order to access regional IDA funds. FCAS are defined as countries with a Country Policy and Institutional Assessment (CPIA) score of 3.2 (out of 6) or less, or with no CPIA score: or countries that have had a UN Peace-Keeping mission in the past three years. Bank PI member FCAS are Federated States of Micronesia, Kiribati, Marshall Islands and Solomon Islands.

Table 16: GEF national funding allocations by thematic area for Bank PI member countries, 2010-2014

World Bank PI member country	GEF funding allocation 2010 – 2014 (US$ millions)				Flexible
	Climate change	Biodiversity	Land	Total	
FSM	2.00	3.49	0.90	6.38	Yes
Fiji	2.00	4.56	0.59	7.15	No
Kiribati	2.00	1.69	0.56	4.25	Yes
Marshall Islands	2.00	2.02	0.50	4.52	Yes
Palau	2.00	1.92	0.50	4.42	Yes
PNG	2.00	13.32	1.17	16.49	No
Samoa	2.00	2.43	0.93	5.36	Yes
Solomon Islands	2.00	3.60	0.65	6.25	Yes
Tonga	2.00	1.59	0.75	4.34	Yes
Tuvalu	2.00	1.50	0.59	4.09	Yes
Vanuatu	2.00	2.55	0.89	5.44	Yes
Total	**24.00**	**40.17**	**8.93**	**73.09**	

- The final column of the table indicates whether the funding allocations are flexible or not (flexibility allows a given country to combine its allocations under different thematic areas). In the case of Kiribati, for example, the entire allocation of $4.25 million could be combined to support a project addressing climate change, if this were the wish of the Kiribati Government.

- As with IDA grants and credits, nationally-allocated GEF funds could theoretically be applied to aspects of fisheries management, particularly in regard to mitigating the impacts of climate change. Management of GEF funds, which are again sometimes under-utilized by PI countries, is initially vested in the hands of GEF national focal points, which are usually Environment Departments. To access these funds, therefore, fisheries agencies will need to liaise with GEF national focal points as well as with central government agencies.

- Financing of the RFEP is thus expected to be through a blend of trust funds managed by the Bank, regional and national loan and grant instruments, GEF national allocations, PIC national in-kind and other commitments and, possibly, incremental funding from the GEF International Waters thematic area and contributions by other development partners. A possible funding scenario might be as follows:
    - The initial operation of the Program Coordination Unit, and selected technical studies and analyses will be financed from Trust Funds available to the Bank.

    - At an early stage, funding will be sought to enable consultation with the Bank's PI member countries on the desirability and prospects of using nationally-allocated Bank and GEF resources in support of fisheries development and management activities. It is anticipated that at least three, and possibly more, Bank-supported National Fishery Enhancement Projects will be established within 2 years of commencement.

- National projects are likely to be funded using a blend of IDA credit and grant financing. In some countries the option may be available to supplement this funding with nationally-allocated GEF resources;

- With the establishment of three or more National Fisheries Enhancement Projects, the option to access regional IDA funds will become available. Bank PI member countries may elect to finance further regional work, including capitalization of the proposed PNA Stabilization Fund, by allocating regional IDA funds to the PNAO (or indeed to other regional organisations). Suitable on-lending or other arrangements between the relevant regional agency and the PI countries concerned would need to be developed so that the latter are appropriately compensated for financing activities that provide benefits to a broader constituency, some of which may not be drawing down on their own resources (or in some cases who may not be Bank members).

▪ Detailed financial discussions and negotiations between the Bank and its PI member countries will need to take place to further develop the longer-term funding ideas and arrangements. These will be initiated at an early stage of RFEP implementation.

5.2. PRIORITIZATION

▪ The activities proposed for implementation under the FES fall into ten broad categories or groupings, which can be summarized as follows:

- Implementation of regional component of the Vessel-Day Scheme for tuna purse-seine fishery management in PNA waters;

- Organizational management and business planning support to the PNA Office;

- Improvement of the oceanic fishery information system;

- Regional-level cooperation in beche-de-mer fisheries management;

- National-level beche-de-mer fishery restoration;

- National-level capacity building for fisheries policy and management;

- Improvement of national fishery statistical and information systems;

- Adaptation and implementation of ecosystem-based fisheries management systems appropriate to national needs in PI countries;

- Translation of climate change information into practical fishery management actions

- Analytical studies and assessments.

- The first three items in the list can be considered as high priority, because they are reasonably well-defined, implementation can commence relatively quickly, and the gains to be made in both economic and resource sustainability terms are substantial. They are, essentially, probable early wins for the RFEP.

- This is not to say that the other items in the list should be thought of as low priority: several are of burning urgency to specific Bank PI member countries, and may yield equally large economic and resource management benefits to the priority activities. However their implementation will require more preparation and negotiation, and will consequently take longer to put in place.

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Bibliography

The following list is a partial inventory of the primary sources used in the compilation of the Fisheries Engagement Strategy. Numerous additional documents, including internal reports, memos, proposals and other informal documents were kindly provided by the agencies and individuals consulted during development of the Strategy, but are not listed here.

ACP Secretariat (2010). **Desk study on main donors support to the fisheries and aquaculture sector in ACP countries**. ACP Ambassadorial Working Group on Fisheries. ACP Secretariat/ Centre for Development of Enterprise/ Technical Centre for Agricultural and Rural Co-operation**,** Brussels, Belgium.

ADB (1997). **The Pacific's Tuna: The Challenge of Investing in Growth.** Asian Development Bank, Manila, Philippines.

ADB (2007). **Special Evaluation Study on ADB's Fisheries Policy**. Operations Evaluation Department, Asian Development Bank, Manila, Philippines.

ADB (2010). **Climate Change in the Pacific: Stepping Up Responses in the Face of Rising Impacts**. Asian Development Banks, Manila, Philippines.

Agnew, D.J., J. Pearce, G. Pramod, T. Peatman, R. Watson, J. R. Beddington and T. J. Pitcher (2009) **Estimating the Worldwide Extent of Illegal Fishing**. PLoS ONE 4(2): e4570. doi:10.1371/ journal.pone.0004570

Allen, R. (2010). **International management of tuna fisheries: arrangements, challenges and a way forward**. FAO Fisheries and Aquaculture Technical Paper No. 536. Food and Agriculture Organisation of the United Nations, Rome, Italy.

Allen, R., J. Joseph and D. Squires (2010). **Managing World Tuna Fisheries with Emphasis on Rights-Based Management**. Book chapter – need full citation.

Anon (2009). **Fisheries and Aquaculture in a Changing Climate**. Multi-Agency Policy Brief for UNFCCC COP-15 in Copenhagen, December 2009. World Bank, FAO, SPC and 13 others.

Aranson, R. (1999). **Property rights as a means of economic organization**. In Shotton, R. (Ed) (2000). Use of Property Rights in Fisheries Management. Proceedings of the FishRights99 Conference. Fremantle, Western Australia 11-19 November 1999. FAO Fisheries Technical Paper No. 404. Food and Agriculture Organisation of the United Nations, Rome, Italy.

AusAID (2006). **Pacific 2020: Challenges and Opportunities for Growth**. Australian Agency for International Development, Canberra, ACT, Australia.

AusAID (2007). **Valuing Pacific Fish: A Framework For Fisheries-Related Development Assistance In The Pacific**. Australian Agency for International Development, Canberra, ACT, Australia.

AusAID (2010). **Pacific Economic Survey 2009**. Australian Agency for International Development, Canberra, ACT, Australia.

AusAID (2011). **AusAID Fisheries XB Funding to SPC/ FFA**. Briefing note provided by AusAID, Canberra, ACT, Australia.

Bain, G. (2006). **A Guide to Estimating the Value of Household Non-Market Production in Pacific Island Developing Countries**. Secretariat of the Pacific Community, Noumea, New Caledonia.

Barclay, K. and I. Cartwright (2006). **Capturing wealth from tuna: key issues for Pacific Island countries**. . FFA Report 07/36. Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

Bell, J. D. (2010). **Climate change, fisheries and aquaculture in the Pacific: Adaptations for food security, livelihoods and economic growth**. Power Point presentation, OECD workshop on The Economics of Adapting Fisheries to Climate Change, 10-11 June 2010, Busan, Korea. Organisation for Economic Cooperation and Development, Paris, France.

Bell, J. D., P. Bright, R. D. Gillett, G. Keeble, M. Kronen, K. Passfield and C. Ryan (2008). **Importance of Household Income and Expenditure Surveys and Censuses for Management of Coastal and Freshwater Fisheries**. SPC Fisheries Newsletter #127. October/ December 2008. Secretariat of the Pacific Community, Noumea, New Caledonia.

Bell, J. D., M. Kronen, A. Vunisea, W. J. Nash, G. Keeble, A. Demmke, S. Pontifex and S. Andrefouet (2009). **Planning the use of fish for food security in the Pacific**, Marine Policy, Volume 33, Issue 1, January 2009.

Bell, J. D., S. W. Purcell and W. J. Nash (2008). **Restoring small-scale fisheries for tropical sea cucumbers**. Ocean & Coastal Management 51, 589–593.

Bell, J. D., J. E. Johnson and A. J. Hobday (eds.) (2011). **Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change**. Secretariat of the Pacific Community, Noumea, New Caledonia.

Cartwright, I. and G. L. Preston (2005). **A Capacity-Building Strategy for the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean**. Consultancy Report. Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

Campling, L., E. Havice and V. Ram-Bidesi (2007). **Pacific Island Countries, the Global Tuna Industry and the International Trade Regime - A Guidebook**. Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

Chapman, B. (2010). Kiribati Fisheries Training Feasibility Study. New Zealand Ministry of Foreign Affairs and Trade, Wellington, New Zealand.

Clark, C., G. Munro and U. R. Sumaila (2008). **Limits to the Privatization of Fishery Resources**. Working paper # 2008-07. Fisheries Centre, University, of British Columbia, Vancouver, Canada

Clark, L. (2006). **Pacific 2020 Background Paper: Fisheries**. Australian Agency for International Development, Canberra, ACT, Australia.

Clark, L. (2009). **A Project to Assist the Parties to the Nauru Agreement to Secure Greater Value from Their Common Fisheries Wealth: Technical Assistance Needs Assessment & Justification.** Draft concept paper, ADB project submission.

Clark, L. (2009). **Analysis and Feasibility Study on the Establishment of an Integrated Fisheries Conservation and Management Model for Eight Pacific Developing Member Countries**. Draft concept paper, GEF project submission.

Clark, L. (2010). **Global & Regional Tuna Fisheries: Opportunities for Palau.** PowerPoint presentation to Joint Tuna Task Force, 22-23 February 2010, Koror, Palau.

Cochrane, K., C. De Young, D. Soto and T. Bahri (eds) (2009). **Climate change implications for fisheries and aquaculture: overview of current scientific knowledge**. FAO Fisheries and Aquaculture Technical Paper No. 530. Food and Agriculture Organisation of the United Nations, Rome, Italy.

Conservation International (2008). **Economic Values of Coral Reefs, Mangroves, and Seagrasses: A Global Compilation**. Center for Applied Biodiversity Science, Conservation International, Arlington, VA, USA.

Côté, I. M and E. S. Darling (2010). **Rethinking Ecosystem Resilience in the Face of Climate Change**. PLoS Biology, July 2010, Volume 8, Issue 7, e1000438. www.plosbiology.org.

Crothers, S. (2010). **VDS Trading System Project**. Final Report, 25 August 2010. Office of the Parties to the Nauru Agreement, internal document.

*Cusack, P. (2011). **Solomon Islands Tuna Fisheries – Advisory Services: Concept Review Note**. Confidential appraisal document, International Finance Corporation, Washington, DC, USA.*

Cusack, P., R. Caines and A. Grant (2009). **Proposal to seek external specialist input to the development of an IFC Pacific tuna fisheries strategy.** Internal document, International Finance Corporation, Washington, DC, USA.

Dalzell, P. and D. Schug. (2002). **Synopsis of Information Relating to Sustainable Coastal Fisheries**. Technical Report 2002/04, International Waters Program, South Pacific Regional Environment Program, Apia.

Evans, D., P. Philipson, N. Barnabas, P. Roberts, G. Geen, J. Movick, B. Onorio and C. Brown (2008). **Development of a Regional Strategy to Maximize Economic Benefits from Purse Seine Caught Tuna**. Development of tuna fisheries in the Pacific ACP countries (DEVFISH) Project Report. Forum Fisheries Agency, Honiara, Solomon Islands.

FAO (2008). **Report of the FAO Expert Workshop on Climate Change Implications for Fisheries and Aquaculture. Rome, Italy, 7–9 April 2008**. FAO Fisheries Report. No. 870. Food and Agriculture Organisation of the United Nations, Rome, Italy.

FFA (2009). **Regional Tuna Management and Development Strategy, 2009-2014**. Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

FFA (2010). **Economic Indicators Update**. Occasional document updated from time to time and posted on www.ffa.int. Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

FFA (2010). **Maximising The Sustainable Returns From Fisheries Resources In The Pacific**. Briefing Paper PIFS (10) FEMN.03 prepared by the Pacific Islands Forum Fisheries Agency. Forum Economic Ministers' Meeting, Alofi, Niue, 26-28 October 2010. Pacific Islands Forum Secretariat, Suva, Fiji.

FFA (2010) **Regional Economic Integration in Pacific Islands Tuna Fisheries (REIF)**. Working Paper 18, 74th Meeting of Forum Fisheries Committee Officials, 10-13 May 2010, Honiara, Solomon Islands. Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

FFA (2010). **Regional Monitoring, Control and Surveillance Strategy 2010-2015**. Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

FFA (2011). **Value of WCPO tuna fisheries**. Excel spreadsheet updated from time to time and posted on www.ffa.int. Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

Filewood, K. (2009). **Regional Observer Program: Business Plan.** Consultancy Report, Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

Forum Secretariat (2005). **The Pacific Plan for Strengthening Regional Cooperation and Integration**. Pacific Islands Forum Secretariat, Suva, Fiji.

Forum Secretariat (2007). **The Pacific Plan for Strengthening Regional Cooperation and Integration (revised edition)**. Pacific Islands Forum Secretariat, Suva, Fiji.

Forum Secretariat (2010). **Economic Governance Program Strategic Plan 2009 – 2011**. Pacific Islands Forum Secretariat, Suva, Fiji.

Forum Secretariat (2010). **Forum Economic Action Plan 2010**. Statement from the Forum Economic Ministers' Meeting, Alofi, Niue, 27 – 28 October, 2010. Pacific Islands Forum Secretariat, Suva, Fiji.

Forum Secretariat (2010). **Pacific Plan 2010: Annual Progress Report**. Pacific Islands Forum Secretariat, Suva, Fiji.

Forum Secretariat (2010). **Forum Communiqué**. Forty-first Pacific Islands Forum, 4-5 August 2010. Port Vila, Vanuatu. Pacific Islands Forum Secretariat, Suva, Fiji.

Forum Secretariat (2010). **Maximising the Sustainable Returns from Fisheries Resources in the Pacific**. Briefing paper prepared by the Pacific Islands Forum Fisheries Agency. Forum Economic Ministers' Meeting, 26-28 October 2010, Alofi, Niue. Pacific Islands Forum Secretariat, Suva, Fiji.

Friedman, K., H. Eriksson, E. Tardy and K. Pakoa (2010). **Management of sea cucumber stocks: patterns of vulnerability and recovery of sea cucumber stocks impacted by fishing**. Fish and Fisheries, DOI: 10.1111/j.1467-2979.2010.00384.x.

Friedman K., S. Purcell, J. Bell and C. Hair (2008). **Sea cucumber fisheries: a manager's toolbox**. ACIAR Monograph No. 135. Australian Centre for International Agricultural Research, Canberra, ACT, Australia

Gillett, R. D. (2007). **Notes on the Costs of a Regional Observer Program for the Western and Central Pacific Fisheries Commission**. Consultancy Report, Western and Central Pacific Fisheries Commission, Pohnpei, Federated States of Micronesia.

Gillett, R. D. (2008). **Note on IFC fisheries activities in Tonga**. Personal communication.

Gillett, R. D. (2009) **Fisheries in the Economies of Pacific Island Countries and Territories**. Asian Development Bank, Manila, Philippines.

Gillett, R. D. (2009). **Reform of Licensing Practices in Tonga's Fisheries Sector**. International Finance Corporation, Washington, DC, USA.

Gillett, R. D. (2009). **The Marine Fishery Resources of the Pacific Islands**. Food and Agriculture Organisation of the United Nations, Rome, Italy.

Gillett, R. D. (2011) **Fisheries of the Pacific Islands: Regional and National Information**. RAP Publication 2011/003, Food and Agriculture Organisation of the United Nations, Rome, Italy.

Gillett, RD. and C. Lightfoot (2001). **The Contribution of Fisheries to the Economies of Pacific Island Countries**. Pacific Studies Series, Asian Development Bank/ World Bank/ Forum Fisheries Agency/ Secretariat of the Pacific Community.

Gillett, R. D. and I. Cartwright (2010). **The future of Pacific Island fisheries**. Secretariat of the Pacific Community, Noumea, New Caledonia/ Pacific Island Forum Fisheries Agency, Honiara, Solomon Islands.

Gillett, R. D. and G. van Santen (2008). **Optimizing Fisheries Benefits in the Pacific Islands: Major Issues and Constraints**. Discussion Paper, Sustainable Development Department, East Asia and Pacific Region, The World Bank, Washington, DC, USA.

Gillett, R. D., G. L. Preston, W. J. Nash, H. Govan, T. Adams and M. Lam (2008). **Livelihood Diversification as a Marine Resource Management Tool in the Pacific Islands: Lessons Learned**. SPC Fisheries Newsletter #125. April/June 2008. Secretariat of the Pacific Community, Noumea, New Caledonia.

GEF (2010). **GEF-5 Focal Area Strategies**. Global Environment Facility, Washington, DC, USA.

Govan, H. A. Schwarz and D. Boso (2011). **Towards Integrated Island Management: Lessons from Lau, Malaita, for the implementation of a national approach to resource management in Solomon Islands**. WorldFish Center Report to the Secretariat of the Pacific Regional Environment Program, Apia, Samoa..

Grafton, R. Q. and T. Kompas (2009). **Tuna Wealth Study: Assessment of the Value of the Tuna Resources in the Western and Central Pacific.** Sustainable Environment Group, Australian National University, Canberra, Australia.

Greenpeace (2004). **Development without Destruction: Towards Sustainable Pacific Fisheries**. Greenpeace Australia Pacific, Suva, Fiji.

Hambrey, J., H. Govan and C. Carleton (2011). **Opportunities for the Development of the Pacific Islands Mariculture Sector**. Secretariat of the Pacific Community, Noumea, New Caledonia.

Hamilton, A. (2010). **Supporting A Sustainble Supply Chain In Pacific Tuna Fisheries: Tuna In The Market Place And The Global Trading System**. Consultancy Report, International Finance Corporation, Washington, DC, USA.

Havice, E. (2007). **The State of Play of Access Agreements with Distant Water Fishing Partners: Implications and Options for Pacific Island Countries**. Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

Havice, E. and L. Campling (2010). **Shifting Tides in the Western and Central Pacific Ocean Tuna Fishery: The Political Economy of Regulation and Industry Responses**. Global Environmental Politics 10.1 (2010): 89-114.

Hilborn, R. (2007). **Defining success in fisheries and conflicts in objectives**. Marine Policy, Volume 31, Issue 2, pp. 153-158.

Holden, W. (2010). **Recommendations from the MSC Pre-assessment of the Purse Seine Tuna Fishery in PNA Member Waters**. Internal document, Marine Stewardship Council, Sydney Office, NSW, Australia.

Hurry, G. (2009). **Fisheries Administration Structures in the Pacific**. Working Paper 4, 71st Forum Fisheries Committee Officials meeting, 5-6 November 2009, Honiara, Solomon Islands. Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

IDA (2010). **Setting the Agenda for IDA16**. Resource Mobilization Department, International Development Association, Washington, DC, USA.

Johnson, J. (2010). **Vulnerability and adaptation of coastal fisheries to climate change: monitoring indicators and survey design for implementation in the Pacific**. Workshop report. Secretariat of the Pacific Community, Noumea, New Caledonia.

Kaufmann D, A. Kraay and M. Mastruzzi (2007). **Governance Matters VI: Governance Indicators for 1996–2006**. World Bank Policy Research Working Paper No. 4280

Kelleher, K. (2007). **The Role of the World Bank in Creating Fisheries Investment Opportunities**. Power Point presentation, Icelandic Ministry of Foreign Affairs Seminar on Investment Opportunities in Developing Countries, 24 May 2007, Reykjavik, Iceland.

Kelleher, K. (2010). **Adaptation to Climate Change in Developing Country Fisheries**. Power Point presentation, OECD workshop on The Economics of Adapting Fisheries to Climate Change, 10-11 June 2010, Busan, Korea. Organisation for Economic Cooperation and Development, Paris, France.

Kinch, J., P. Anderson, E. Richards, A. Talouli, C. Vieux, C. Peteru and T. Suaesi (2010). **Outlook Report on the State of the Marine Biodiversity in the Pacific Islands Region**. Secretariat of the Pacific Regional Environment Program, Apia, Samoa.

Kinch, J., S. Purcell, S. Uthicke, and K. Friedman (2008). **Population status, fisheries and trade of sea cucumbers in the Western Pacific**. In Toral-Granda, V., A. Lovatelli and M. Vasconcellos (eds). Sea cucumbers. A global review of fisheries and trade. FAO Fisheries Technical Paper. No. 516. Food and Agriculture Organisation of the United Nations, Rome, Italy.

Kinch, J., S. Purcell, S. Uthicke, and K. Friedman (2008). **Papua New Guinea: a hot spot of sea cucumber fisheries in the Western Pacific**. In Toral-Granda, V., A. Lovatelli and M. Vasconcellos (eds). Sea cucumbers. A global review of fisheries and trade. FAO Fisheries Technical Paper. No. 516. Food and Agriculture Organisation of the United Nations, Rome, Italy.

King, M. and U. Fa'asili (2007). **Extending the management base for an ecosystem approach to coastal fisheries in Pacific island countries**. Working paper, SPC Regional workshop on the implementing the ecosystem approach to coastal fisheries and aquaculture (EACFA) and aquatic biosecurity. Noumea, New Caledonia, 28 Oct-2 Nov 2007. Secretariat of the Pacific Community, Noumea, New Caledonia.

Kompas, T., R. Q. Grafton and T. N. Che (2010). **Bioeconomic losses from overharvesting tuna**. Conservation Letters 00 (2010) 1–7.

Lambsdorff, J. G. (2003). **Background Paper to the 2003 Corruption Perceptions Index**. Transparency International and University of Passau: http://www.icgg.org/downloads/FD_CPI_2003.pdf.

Lange, G-M. (2010). **Ecosystems, Ecosystem Services Valuation and Wealth Accounting: Concept Note for a Global Partnership**. Internal discussion document prepared by World Bank Environment Department, July 21, 2010. World Bank, Washington, DC, USA

Leadbetter, D. (2010). **IFC Pacific Fisheries Strategy**. Draft powerpoint presentation. International Finance Corporation, Washington, DC, USA.

Leadbetter, D. (2010). **Supporting a sustainable supply chain in Pacific tuna fisheries: An independent review and recommendations aimed at defining a value adding role for IFC.** Draft consultancy report. International Finance Corporation, Washington, DC, USA.

Lewis, A. D. (2004). **Special Requirements of FFA Member Countries with respect to Science and Data Capabilities: Evaluation and Proposal for Funding**. Consultancy Report, Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

LMMA Network (2010). **2009 Annual Report: A new age of community-based adaptive management**. Locally-Managed Marine Area Network, Suva, Fiji.

Lohmann, L. (2011). **Capital and Climate Change**. Development and Change Review Essay. Institute of Social Studies, the Hague, Netherlands.

Luthria, M. and S. Dhar (2005), **Pacific 2020 Background Paper: Framework for Growth**. Australian Agency for International Development, Canberra, ACT, Australia.

Martin, L. J. (1961). **Fish and its Uses: Some Health Education Aspects**. Technical Paper 1, 2nd Fisheries Technical Meeting, 5 – 13 February 1962, Noumea, New Caledonia. South Pacific Commission, Noumea, New Caledonia.

McClurg, T. (2011). **Business Plan, PNA Office, 2011**. Toroa Strategy Ltd., Wellington, New Zealand.

McCoy, M. (2007). **Regulation of Transhipment by the Western and Central Pacific Fisheries Commission: Issues and Considerations for FFA Member Countries**. Consultancy Report, Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

McCoy, M. (2010). **A Review Of Certain Distant Water Longline Fleets And The Implications Of Potential Regulation Of Transshipment At Sea In The Western And Central Pacific Ocean**. Consultancy Report, US National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Honolulu, Hawaii, USA.

McCoy, M. (2010). **Enhancing Employment Opportunities for Pacific Islanders aboard Foreign Fishing Vessels**. Consultancy Report, Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

McCoy, M. (2010). **Supporting A Sustainable Supply Chain In Pacific Tuna Fisheries: The Taiwan And Korea Tuna Industries**. Draft contribution to study on global tuna trade, Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

McIlgorm, A. (2007). **Economic impacts of climate change on sustainable tuna and billfish management: insights from Eastern Australia and the Western Pacific**. Power Point presentation to Climate Change on Oceanic Top Predators (CLIOTOP) Conference, 3-7 December 2007, La Paz, Mexico. National Marine Science Centre, University of New England and Southern Cross University, Coffs Harbour, NSW, Australia.

Mengerink, K., A. Schempp and J. (2009). **Ocean and Coastal Ecosystem-Based Management: Implementation Handbook**. Environmental Law Institute, Washington, DC, USA.

Mfodwo, K. (2009). **A New Approach to Maximize Economic Benefits from Tuna Resources - Development of the Concept**. Development of tuna fisheries in the Pacific ACP countries (DEVFISH) Project Report, Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

Morato, T. (2009). **Ecology And Fisheries Of Seamount Ecosystems**. Ph. D. Thesis, University Of British Columbia, Vancouver, Canada.

MRAG (2005). **IUU Fishing on the High Seas: Impacts on Ecosystems and Future Science Needs**. Marine Resource Assessment Group, London, UK.

MRAG (2005). **Review of Impacts of Illegal, Unreported and Unregulated Fishing on Developing Countries**. Marine Resource Assessment Group, London, UK.

MRAG (2010). **Monitoring the Vulnerability and Adaptation of Pacific Coastal Fisheries to Climate Change**. Marine Resource Assessment Group (Asia-Pacific). Consultancy Report, Secretariat of the Pacific Community, Noumea, New Caledonia.

MSWG (2010). **Report of a Meeting of the Marine Sector Working Group**. 5-7 July 2010, Apia, Samoa. Marine Sector Working Group (committee of Pacific Island Regional Organisations).

NZAID (2007). **Pacific Strategy 2007 – 2015. Tackling Poverty in our Region: A strategy to guide New Zealand's development program in the Pacific Islands region**. New Zealand International Aid and Development Agency, Wellington, New Zealand.

NZAID (2010). **Pacific Fisheries Training Program 2011-14: Consultation Note**. Document circulated by NZAID, Wellington, New Zealand.

OECD (2011). **The Economics of Adapting Fisheries to Climate Change**. Workshop Report, Organisation for Economic Cooperation and Development, Paris, France.

Pascale, N. (2011). **Cost-Benefit Analysis Of Community-Based Marine Protected Areas: 5 Case Studies In Vanuatu**. Research report, CRISP-CRIOBE (EPHE/CNRS), Insular Research Center and Environment Observatory, Papetoai, Moorea, French Polynesia.

Philipson, P. W. (2008). **Lessons Learned – A Review Of Successes And Failures In Tuna Fisheries Development In The Pacific Islands**. Development of tuna fisheries in the Pacific ACP countries (DEVFISH) Project Report, Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

Pickering, T. (2011). **Aquaculture and biodiversity: Developing principles for aquaculture of introduced species**. Working Paper 6, Seventh Heads of Fisheries Meeting (28 Feb - 4 March 2011), Noumea, New Caledonia. Secretariat of the Pacific Community, Noumea, New Caledonia.

PIROF (2004). **The Pacific Islands Regional Ocean Policy – From Policy to a Framework for Integrated Strategic Action**. Pacific Islands Regional Ocean Forum Communiqué, Pacific Islands Regional Ocean Forum, 2-6 February, 2004. University of the South Pacific, Suva, Fiji,

PNA (2005). **Palau Arrangement for the Management of the Western Pacific Purse-Seine Fishery – Management Scheme (Vessel-Day Scheme) (as amended by the VDS Working Group Meeting, 7 & 13 October 2005)**. Parties to the Nauru Agreement, Honiara, Solomon Islands.

PNA (2010). **Summary Record Of Proceedings Of The 5th PNA Ministerial Meeting (MPNA5)**, 22 April 2010, Majuro, Marshall Islands. Parties to the Nauru Agreement Office, Majuro, Marshall islands.

PNA (2011). **Summary Record Of Proceedings Of The 30th PNA Annual** Meeting, 4-7 April 2011, Funafuti, Tuvalu. Parties to the Nauru Agreement Office, Majuro, Marshall islands.

Prakash, V. C. (2009). **Financing the Global Agribusiness Value Chain in Turbulent Times**. Power Point presentation to East Asia/ Pacific Regional Agribusiness Trade and Investment Conference, July 30-31 2009, Singapore. International Finance Corporation, Washington, DC, USA.

Prévost, D. (2010). **Sanitary, Phytosanitary and Technical Barriers to Trade in the Economic Partnership Agreements between the European Union and the ACP Countries**. Issue Paper # 6, International Centre for Trade and Sustainable Development (ICTSD), Geneva, Switzerland.

Pratt, C. And H. Govan (2010). **Our Sea of Islands, Our Livelihoods, Our Oceania. Framework for a Pacific Oceanscape: a Catalyst for Implementation of Ocean Policy**. Secretariat of the Pacific Regional Environment Program, Apia, Samoa.

Preston, G. L. (2008). **Coastal Fisheries Development and Management.** Working Paper 3, Kiribati Ministry of Fisheries and Marine Resources Development Institutional Strengthening Scoping Study. Consultancy Report, Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

Preston G. L. (2009). **The Ecosystem Approach to Coastal Fisheries and Aquaculture in Pacific Island Countries and Territories – Part 1: A review of the current status/ Part 2: Principles and approaches for strategic implementation**. TNC Pacific Island Countries Report No. 1/08. The Nature Conservancy, Arlington, VA., USA/ Secretariat of the Pacific Community, Noumea, New Caledonia.

Purcell, S. W. (2010). **Managing sea cucumber fisheries with an ecosystem approach**. FAO Fisheries and Aquaculture Technical Paper. No. 520. Food and Agriculture Organisation of the United Nations, Rome, Italy.

Ru, J. (2009). **World Bank's Climate Change Actions in EAP Region**. Power Point presentation to Sub-Regional Workshop for Asian GEF Focal Points, March 11 2009, Hanoi, Vietnam. World Bank, Washington, DC, USA.

Shanks, S. (2010). **Introducing a transferable fishing day management regime for Pacific Island countries**. Marine Policy, Volume 34, Issue 5, pp 988-994

Shotton, R. (Ed) (2000). **Use of Property Rights in Fisheries Management**. Proceedings of the FishRights99 Conference. Fremantle, Western Australia 11-19 November 1999. FAO Fisheries Technical Paper No. 404. Food and Agriculture Organisation of the United Nations, Rome, Italy.

Spalding, M. D., C. Ravilious and E. P. Green (2001). **World Atlas of Coral Reefs**. University of California Press, Berkeley, USA.

SPC (2004). **Divisional presentation: Marine Resources. Supplementary: Update on Pacific Islands Regional Ocean Policy**. Information Paper 2.1 Supp. 1. 34th Meeting of the Committee of Representatives of Governments and Admninistrations, 16-19 November 2004, Noumea, New Caledonia. Secretariat of the Pacific Community, Noumea, New Caledonia.

SPC (2005). **Regional Policies, Inter-Agency Processes and the Pacific Plan (abridged version – contains only ocean and fishery issues)**. Working Paper 4, 4th Meeting of the Conference of the Pacific Community, 18 November 2005, Koror, Palau. Secretariat of the Pacific Community, Noumea, New Caledonia.

SPC (2005). **Pacific Islands Regional Ocean Policy and Framework for Integrated Strategic Action**. Secretariat of the Pacific Community, Noumea, New Caledonia.

SPC (2006). **Aquaculture Action Plan 2007**. Secretariat of the Pacific Community, Noumea, New Caledonia.

SPC (2008). **A Regional Approach to Invertebrate Export Fisheries**. Policy Brief #2/ 2008. Secretariat of the Pacific Community, Noumea, New Caledonia.

SPC (2008). **Aquatic Biosecurity**. Policy Brief #6/ 2008. Secretariat of the Pacific Community, Noumea, New Caledonia.

SPC (2008). **Fish and Food Security**. Policy Brief #1/ 2008. Secretariat of the Pacific Community, Noumea, New Caledonia.

SPC (2008). **Status Report: Nearshore and Reef Fisheries and Aquaculture**. Secretariat of the Pacific Community, Noumea, New Caledonia.

SPC (2008). **Fisheries and climate change**. Policy Brief #5/ 2008. Secretariat of the Pacific Community, Noumea, New Caledonia.

SPC (2009). **Fisheries, Aquaculture and Marine Ecosystems (FAME) Strategic Plan 2010-2013**. Secretariat of the Pacific Community, Noumea, New Caledonia.

SPC (2010). **FAME – 2011 Work Plan & Objectives**. Secretariat of the Pacific Community, Noumea, New Caledonia.

SPC (2011). **Briefing document of the status of maritime boundaries in Pacific Island countries**. Working Paper 5, Seventh Heads of Fisheries Meeting (28 Feb - 4 March 2011), Noumea, New Caledonia. Secretariat of the Pacific Community, Noumea, New Caledonia.

SPC (2011). **Assessing the vulnerability of fisheries and aquaculture in the tropical Pacific to climate change – an update**. Information Paper 3, Seventh Heads of Fisheries Meeting (28 Feb - 4 March 2011), Noumea, New Caledonia. Secretariat of the Pacific Community, Noumea, New Caledonia.

SPC (2011). **2011 Populations and Demographic Indicators**' spreadsheet, downloaded from: http://www.spc.int/sdp/index.php?option=com_docman&task=doc_download&gid=344&Itemid=42&lang=en. Secretariat of the Pacific Community, Noumea, New Caledonia.

SPC (2011). **2010 Pocket Statistical Summary**. Secretariat of the Pacific Community, Noumea, New Caledonia.

SPC (2011). **Fisheries, Aquaculture and Marine Ecosystems (FAME) Division annual report 2010**. Secretariat of the Pacific Community, Noumea, New Caledonia.

SPC (2011). **The Wetsern and Central Pacific tuna fishery: 2010 overview and status of stocks**. Policy Brief 12/2012, Secretariat of the Pacific Community, Nouméa, New Caledonia.

SPREP (2010). **Annual Report: 2009: Pacific Year of Climate Change**. Secretariat of the Pacific Regional Environment Program, Apia, Samoa.

Spurgeon, J. P. G. (1992). **The economic valuation of coral reefs**. Mar. Poll. Bull., 24 (11): 529-536.

Sumaila, U. R. and W. W. L. Cheung (2010). **Cost of Adapting Fisheries to Climate Change**. Development and Climate Change Discussion Paper #5. World Bank, Washington, DC, USA.

Tarte, S. (2002). **The Nauru Agreement Concerning Cooperation in the Management of Fisheries of Common Interest: A Review of the Agreement and an Analysis of its Future Directions**. Consultancy Report, Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands.

Tiller, S. (2010). **Issues affecting PNA initiatives to improve regional tuna fishery revenues**. Discussion document. Parties to the Nauru Agreement Office, Majuro, Marshall Islands.

Toral-Granda, V., A. Lovatelli and M. Vasconcellos (eds). **Sea cucumbers. A global review of fisheries and trade**. FAO Fisheries Technical Paper. No. 516. Food and Agriculture Organisation of the United Nations, Rome, Italy.

Tong, A. (2009). **Pacific Oceanscape: A Secure Future for Pacific Island Nations based on Ocean Conservation and Management**. Briefing paper for 40th Pacific Islands Forum Meeting, August 2009, Cairns, Australia. Pacific Islands Forum Secretariat, Suva, Fiji.

UNDP (2011). **The Millennium Development Goals Report 2010**. United Nations Development Program, New York, USA.

UNEP (2010). **Emerging Issues: Environmental Consequences of Ocean Acidification: A Threat to Food Security**. United Nations Environment Program, Nairobi, Kenya.

United Nations (2011). **Unedited reporting material on the topic of focus of the twelfth meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea, entitled: "Contributing to the assessment, in the context of the United Nations Conference on Sustainable Development, of progress to date and the remaining gaps in the implementation of the outcomes of the major summits on sustainable development and addressing new and emerging challenges"**. A/66/70/Add.1. UN General Assembly, Sixty-sixth session, September 2011. United Nations, New York, USA.

Vannuccini, S. (2005). **Implications for FAO Fish Consumption Statistics of Trash Fish Utilisation in the Asia-Pacific Region**. Paper Presented at The Regional Workshop on Low Value and "Trash Fish" in the Asia - Pacific Region, 7-9 June 2005, Hanoi, Vietnam. Food and Agriculture Organisation of the United Nations, Rome, Italy.

WCPFC (2010). **Development of WCPFC Cost Recovery for the Vessel Monitoring System, Regional Observer Program and the Record of Fishing Vessels**. Information package for technical assistance

study. Western and Central Pacific Fisheries Management Commission, Pohnpei, Federated States of Micronesia.

Webb, A. P. and P. S. Kench. **The Dynamic Response Of Reef Islands To Sea Level Rise: Evidence From Multi-Decadal Analysis Of Island Change In The Central Pacific**. Global and Planetary Change (2010), doi: 10.1016/j.gloplacha.2010.05.003.

World Bank (2000). **Pacific Regional Strategy**. Report No. 20370 – EAP, World Bank, Washington, DC, USA.

World Bank (2005). **International Bank For Reconstruction And Development/ International Development Association Regional Engagement Framework for the Pacific Islands FY 2006-2009**. Report No: 32261-EAP. World Bank, Washington, DC, USA.

World Bank (2007). **International Bank For Reconstruction And Development/ International Development Association/ International Finance Corporation Country Assistance Strategy for Papua New Guinea for the period FY05 – FY11**. Report No. 41571-PG. World Bank, Washington, DC, USA.

World Bank/ FAO (2008). **The Sunken Billions. The Economic Justification for Fisheries Reform**. World Bank, Washington, DC, USA/ Food and Agriculture Organisation of the United Nations, Rome, Italy.

World Bank (2008). **The World Bank and the Pacific Islands: Background Information Note for the Pacific Kick-Off Workshop of the All ACP Agricultural Commodities Program (AAACP)**. February 27-29, 2008, Apia, Samoa. World Bank, Washington, DC, USA.

World Bank (2009). **Blue Water: Towards a World Bank Group Pacific Strategy**. Internal Document, World Bank, Washington, DC, USA.

World Bank (2009). **Pacific Islands Development in 3D**. World Bank, Washington, DC, USA.

World Bank (2009). **The World Bank Group: Strategic Directions in the Pacific**. Session1 Background Paper, Pacific Seminar, October 10 2009. Internal Document, World Bank, Washington, DC, USA.

World Bank (2010). **East Asia and Pacific Economic Update 2010, Vol. I. Country Pages and Key Indicators**. World Bank, Washington, DC, USA.

World Bank (2010). **PROFISH Work Plan and Progress Report**. Prepared for PROFISH Steering Committee, 8 July 2010, Washington DC, Revised December 2010. World Bank, Washington, DC, USA.

World Bank (2010). **International Development Association and International Finance Corporation Interim Strategy Note for Solomon Islands for the period FY10 – FY11**. March 12, 2010. Report No. 53496-SB. World Bank, Washington, DC, USA.

World Bank/ FAO/ WorldFish Centre (2010). **The Hidden Harvests: the global contribution of capture fisheries (conference edition)**. World Bank, Washington, DC, USA/ Food and Agriculture Organisation of the United Nations, Rome, Italy/ WorldFish Centre, Penang, Malaysia.

World Bank (2010). **International Bank for Reconstruction and Development/ International Development Association/ International Finance Corporation Country Assistance Strategy Progress Report for the Independent State of Papua New Guinea for the period FY08 – FY11**. March 30, 2010. Report No. 53727-PG. World Bank, Washington, DC, USA.

World Bank (2011). **Climate Change Adaptation and Disaster Risk Management Program in the Pacific**. Internal discussion document. World Bank, Washington, DC, USA.

World Bank (2011). **East Asia and Pacific Economic Update 2011, Volume 1: Securing the Present, Shaping the Future**. World Bank, Washington, DC, USA.

World Bank (2011). **The Global Program on Fisheries: Strategic Vision for Fisheries and Aquaculture**. Agriculture and Rural Development Department, World Bank Group, Washington, DC, USA.

World Bank (2011). **The World Bank Group Framework and IFC Strategy for Engagement in the Palm Oil Sector**. World Bank/ International Finance Corporation, Washington, DC, USA.

Zeller, D., S. Booth and D. Pauly (2005). **Fisheries contributions to GDP: Underestimating small-scale fisheries in the Pacific**. Working paper # 2005-05, Fisheries Centre, University of British Columbia, Vancouver, Canada.

Appendix 1: The Pacific Plan and fisheries

1. At a regional level the major initiative in recent years has been the establishment of the Pacific Plan[68] (formulated in 2005 and revised in 2007) which proposes approaching the economic development challenges that PIC face through a framework of greater regional cooperation and integration. Central to the Pacific Plan are a number of initiatives, to be implemented over a period of ten years, and developed around the four 'pillars' of economic growth, sustainable development, good governance and security. The pillars are intended to represent the key areas and challenges that the Pacific as a region must address in order to raise living standards, increase access to opportunity and stimulate pro-poor growth. The key themes for action identified under each of the pillars are:

- Economic growth:
  - Increased sustainable trade (including services) and investment;
  - Improved efficiency and effectiveness of infrastructure development and associated service delivery;
  - Increased private sector participation in and contribution to development;

- Sustainable development:
  - Reduced poverty
  - Improved natural resource and environmental management;
  - Improved health;
  - Improved education and training;
  - Improved gender equality;
  - Enhanced involvement of youth;
  - Increased levels of participation and achievement in sports;
  - Recognized and protected cultural values, identities and traditional knowledge;

- Good governance:
  - Improved transparency, accountability, equity and efficiency in the management and use of resources in the Pacific;

- Security:
  - Improved political and social conditions for stability and safety

2. The Plan identifies three ways of testing whether regionalism can add value to an initiative:

- Market Test: Is the market providing a service well? If so, involvement by national governments and/or regional bodies should be minimal.

- Subsidiarity Test: Can national or local governments provide the service well? If so, involvement by regional bodies should be minimal. For example, primary and secondary education is generally managed by local and national governments, but

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[68] Forum Secretariat (2007). **The Pacific Plan for Strengthening Regional Cooperation and Integration (revised edition)**. Pacific Islands Forum Secretariat, Suva, Fiji.

for small Pacific Island states a regional university such as USP is an ideal initiative;

- Sovereignty Test: Does the proposed regional initiative maintain the degree of effective sovereignty held by national governments? Regional initiatives should shift only the management of services to regional bodies, not policy-making as well. Countries, not regional bodies, should decide priorities.

3. The Plan notes that regional initiatives usually begin with cooperation. Whether the best approach is then a move towards regional integration, or regional provision of services (or both) depends on the obstacles to development and consideration of benefits and costs. In the Pacific, regional approaches to overcoming capacity limitations in service delivery at a national level and increasing economic opportunities through market integration are expected to provide the highest gains.

4. The Plan was endorsed by Forum Leaders at the PIF Meeting in Madang, PNG in October 2005, and now forms the basis of ongoing efforts to strengthen regional cooperation and integration. Implementation of the Plan is, in the first instance, the responsibility of the Forum Secretariat. Policy oversight and guidance to ForSec is provided by the Pacific Plan Action Committee (PPAC), chaired by the Forum Chair and comprising representatives of all Pacific Island Forum Countries and Territories, as well as the Heads of CROP agencies. As Chair of PPAC, the Forum Chair reports to Leaders on the implementation of the Plan on an annual basis, focusing on the benefits and outcomes for Pacific Island countries. A small implementation unit, reporting to the ForSec Deputy Secretary General, is established in the Secretariat to support the PPAC and to coordinate implementation and reporting on the Plan.

5. When the Pacific Plan was first formulated, several fishery-related actions were identified for immediate action (i.e. between 2006-2008) under the first three pillars, as follows:

- Economic Growth:
  - Maximize sustainable returns from fisheries by development of an ecosystem-based fishery management planning framework;
  - Encouragement of effective fisheries development, including value-adding activities;
  - Collaboration to ensure legislation and access frameworks are harmonized;

- Sustainable Development:
  - Development and implementation of national and regional conservation and management measures for the sustainable utilization of fisheries resources;

- Good Governance:
  - Enhancement of governance mechanisms, including in resource management and in the harmonization of traditional and modern values and structures.

6. A number of other cross-cutting issues with relevance to the fisheries sector were also identified in the Plan, including: upgrading and extending country and regional

statistical information systems and databases in all sectors; development and implementation of strategies and associated legislation for maritime security and surveillance, and for biosecurity; and various priorities relating to trade in goods, trade in services, bulk purchasing and distribution of fuel, and combating corruption.

7. The PIF meeting of November 2007 in Vava'u, Tonga, focused particularly on fisheries matters, and made several amendments to the Plan[69], many of which concerned fisheries. At that meeting, Forum Leaders:

- reaffirmed the importance of fisheries to the economies of all Forum Member countries, and committed themselves to promoting domestic fisheries, in particular the development of national tuna industries, in the context of a phased introduction of rights-based management arrangements supported by an appropriate management and regulatory framework;

- committed to:
  - maintaining regional solidarity among Forum member countries in managing the region's tuna stocks;
  - strengthening their support for FFA, SPC and other regional fisheries bodies as they intensify their efforts in applying a long-term strategic approach to Pacific fisheries, and to tuna species in particular, to ensure that these resources are effectively managed so as to provide enduring economic, social and cultural benefits; and
  - upholding and strengthening the existing regional and national arrangements, agreements and conservation measures that protect this essential resource;

- committed themselves and their governments to the conservation and sustainable management of highly migratory tuna resources by:
  - fully implementing without delay the conservation and management measures developed and endorsed by the WCPFC;
  - seeking the urgent adoption of additional measures by the WCPFC to address over-fishing of bigeye and yellowfin, including a reduction in longline catches and addressing purse seine fishing, and specific steps to reduce the catch of juvenile bigeye and yellowfin;
  - developing and implementing, with the assistance of the FFA, a comprehensive regional MCS strategy; and
  - continuing support as appropriate for the current tuna tagging initiative of the SPC, including the aspiration that it expand to cover the rest of the Pacific;
- reaffirmed the Declaration on Deep Sea Bottom Trawling adopted at the 2006 Nadi Forum, welcomed the subsequent United Nations General Assembly (UNGA) Resolution 61/105 which called for strong measures to regulate and manage deep sea bottom trawling, and committed to the protection of high seas biodiversity and the conservation and management of non-highly migratory fish stocks in the Pacific Ocean;

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[69] Forum Secretariat (2007). **The Pacific Plan for Strengthening Regional Cooperation and Integration (revised edition). Attachment E (A): Vava'u Decisions on the Pacific Plan.** Pacific Islands Forum Secretariat, Suva, Fiji.

- encouraged effective participation in the negotiations to deliver a best-practice South Pacific Regional Fisheries Management Organisation in view of the longer-term strategic significance to Members and the possible interaction of the high seas pelagic stocks with tuna resources governed by the WCPFC;

- committed to the development and management of coastal/ inshore fisheries and aquaculture to support food security, sustainable livelihoods and economic growth for current and future generations of Pacific people;

- agreed to raise these deep concerns as a matter of urgency with Distant Water Fishing Nations and regional coastal states participating in the Post-Forum Dialogue, and urge their close cooperation with Forum Members' efforts.

8. In addition, the meeting issued the Vava'u Declaration on Fisheries ('Our Fish, Our Future'), one of the strongest and most comprehensive regional fisheries policy statements of recent years. The Declaration is shown in full at Appendix 4. The meeting also made a number of other amendments to the Pacific Plan in regard to regional trade, climate change and other cross-cutting issues of relevance to the fisheries sector.

9. At the 40th Meeting of the PI Forum held in Cairns, Australia in August 2009, Leaders endorsed five modified themes and priorities for the Pacific Plan for the years 2010 to 2012, as follows:

- fostering economic development and promoting opportunities for broad-based growth;

- improving livelihoods and the well-being of Pacific peoples;

- addressing the impacts of climate change;

- achieving stronger national development through better governance; and

- ensuring improved social, political and legal conditions for stability, safety and security.

10. Specific fisheries-related activities prioritized for implementation under these themes included:

- continuing to support action in the fisheries sector which would see commitment to implementing the direction offered by the Forum Leaders through the Vava'u Declaration and Forum Fisheries Committee, and in particular:
  - progressing the development and implementation of fisheries management and development regimes including Regional Strategies on Sustainable Fisheries;
  - WCPFC conservation and management measures;
  - MCS Strategies;
  - addressing ongoing barriers to international market access;
  - re-negotiation of the Multilateral Treaty on Fisheries between PI States and the USA;

- fostering of coastal fisheries; and
- strengthening the sector's governance

- building on existing marine protected areas and initiatives;

- building support, with the assistance of regional and international partners, for the new Coral Triangle Initiative on Coral Reefs, Fisheries and Food security, and capitalizing on the offer made by Papua New Guinea and Solomon Islands to share relevant lessons learned.

- continuing efforts to better ensure food security for people across the region and, in particular, expediting efforts to improve food standards and food quality and support agriculture, aquaculture and fisheries.

11. The Cairns Forum meeting acknowledged a new proposal for regional action in the area of ocean management, the 'Pacific Oceanscape' concept, and its 'Pacific Ocean Arc' component tabled by Kiribati, aimed at increasing marine protected area investment, learning and networking. The meeting tasked ForSec, together with relevant CROP agencies and key partners, to develop a framework for the Pacific Oceanscape (Appendix 3), drawing on the PIROP (Appendix 2) as a priority area for attention under the Pacific Plan. The Oceanscape concept is currently the subject of a proposal being prepared by the Forum Secretariat for GEF funding consideration.

12. At the same meeting Forum Leaders adopted the Cairns Compact on Strengthening Development Coordination in the Pacific. The Compact reflected a renewed determination by Leaders to lift the economic and development performance of the region and to drive more effective coordination of available development resources, centered on the aim of achieving real progress against the Millennium Development Goals (MDG)70. The Cairns Compact is an integral part of the Pacific Plan: in essence the Plan reflects the Forum's agreed priorities for the Pacific region (the 'what'), while the Cairns Compact is a statement of how these priorities should be implemented (the 'how').

13. The Forum Secretariat's 2010 report on implementation of the Plan71 notes that there has been significant progress in implementing the Cairns Compact over the past year, including in regard to the Plan's fisheries priorities and activities. Foremost among these were the establishment of the PNAO in January 2010, and the adoption of the Regional MCS Strategy by the 74th meeting of the Forum Fisheries Committee (FFC) in May 2010, providing the basis for regional and national actions to allow FFA members

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70 See UNDP (2011). **The Millennium Development Goals Report 2010**. United Nations Development Program, New York, USA. There are eight MDG, as follows: Eradicate extreme poverty and hunger; Achieve universal primary education; Promote gender equality and empower women; Reduce child mortality; Improve maternal health; Combat HIV/ AIDS, malaria and other diseases; Ensure environmental sustainability; and Develop a global partnership for development. Fulfilment of the MDG is through performance against 21 separate targets, which are meant to be achieved by 2015.

71 Forum Secretariat (2010). **Pacific Plan 2010: Annual Progress Report**. Pacific Islands Forum Secretariat, Suva, Fiji.

greater control over fishing activities in their waters. The observer program continued to be successfully implemented, with around 250 observers trained. During the FAD closure period in 2009, there was 100% observer coverage for all purse-seine vessels licensed under regional and sub-regional arrangements. Development of negotiating strategies for the WCPFC was on-going, and FFA members commenced negotiations with the US Government on the future of the Treaty on Fisheries. Major work continued on implementation of an ecosystem approach to fisheries management, and further critical research was conducted on sustainable yields and fisheries impact for bigeye, yellowfin, and albacore tuna in the South Pacific Ocean.

14. At the 41st Forum Meeting of August 2010 in Port Vila, Vanuatu, Leaders noted the ForSec report and welcomed the key achievements, including strengthened regional approaches to fisheries conservation and management through the collaborative work of FFA and SPC and the efforts of the PNA. Leaders reaffirmed the Pacific Plan priorities for 2010-2013 and noted that the CROP Executives had highlighted five additional key issues for the attention of Leaders in response to major trends, or to unexpected events in the region. As well as health, education and climate change issues, these included finalizing the delineation of permanent maritime boundaries in the region, which remains a major impediment to PI countries realizing maritime economic development opportunities. Leaders also highlighted the ongoing need for effective and coordinated bilateral and regional cooperation to address maritime safety issues72.

15. The meeting also received and welcomed a report73 from SPC and FFA on the future of PI fisheries, and reaffirmed the importance of managing this resource sustainably and responsibly to the optimum benefit of the peoples of the Pacific. In this regard Leaders recalled the 2007 Vava'u Declaration on fisheries matters, particularly highlighting their call for strengthened mechanisms to protect fisheries via new regional arrangements for exchange of fisheries law enforcement data, cross-vesting of enforcement powers and the use of fisheries data for other law enforcement activities.

16. In addition, the Forum Leaders:

- endorsed recommendations by Fisheries Ministers to negotiate a region-wide Niue Treaty Subsidiary Agreement and instructed officials to proceed expeditiously with the negotiation process to conclude no later than the end of 2012;
- endorsed the Regional Monitoring Control and Surveillance Strategy as the overarching framework to support the fisheries management objectives of FFA members and to guide FFA members in complementing and strengthening existing MCS arrangements;

- welcomed the generous offer of NZ$ 4.8 million for training of Pacific fisheries observers by the New Zealand Government;

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72 Forum Secretariat (2010). **Forum Communiqué**. Forty-first Pacific Islands Forum, 4-5 August 2010. Port Vila, Vanuatu. Pacific Islands Forum Secretariat, Suva, Fiji.

73 Gillett, R. D. and I. Cartwright (2010). **The future of Pacific Island fisheries**. Secretariat of the Pacific Community, Noumea, New Caledonia/ Pacific Island Forum Fisheries Agency, Honiara, Solomon Islands.

- agreed and endorsed the implementation of the Regional Economic Integration in Pacific Tuna Fisheries program as a tool to assist FFA members gain additional economic returns from their fisheries resources;

- tasked SPC, FFA and other relevant regional organisations to explore options for optimizing fisheries commercialization to increase fisheries revenue beyond licensing fees, and to prepare and submit through the Forum Secretariat a report on fisheries commercialization for further consideration by the Forum Economic Ministers (FEMM) 2010 meeting[74];

- encouraged the formation of new regional partnerships between Forum members on commercial fisheries enterprises, especially in processing activities under a new Forum process on fisheries commercialization to be developed by FFA and SPC.

17. Leaders also reiterated the importance of ensuring the sustainable development, management and conservation of the Pacific Ocean, and endorsed the Framework for a Pacific Oceanscape developed by the CROP MSWG and other partner agencies (see Appendix 3).

18. As can be seen, the fisheries sector in the PI region is dynamic and evolving quickly, with new developments and priorities being set each year, mainly through the Pacific Plan. Although significant achievements have been realized, most of the Plan's fisheries and other ocean-related activities remain works in progress. The Plan 2010 progress report notes that major constraints in this sector include the availability of funding and capacity of members to fully implement the legislative frameworks for sustainable fishing.

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[74] The paper subsequently presented was: Forum Secretariat (2010). **Maximising the Sustainable Returns from Fisheries Resources in the Pacific**. Briefing paper prepared by the Pacific Islands Forum Fisheries Agency. Forum Economic Ministers' Meeting, 26-28 October 2010, Alofi, Niue. Pacific Islands Forum Secretariat, Suva, Fiji.

Appendix 2: Pacific Islands Regional Ocean Policy

1. At their 1999 meeting in Koror, Palau, Pacific Islands Forum Leaders endorsed a list of recommendations emerging from the Pacific Regional Follow-up Workshop on the Implementation of the Law of the Sea Convention, convened in Tonga in 1999. Although most of the recommendations could only be implemented by national governments, one of them — the production of a regional ocean policy — was adopted as a regional level initiative. The CROP Marine Sector Working Group was tasked with the development of the policy, with SPC taking the role of lead agency. The draft PIROP was presented to official meetings and governing councils of the various CROP organisations and subsequently endorsed by the 33rd Pacific Islands Forum in 2002. In doing so, Forum leaders called for follow-up action plans, both for the region and for individual countries.

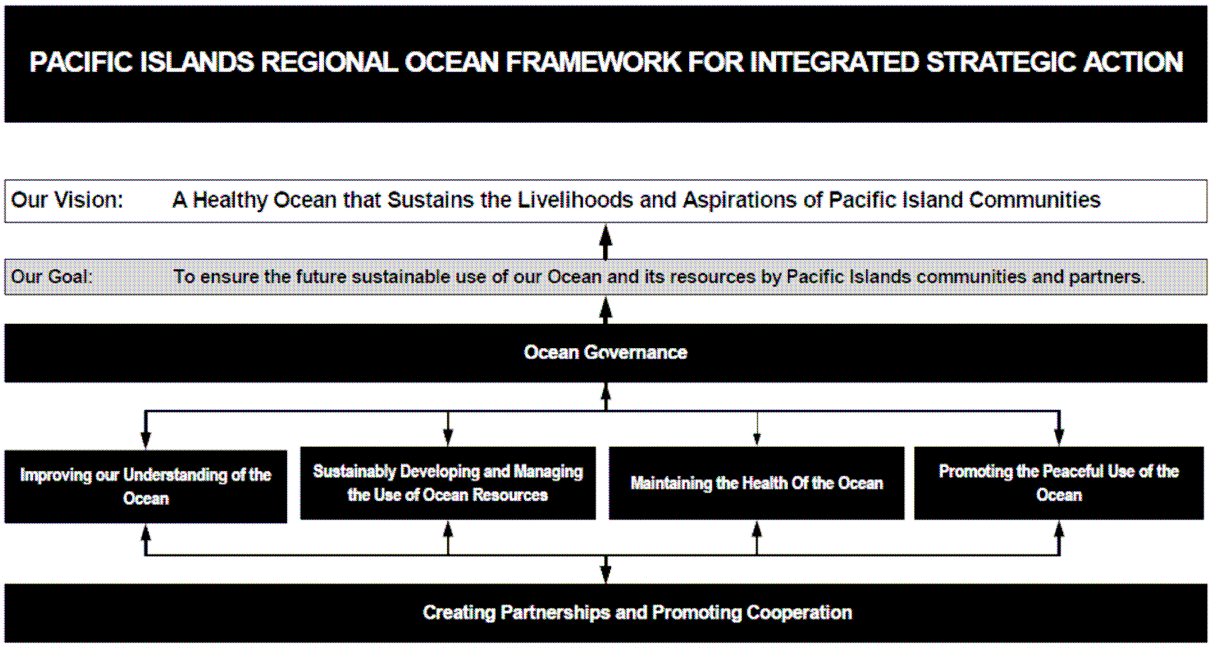
2. The policy seeks to realize the vision of 'a healthy ocean that sustains the livelihoods and aspirations of Pacific Island communities'. Pacific leaders directed the CROP agencies to devise a plan for implementation of the policy, a process that began in February 2004 when CROP convened a five-day Pacific Islands Regional Ocean Forum, which brought together some 200 stakeholders from government, fishing and shipping industries, the NGO community, civil society and other organisations across the region. The meeting discussed ways to:

- Improve governance of coasts and the ocean
- Adopt an integrated approach to sustainable development and management
- Build capacity of Pacific Island communities for sustainable development and management
- Foster alliances for securing a healthy ocean
- Establish high-level leadership on ocean issues and commitment to effective management of ocean resources

3. The meeting produced an initial draft of a Pacific Island Regional Ocean Framework for Integrated Strategic Action (PIROFISA) which was subsequently further developed and finalized with financial and technical support from SPC[75]. The vision, goal and principles of the final PIROFISA are illustrated in Figure 10~~Figure 10~~ below.

Figure 10: Structure of the Pacific Islands Ocean Framework for Integrated Strategic Action (PIROFISA)

[75] SPC (2005). **Pacific Islands Regional Ocean Policy and Framework for Integrated Strategic Action**. Secretariat of the Pacific Community, Noumea, New Caledonia.



4. The five PIROFISA principles are further subdivided into 19 ‘initiatives’ or action areas, listed in Box 4 below. These in turn are supported by a total of 92 specific actions to be variously carried out at national or regional level in order to give effect to the policy.

Box 4: PIROFISA Principles and Initiatives

- Improve governance of coasts and the ocean
  - Establish high-level leadership on ocean issues with a commitment to effective management of ocean resources. Encourage, through existing organisational relationships, the development of increased national commitment to effective management of ocean resources.
  - Review, strengthen and/or establish policy, legal and regulatory mechanisms in accordance with national and regional needs and capacities.
  - Engage stakeholders, including local communities, civil society organisations and national government agencies, in resource management decision-making and strengthen consultative, coordination and implementation arrangements.
  - Develop National Ocean Policies and Action Plans.
- Improving our understanding of the ocean
  - Identify and prioritise information needs and expand information gathering efforts.
  - Improve access to information (while ensuring protection of sensitive information), enhance knowledge management, and improve the use of information in decision-making.
  - Promote formal and informal education, training and capacity building of local people in marine science, marine affairs and related disciplines.
  - Communicate ocean issues effectively to build strong public support for sound ocean management.
- Sustainably managing and developing the use of ocean resources.
  - Adopt an integrated approach to development and management of the ocean and coasts.
  - Address social, economic and cultural issues associated with resource development and management decision-making.
  - Encourage equitable sharing of resource access and benefits at local, national and regional levels.
- Maintaining the health of the ocean
  - Assess and address all sources of pollution and contamination impacting on the ocean and coasts.
  - Address threats from introduced and invasive species.
  - Protect and conserve biological diversity, including ecosystems, species and genotypes, at local, national and regional scales.
- Promoting the peaceful use of the ocean
  - Enhance monitoring, compliance and enforcement initiatives.
  - Ensure all activities meet relevant international, regional and national standards.
  - Monitor progress in implementing PIROP.
- Creating partnerships and promoting cooperation
  - Develop international partnerships that promote the interests and special concerns of Pacific Island states.
  - Utilize partnerships and collaboration to the fullest extent possible in the implementation of PIROP and the PIROFISA

5. The Policy views the ocean in a broad sense and defines it to include the waters of the ocean, the living and non-living elements within, the seabed beneath and the ocean-atmosphere and ocean-island interfaces, and recognizes that:

- The ocean is a trans-boundary and dynamic resource;
- Threats to the ocean's long term integrity are increasing in number and severity;
- Sustainable economic and social development in the region is dependent on the wise use of the ocean and its resources.

6. Mention is also made of the important role of communities and customary resource owners in developing and applying local resource management arrangements, and the importance of considering all components of ecosystems and the impacts of land-based activities on them.

7. According to SPC[76]. a key ocean policy function is to provide a common set of principles to different, and occasionally competing, ocean-users and sectoral administrations, as guidance about what path to take when interests diverge by keeping in sight the 'big picture' – a picture that goes beyond fisheries, beyond shipping, and even beyond the interests of individual jurisdictions. The PIROP itself is a simple distillation of the various principles already committed to by PIC in various international and regional conventions and agreements. It is not a blueprint or a set of legal instructions, but a basic statement of fundamental principles to ensure consistency in future agreements and commitments.

8. The PIROP formed one of the major planks of the Pacific Islands regional position at the World Summit on Sustainable Development (WSSD) in Johannesburg in September 2002, and was subsequently submitted to the Mauritius Small Island Developing States (SIDS) meeting in January 2005. The PIROP has also been introduced to the international community at the UN Informal Consultative Process on Oceans and Law of the Sea (UNICPOLOS), and it has more than once been suggested by different UNICPOLOS co-chairs that its principles could be a useful starting point for the development of a possible future global oceans policy. Information on the PIROP has also been included in documents prepared for the 12th meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea (June 2011), the 21st Meeting of States Parties to the United Nations Convention on the Law of the Sea (July 2011) and the 66th Session of the UN General Assembly (September 2011)[77].

9. One of the main initiatives expected as a follow-up to PIROP was the development of national Ocean Policies, based on the principles of the regional policy, but elaborated through consultative processes that would take account of specific national systems and priorities. So far, however, progress in developing such policies has been limited. The PIROFISA also suggests several regional-level initiatives and processes, but progress will probably only occur if significant new resources are found and dedicated to the further development of PIROP, since individual CROP organisations have reached the limit of their abilities to drive this forward without detracting from existing work-

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76 SPC (2005). **Regional Policies, Inter-Agency Processes and the Pacific Plan (abridged version – contains only ocean and fishery issues)**. Working Paper 4, 4th Meeting of the Conference of the Pacific Community, 18 November 2005, Koror, Palau. Secretariat of the Pacific Community, Noumea, New Caledonia.

77 United Nations (2011). **Unedited reporting material on the topic of focus of the twelfth meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea, entitled: "Contributing to the assessment, in the context of the United Nations Conference on Sustainable Development, of progress to date and the remaining gaps in the implementation of the outcomes of the major summits on sustainable development and addressing new and emerging challenges"**. A/66/70/Add.1. UN General Assembly, Sixty-sixth session, September 2011. United Nations, New York, USA.

programs[78]. It was anticipated that resourcing for a position of PIROP Coordinator might become available through the Pacific Plan, but this has not so far eventuated and as a result little further progress has been made with PIROP in recent years.

10. The PIROP provides the most comprehensive Ocean policy guidance of any regional document of its type, but does not define an adequate coordination mechanism or resourcing system. The PIROFISA is due for review in the near future, and this may provide an opportunity to strengthen its implementation as well as its coverage of issues such as climate change, protected areas and fisheries which have received increasing emphasis through the Pacific Plan (Appendix 1) and Forum Leaders Communiqués (section 0 and Appendix 4).

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78 SPC (2004). **Divisional presentation: Marine Resources. Supplementary: Update on Pacific Islands Regional Ocean Policy**. 34th Meeting of the Committee of Representatives of Governments and Admninistrations, 16-19 November 2004, Noumea, New Caledonia. Secretariat of the Pacific Community, Noumea, New Caledonia.

Appendix 3: Pacific Oceanscape

1. At the 40th Pacific Islands Forum meeting held Cairns, Australia in August 2009, the Republic of Kiribati showcased its vision for 'a secure future for Pacific Island Nations based on ocean conservation and management' under its Pacific Oceanscape concept and related Pacific Ocean Arcs initiative, as detailed in Box 2 below.

Box 5: Kiribati vision for the Pacific Oceanscape/ Ocean Island Arcs Framework

Kiribati announces its intention to develop a Pacific Oceanscape that:

- Creates a series of Pacific Ocean Arcs - these are based on the natural island archipelago nature of the Pacific, inclusive of land and sea, including the Exclusive Economic Zone (EEZ). These Arcs embody a focus on integrated marine and terrestrial protected area development and the overall conservation and sustainable development of some of the world's most pristine and remote coral reef based marine ecosystems. These Pacific Ocean Arcs are the building blocks or foundation units of an Oceanscape. This component seeks to address the investment needed for protected areas in particular in the central Pacific but potentially more widely across the Oceanscape. They will notably assist states meet their commitments under the Convention on Biological Diversity;
- Kiribati announces the first two Pacific Ocean Arcs in the program – the Phoenix Islands and Line Islands Ocean Arcs. Kiribati warmly invites the United States of America to develop collaborative management of these entire island archipelago systems so as to ensure Arc integrity. For its part Kiribati has established the Phoenix Islands Protected Area (PIPA) covering more than 400,000 sq km and recognizes that the USA possessions of Howland and Baker Islands, the remaining two Phoenix Islands are now part of the new USA Pacific Marine National Monuments. Kiribati is currently assessing protected area needs in its Line Islands as well as addressing key threats such as invasive species and recognizes that the remaining USA possessions of Kingman Reef, Palmyra Atoll and Jarvis Island are now also part of the USA Pacific Marine National Monument. A key gap is to develop effective co-management, cooperation and peer learning across these two Pacific Ocean Arcs to ensure the Phoenix and Line Islands in their entirety retain their status as two of the most pristine coral reef archipelagos remaining in the world today;
- Kiribati warmly invites other Pacific States to join and work together to develop and expand the Pacific Ocean Arc concept and notes the opportunity for discussions at the forthcoming Regional Marine Areas Meeting in French Polynesia in November 2009. Expansion in this way will readdress the current imbalance and relative lack of investment in protected areas in the Pacific;
- Kiribati invites interested Forum partners, donors, inter and non government organizations to join and support this effort through partnership, capacity building and resourcing;
- Kiribati acknowledges Conservation International and the New England Aquarium as foundation partners in the Phoenix Islands Ocean Arc and further welcomes the commitment of these organisations to provide expertise, training and resources for this initiative;
- Kiribati recognizes that to build component Pacific Ocean Arcs to a Pacific Oceanscape will require effectively addressing:
    - high seas management, including the creation of high seas MPA;
    - tuna management. Kiribati will continue to pursue this through its membership of regional fisheries agreements and agencies, in particular the Nauru Arrangement, and through new measures including 100% observer coverage on DWFN vessels;
    - the impacts of global climate change, including ensuring that island states' EEZ are not compromised by sea level rise as a key measure of ensuring island state economic security from fisheries license income;
    - migratory and threatened species conservation needs within Arcs and the Oceanscape, reflecting more truly these species ranges and needs;
    - investment and ongoing sustainable financing for Arc and Oceanscape management and cooperation;
    - collaboration and co-management across arcs and mutual learning with states, including those PIC involved in the Coral Triangle Initiative and the Micronesia Challenge;
- Kiribati calls on all members of the PI Forum and associated regional agencies to support the development of the Pacific Ocean Arc program building to realise an effectively managed Pacific Oceanscape in our region that will provide impetus for increased leadership and cooperation for the entire Pacific Ocean and ocean management globally.

2. The components envisaged by Kiribati under the Pacific Oceanscape proposal were:

- Pacific Ocean Arcs: aims to foster development of terrestrial and marine protected areas (MPA) based on the natural archipelagic nature of some PIC, including consideration of territorial domains associated with EEZ and opportunities for protected areas in the surrounding high seas. For many such archipelagos, the implementation of Ocean Arcs will necessitate a trans-boundary approach and associated collaboration between nations;

- Climate Change and Ocean Security: recognizes the emerging issues that may impact on the Pacific Ocean, including acidification and increasing temperatures. This component also aims to investigate governance issues, including the security of EEZ and associated management and monitoring of high seas areas;

- Leadership and Learning: cuts across the first two components in that it seeks to support learning across initiatives e.g. protected areas and to support targeted research, learning and leadership in key areas for both the preceding components.

3. According to the briefing paper[79] presented to the Forum meeting, "Kiribati recognizes and applauds the efforts made for conservation and the environment through the innovative Micronesia Challenge[80] and more recently the Coral Triangle Initiative[81]. Kiribati further recognizes that the central Pacific, including islands of southern Micronesia and Polynesia, has had comparatively little attention or investment for protected area development and related environment initiatives. Kiribati believes the time is appropriate to address this imbalance as the central Pacific contains some of the most pristine and robust coral reefs, islands and marine systems remaining in the world today".

4. The same document provides additional details of Kiribati's vision for a Pacific Oceanscape:

- a Pacific Oceanscape could extend from Micronesia, Melanesia and throughout Polynesia, noting the opportunity for the Pacific Oceanscape to traverse tropical and temperate systems from Hawaii to New Zealand, encompassing millions of square kilometers of ocean;

- in recent years a variety of innovative and important ocean conservation and management initiatives have emerged in the Pacific, including the Micronesia

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79 Tong, A. (2009). **Pacific Oceanscape: A Secure Future for Pacific Island Nations based on Ocean Conservation and Management**. Briefing paper for 40th Pacific Islands Forum Meeting, August 2009, Cairns, Australia. Pacific Islands Forum Secretariat, Suva, Fiji.

80 The Micronesia Challenge is a regional inter-governmental initiative established in 2005 that aims to facilitate more effective conservation of marine and forest resources in Palau, FSM, Marshall Islands, Guam and Northern Mariana Islands. The goal is to conserve 30 percent of near shore coastal waters and 20 percent of forest land by 2020.

81 The Coral Triangle refers to a roughly triangular area of the tropical marine waters of Indonesia, Malaysia, PNG, Philippines, Solomon Islands and Timor-Leste that is recognised as the global epicentre of marine biodiversity and a priority for conservation. A number of NGO consider the region a top priority for marine conservation, and have teamed up with the international donor community to establish the CTI.

Challenge, The Phoenix Islands Protected Area, the United States Pacific Islands Marine Monuments, the Nauru Agreement, the Coral Triangle Initiative, and others. As part of the Pacific Oceanscape, active partnership among these initiatives and their participating states would be strongly fostered;

- the Pacific Oceanscape potentially provides a larger framework, consistent with Pacific Forum Leaders 2006 Ocean Policy, to look at all ocean-related initiatives together. In essence the Pacific Oceanscape demonstrates a new scale and level of ocean stewardship in the region.

5. The 40th PIF meeting endorsed the concept and tasked the Forum Secretariat, together with relevant CROP agencies and key partners, to develop a framework for the Pacific Oceanscape, drawing on the PIROP, as a priority area for attention under the Pacific Plan.

6. The draft Framework subsequently developed[82] proposes six Strategic Priorities and 18 supporting actions as a means of implementing the Pacific Oceanscape concept, as summarized in Box 6 below.

[82] Pratt, C. and H. Govan (2010). **Our Sea of Islands, Our Livelihoods, Our Oceania. Framework for a Pacific Oceanscape: a Catalyst for Implementation of Ocean Policy**. Secretariat of the Pacific Regional Environment Program, Apia, Samoa.

Box 6: Proposed Framework for a Pacific Oceanscape – Strategic Priorities and Actions

- Jurisdictional Rights and Responsibilities: Establishing jurisdictional rights and responsibilities over maritime zones:
  - PIC formalise maritime boundaries and secure rights over their resources;
  - Regional effort to fix baselines and maritime boundaries to ensure the impact of climate change and sea-level rise does not result in reduced jurisdiction of PIC.
- Good Ocean Governance: Setting policies and plans of action that promote the sustainable management and development of our ocean and its resources:
  - Leaders mandate a strengthening of the regional institutional framework for ocean governance and policy coordination;
  - Foster partnerships to integrate and implement ocean priorities in the Pacific Plan and other relevant regional and international instruments;
  - PIC incorporate sustainable use and development of coastal and ocean priorities in national development policy and planning;
  - PIC design and/or consolidate clear coordinated institutional mechanisms for integrated ocean and coastal management.
- Sustainable Development, Management and Conservation: Putting policy into action to reclaim stewardship of the ocean as core to our island livelihoods in a rapidly changing world:
  - PIC implement integrated coastal resource management arrangements drawing on the strengths and traditions of community, district, provincial and national levels of government to achieve sustainable island life;
  - PIC explore and build on marine spatial planning mechanisms for improved EEZ management to achieve economic development and environmental objectives;
  - Regional intergovernmental bodies explore and build on approaches to conserve and manage high seas resources and deep sea ecosystems for the common good.
- Listening, Learning, Liaising and Leading: Seeking ocean leadership based on enriching our culture further and reinforcing our identities while sharing and learning with others:
  - Facilitate processes that utilize existing knowledge and results in needs driven information acquisition and targeted capacity building for achieving policy and management objectives;
  - Influence international and regional ocean priorities, decisions and processes through reclaiming the Pacific Way and establishing a high level representation on oceans;
  - Connecting people and places for sharing, learning and action.
- Sustaining Action: Building self reliance through nationally cost effective solutions and realizing the value of regional and international partnership:
  - PIC to ensure cost-effectiveness of management approaches as a priority step towards sustainability of financing;
  - PIC incorporate consideration of the economic development benefits of sustainable management of coastal and marine resources in decisions affecting national development;
  - Explore and test financing mechanisms to support implementation of ocean priorities at regional and national level;
  - Enhance donor harmonisation and aid effectiveness to support implementation of ocean priorities at regional and national level.
- Adapting to a Rapidly Changing Environment: Seeking opportunities to adapt to, and mitigate, the impacts of climate change, climate variability, sea level rise, extreme events and, environmental and economic change:
  - Identify a centralized mechanism to assess emerging issues, manage risks and explore opportunities;
  - Ensure environmental and climate change adaptation and mitigation are appropriately incorporated into sustainable development, conservation and governance actions.

7. The Strategic Priorities and Supporting Actions outlined in Box XX fall under three broad objectives:

- Integrated Ocean Management at all scales to promote sustainable development, management and conservation of island, coastal and ocean services in a manner that that responds to PIC development aspirations, ensures environmental health and maintains ecological function;

- Adaptation to Environmental and Climate Change – develop suitable baselines and monitoring strategies to inform impact scenarios and specific understanding of environmental and climate change stressors;

- Liaising, Listening, Learning and Leading – appropriate collaborative processes to achieve the two preceding objectives, while recognizing the rights of partners and stakeholders.

8. The draft Framework was presented to the 41st Forum Meeting, held in August 2010 in Port Vila, Vanuatu. Leaders endorsed the Framework for a Pacific Oceanscape and acknowledged with thanks the efforts of the Marine Sector Working Group and partners in developing it. The meeting strongly encouraged continued Forum leadership and regional cooperation and tasked CROP agencies to implement the Framework in partnership with other relevant organisations. The Oceanscape concept is currently the subject of a proposal being prepared by the Forum Secretariat for GEF funding consideration.

Appendix 4: Vava'u Declaration on Pacific Fisheries Resources

THE VAVA'U DECLARATION ON PACIFIC FISHERIES RESOURCES "OUR FISH, OUR FUTURE"[83]
November 2007

We, the Leaders of the Pacific Islands Forum, meeting at Vava'u in the Kingdom of Tonga:
RECOGNISING that our regional fisheries resources remain a key driver for sustainable economic growth in the region, especially for small island states, and that they must as a consequence be supported by responsible and effective stewardship;

RECALLING the commitment by Leaders under the Pacific Plan to maximise sustainable returns from fisheries by developing an ecosystem based fisheries management planning framework; encouraging effective fisheries development, including value-adding activities; and collaboration to ensure legislation and access frameworks are harmonised;

ALSO RECOGNISING the aspirations of Pacific Island countries to strengthen their engagement in sustainable fisheries and to maximise the flow on benefits from both domestic fisheries and foreign fishing operations in the region;

RECALLING in this context our 2004 call for closer Ministerial oversight of Pacific fisheries issues;

NOTING with appreciation and deep concern the report on the current state of Pacific fisheries provided to us by the current Chair of the Forum Fisheries Committee, at the request of the Committee's 64th Meeting, held at Ministerial level;

COGNISANT of the significant economic opportunities which the regional fisheries resource offers to all our members, and of the comparatively low returns on the resource being achieved by countries in the region;

SEIZED by the scientific advice that over-fishing of two key regional tuna species – bigeye and yellowfin tuna – now places stock levels in jeopardy;

CONSCIOUS therefore of the imperative need for us to take immediate and decisive collective action to ensure that, within the next three to five years, we secure our peoples' future livelihoods, regional food security, and the environmental sustainability of our seas and their ecosystems;
HEREBY reaffirm the importance of fisheries to the economies of all Forum Member countries, and commit ourselves to:

- PROMOTING DOMESTIC FISHERIES, in particular the development of national tuna industries, in the context of a phased introduction of rights-based management arrangements supported by an appropriate management and regulatory framework;
- DEVELOPMENT AND MANAGEMENT OF COASTAL/INSHORE FISHERIES and aquaculture to support food security, sustainable livelihoods and economic growth for current and future generations of Pacific people;
- MAINTAINING REGIONAL SOLIDARITY among Forum member countries in managing the region's tuna stocks;

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[83] Forum Secretariat (2007). **The Pacific Plan for Strengthening Regional Cooperation and Integration (revised edition)**. **Attachment E (B).** Pacific Islands Forum Secretariat, Suva, Fiji.

- STRENGTHENING OUR SUPPORT for the Forum Fisheries Agency, the Secretariat of the Pacific Community and other regional fisheries bodies as they intensify their efforts in applying a long-term strategic approach to Pacific fisheries, and to tuna species in particular, to ensure that these resources are effectively managed so as to provide enduring economic, social and cultural benefits;
- UPHOLDING AND STRENGTHENING the existing regional and national arrangements, agreements and conservation measures that protect this essential resource; and

CONSISTENT with our earlier calls for the sustainable utilisation of fisheries resources, and with our concerns regarding food security for future generations, we further solemnly COMMIT ourselves and our governments to the conservation and sustainable management of highly migratory tuna resources by:

- FULLY IMPLEMENTING without delay the conservation and management measures developed and endorsed by the Western and Central Pacific Fisheries Commission (WCPFC);
- SEEKING THE URGENT ADOPTION OF ADDITIONAL MEASURES by the WCPFC to address over-fishing of bigeye and yellowfin, including a reduction in longline catches and addressing purse seine fishing, and specific steps to reduce the catch of juvenile bigeye and yellowfin;
- RECOGNISING THE ASPIRATIONS OF SMALL ISLAND DEVELOPING STATES to develop their domestic fisheries and CALLING ON DEVELOPED MEMBER COUNTRIES of the Commission to implement measures to support such endeavours;
- DEVELOPING AND IMPLEMENTING, with the assistance of the Forum Fisheries Agency, a comprehensive regional Monitoring, Control and Surveillance (MCS) strategy;
- INVESTIGATING AND TAKING APPROPRIATE STEPS as a matter of priority to strengthen, simplify and give full transparency to our national fisheries governance and licensing arrangements;
- CONTINUING OUR SUPPORT as appropriate for the current tuna tagging initiative of the Secretariat of the Pacific Community, including the aspiration that it expand to cover the rest of the Pacific; and
- SUPPORTING AND ENDORSING efforts by the Forum Fisheries Agency, supported by the Forum Secretariat, to take forward as a matter of urgency work to examine the potential for new multilateral Pacific regional arrangements patterned on the Niue Treaty Subsidiary Agreement model for exchange of fisheries law enforcement data, cross-vesting of enforcement powers, and use of fisheries data for other law enforcement activities; and

CONSISTENT with our previous deliberations, REAFFIRM the Declaration on Deep Sea Bottom Trawling adopted at the 2006 Nadi Forum and WELCOME the subsequent UNGA Resolution 61/105 which called for strong measures to regulate and manage deep sea bottom trawling;

COMMIT to the protection of high seas biodiversity and the conservation and management of non-highly migratory fish stocks in the Pacific Ocean;

ENCOURAGE effective participation in the negotiations to deliver a best-practice South Pacific Regional Fisheries Management Organisation in view of the longer-term strategic significance to Members and the possible interaction of the high seas pelagic stocks with tuna resources governed by the WCPFC;

AGREE TO RAISE THESE DEEP CONCERNS as a matter of urgency with Distant Water Fishing Nations (DWFNs) and regional coastal states participating in the Post- Forum Dialogue, and urge their close cooperation with our efforts; and,

REQUEST the Forum Fisheries Agency, the Secretariat of the Pacific Community, the Forum Secretariat and the Western and Central Pacific Fisheries Commission to jointly monitor progress in implementing these commitments, and reporting on this – especially progress in regional tuna management – under the Pacific Plan to Forum Fisheries Ministers and our next Leaders' Meeting for further consideration.

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