A Business Case for a Centre of Excellence in International Fisheries Development (CEIFD)

A component of the

World Bank and Global Environmental Fund (GEF)-funded

Oceans Partnership Programme in the

Bay of Bengal (OPP-BOB)

2018

EXECUTIVE SUMMARY

Objective and context

The objective of the following report is to present a business case focusing on the identification and assessment of opportunities for investment in a new and innovative Centre of Excellence for International Fisheries Development (CEIFD), based in Chennai, south India, which might be attractive to private and public investors. The work was undertaken in 2018 as part of the World Bank/GEF-funded Oceans Partnership Programme in the Bay of Bengal (OPP-BOB), hosted by the Bay of Bengal Inter-Governmental Organisation (BOBP-IGO) in Chennai.

Key definitions

To start, the business case development focused on two key definitions, as follows:

- *A business case is a document which sets out the justification for the undertaking of a 'project' (or intervention) based on the estimated cost of development (investment) and the anticipated benefits to be gained (returns and outcomes);*

- *The business case is used to say why the forecasted effort and time will be worth the expenditure*;

Methodology

The methodology used consisted of the following set of steps. First, the setting and context were described and the key issues and factors relevant to the future design and implementation of the business case were examined. Second, the specific business case or opportunity for investment was identified and described. Third, the investors who are likely to be interested in the opportunity were identified. Fourth, the development options for the business case opportunity were identified and compared, and the most viable alternative was chosen to take forward. Fifth, the probable time-scale and level of investment required were considered. Sixth, crucially, for investors trying to decide whether they should invest their capital in the opportunity proposed, or in an alternative, the expected performance of the investment was assessed using a benchmarking approach, by making a comparison with relevant international standards. Seventh, the assumptions and risks associated with the proposed investment opportunity were identified and examined. Finally, eighth, the overall conclusions and recommendations were presented.

Collaboration and information sources

The methodology was implemented by a team of international consultants from IDDRA Ltd working in close collaboration with the BOBP-IGO staff, and a large number of different stakeholders in south India, in the BoB region and internationally. A wide range of official and informal information and data were collected and used to underpin the work involved.

Business case (opportunity) identified - key features

- The business opportunity concerns the establishment of a new and innovative Centre of Excellence for International Fisheries Development (CEIFD) in Chennai, India, building upon and expanding the mandate and activities of the current Bay of Bengal Inter-Governmental Organisation (BOBP-IGO), capitalizing upon its well-recognised excellent reputation and high level of stakeholder engagement at all levels;

- The new centre will provide leadership to Bay of Bengal coastal states, focusing initially on highly valuable tuna resources and associated fisheries, in meeting the SDG goals through addressing three key themes as follows: improved governance and management capacity and accountability to

coastal states; high-level leadership capability supported by regional and international partnerships; and enhanced supporting management, information and financial systems;

- A full range of implementation mechanisms will be used including a leadership programme, development of policy and management systems, training and capacity-building, and provision of fisheries management and other technical services;
- An initial investment (US$ 64.93 million over 10 years) will be used to establish and operationalise the CEIFD, including infrastructure, planning and management arrangements, staffing, and systems design and implementation. In the long-run, the CEIFD aims to become self-funding through the sale of services and functional support to governments and private sector fishery organisations;
- Benefits and beneficiaries will occur at the level of the fishery, and wider society in general, through economic, social and environmental outputs from productive and sustainable fisheries, particularly profits and economic rent, and an investable surplus to stimulate economic growth;
- Most importantly, the new enabling conditions generated by the CEIFD will contribute to the achievement of the SDG 14 for all the partner countries involved.

Main conclusions

[1] UNTAPPED POTENTIAL: A number of countries of the Bay of Bengal, including India, do not have a large tuna fishing and processing sector, despite the presence of significant tuna stocks in the nearby Indian Ocean. Yellowfin tuna (YFT) is especially valued on international seafood markets. Such natural resources represent a potential source of untapped development opportunities which could contribute to Blue Growth and the realisation of the SDG 14. However, appropriate fisheries governance, which is currently lacking, is a critical pre-requisite to unlock this potential, especially the operation of effective fisheries management systems, underpinned by adequate human and technical capacity.

[2] BUSINESS CASE: A proposed new and innovative Centre of Excellence in International Fisheries Development (CEIFD), based in Chennai, will focus initially on improving the management of YFT fisheries, capable of generating economic benefit (rent) valued at US$ 420 million per annum. Some US$ 46 million of this value could be recovered from the EEZ of India in the BOB alone. Sri Lanka, Maldives and Bangladesh also have demonstrable potential to generate further value on a sustainable basis. The total cost of the investment in the CEIFD will be US$ 64.93 million over 10 years (or US$ 6 million per year) to cover set-up, development and operational costs. It is expected that this core investment, and its associated activities, will facilitate and lever additional investment at national level. Over time, the total costs of the CEIFD will be offset by appropriate cost recovery schemes and mechanisms as the fisheries grow and develop.

[3] BENCHMARKING AGAINST INTERNATIONAL BEST PRACTICE: The performance of the proposed investment in the CEIFD was considered against an international benchmark for tuna fisheries management – the Western Central Pacific (WCP) managed jointly by the Western Pacific Fisheries Commission (WCPFC), the Forum Fisheries Agency (FFA) and the Parties to the Nauru Agreement Office (PNAO). Currently, WCP coastal states capture economic rent worth US$ 500 million against a current investment of US$ 27 million p.a. in appropriate fisheries management (institutions and services). The BOB countries can expect to benefit similarly with suitably targeted investment in fisheries management, through the CEIFD - something which has been seriously

lacking up to now (under current RFMO arrangements) - including both regional coordination and capacity development in coastal states (Fig.A).

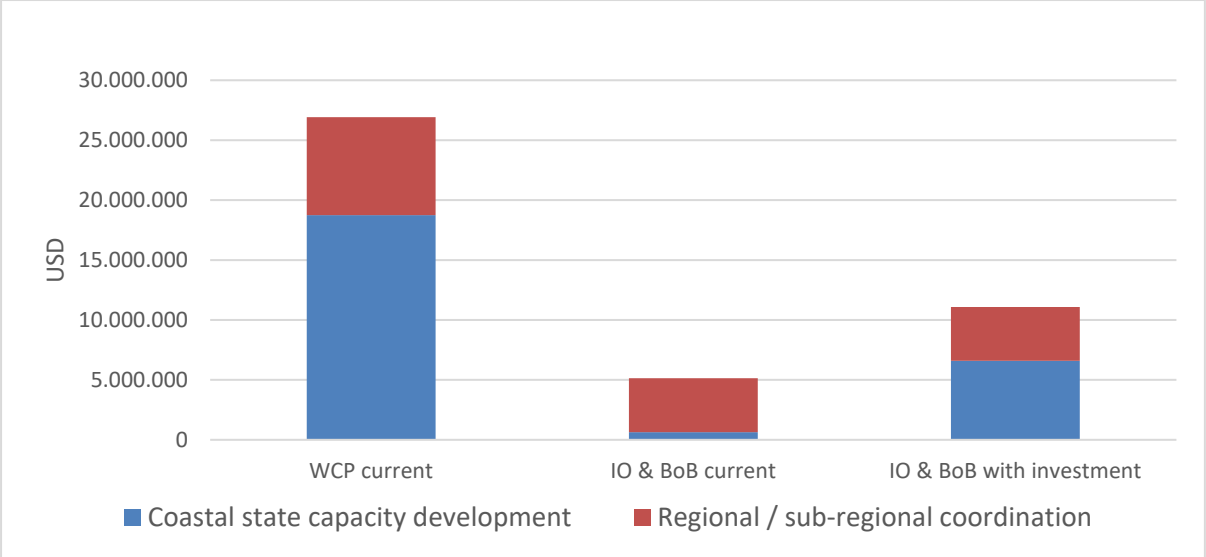
[4] RISKS AND ASSUMPTIONS: Amongst a range of identifiable factors, there are two major considerations. First, while the CEIFD will focus on BOB initially, it is assumed that fisheries management will also be increasingly effective throughout the IO, given the shared nature of the tuna stocks involved. Second, there is a risk of both political interference and resistance from potential competitor organisations at both national and international levels, as well as from some stakeholders.

Recommendations:

[1] It is recommended that potential investors, both within and outside the seafood sector, should give serious consideration to future investment in the CEIFD. The business case appears to be worthwhile, with a high level of return on investment, based on the best available data and information, and taking into account a number of assumptions and risks.

[2] It is also recommended, very strongly, that potential investors interested by the above business case should give added and careful consideration to the highlighted underlying assumptions and risks.

Figure A: Fisheries management cost comparison with and without investment and relative to investments currently made in the WCP.



TEAM OF INTERNATIONAL TECHNICAL CONSULTANTS (ITC)

Dr. Arthur E. Neiland (Team Leader)[1]

Mr. Michael Arbuckle

Dr. Steve Cunningham

Mr. Philip Townsley

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PHOTOGRAPHS

All of the photographs included in this report have been provided by Dr. Y.S. Yadava (Director, BOBP-IGO). Front page: Small-scale fishing craft at Pudimadaka, Visakhapatnam district, Andhra Pradesh, India.

[1] Contact point : IDDRA Ltd, Endeavour Quay, Mumby Road, Gosport, Hants, United Kingdom PO12 1AH; Email: neiland@iddra.org

ACRONYMS AND ABBEVIATIONS

ADB	Asian Development Bank
AusAid	Australian Aid
ANZ	Australia and New Zealand Banking Group Ltd
BC	Business Case
BOB	Bay of Bengal
BOBP-IGO	Bay of Bengal Programme Inter-Governmental Organisation
BMZ	German Federal Ministry for Economic Cooperation and Development
CMM	Conservation and Management Measures
EEZ	Exclusive Economic Zone
EU	European Union
FFA	Forum Fisheries Agency
FT	Financial Times
GEF	Global Environment Fund
GoI	Government of India
GTZ	German Technical Cooperation Agency
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
INR	Indian Rupees
IO	Indian Ocean
IOTC	Indian Ocean Tuna Commission
IPLF	International Pole and Line Foundation
KfW	German Government-Owned Development Bank
MCS	Monitoring, Control and Surveillance
MSC	Marine Stewardship Council
MSY	Maximum Sustainable Yield
NDB-BRICS	New Development Bank (Brazil, Russia, India, China, South Africa)
NGO	Non-Government Organisations

NORAD	Norwegian Agency for Development Cooperation
NPV	Net Present Value
NZAID	New Zealand Agency for International Development
OPP-BOB	Oceans Partnership Programme – Bay of Bengal
PNA	Parties to the Nauru Agreement
RARE	International NGO (Conservation)
RMFO	Regional Fisheries Management Organisation
ROI	Return on Investment
SD	Sustainable Development
SDG	Sustainable Development Goals
SFP	Sustainable Fisheries Partnership
SHMFS	Straddling and Highly Migratory Fish Stocks
SI	International System of Units
SIDA	Swedish International Development Cooperation Agency
SKJ	Skipjack Tuna
TENZ	Technology Education New Zealand
UK	United Kingdom
USA	United States of America
USAID	US Agency for International Development
USD	United States Dollars
WB	World Bank
WCP	Western Central Pacific
WCPFC	Western Central Pacific Fisheries Commission
WCS	Wildlife Conservation Society
YFT	Yellowfin Tuna

CURRENCY AND EXCHANGE RATES (December 2018, FT quoted)

Indian Rupee (INR) 1 = United States Dollar (USD) 0.014

USD 1 = INR 68.61

UNITS (SI)

Metric ton (or tonne) (mt) 1 = Kilogram (kg) 1,000

Million (M) = 1 million (1,000,000)

Billion = 1 thousand million (1,000,000,000)

CONTENTS

1. WHAT IS THE OBJECTIVE OF THIS BUSINESS CASE REPORT?

Key points
• This initial section sets the scene and defines the objective of the report; • To identify and assess opportunities for investment in a Centre of Excellence for International Fisheries Development (CEIFD), with reference to tuna fisheries in India and the Indian Ocean (IO), attractive to either (or both) private or public investors, in the first instance; • India does not have a large tuna fishing or processing sector, despite the presence of large tuna stocks in the nearby Indian Ocean – this represents a source of untapped potential to address Sustainable Development (SD) and Sustainable Development Goals (SDG); • Critical regional weaknesses include a lack of institutional capacity (fisheries development and management), policy coherence and alignment of investment; • A Centre of Excellence for International Fisheries Development (CEIFD) would address these issues, provide leadership in fisheries to Bay of Bengal coastal states in meeting the SDG goals, and overall represent a sound investment to enable the realisation of the inherent development potential of the marine resources involved.

The objective of this business case report is:

To identify and assess a clear opportunity, or opportunities, for investment in a Centre of Excellence for International Fisheries Development (CEIFD), with reference to IO tuna fisheries, which might be taken up and implemented by private sector or government stakeholders, or both, leading to the generation of significant benefits, relevant to the achievement of SDG goals.

The work which underpins this business case has been undertaken as part of the World Bank and GEF-funded Oceans Partnership Programme for Bay of Bengal (OPP-BOB), implemented by the Bay of Bengal Inter-Governmental Organisation (BOBP-IGO) between 2016 and 2018 (Appendix 1).

From an early stage, working closely with many stakeholders, it was recognized that the IO tuna resources represent a hugely valuable form of renewable natural capital. This could underpin a vibrant and profitable fisheries sector, with a positive impact on India's economy, through generation of wealth, taxable revenues, employment and traded goods and services. For the time-being, tuna is a small part of India's fisheries and seafood sector, despite the close proximity of large tuna resources.

On a global basis, tuna fisheries and tuna trade are amongst the most valuable in the seafood industry. Tuna products command high prices on both national and international markets in many locations.

Furthermore, while there is a massive investment in IO tuna fisheries, across many countries, there are also serious concerns about the effectiveness of fisheries management and the threat of overexploitation. Major contributory factors include lack of institutional capacity (fisheries development and management), lack of policy coherence and weak alignment between investments.

Overall, therefore, tuna resources represent a source of untapped development potential for India and other IO countries. Effectively managed fisheries would yield economic, social and environmental benefits ('triple bottom line') and contribute to the Sustainable Development Goals (SDG).

A new Centre of Excellence for International Fisheries Development (CEIFD) would address these issues, provide leadership in fisheries to Bay of Bengal coastal states in meeting the SDG, and overall represent a sound investment to enable the realisation of the inherent development potential of the marine resources involved.

It should be noted carefully that all investment carries some degree of risk, and there is no guarantee of a successful outcome. A careful identification and analysis of the risks involved will be an important part of the business case development approach.

2. HOW WAS THE BUSINESS CASE DEVELOPED AND THEN PRESENTED?

Key points
• In this section, an outline methodology will be presented in eight steps; • To start, a business case is defined (as a justification for an intervention or investment); • Identifying and comparing options is crucial, taking forward the most viable choice; • Time-scales for investment are described, followed by an assessment of performance; • Followed by risk analysis; • A summary should include recommendations and next steps.

To start, the business case methodology[2] focused on two key definitions, as follows:

- *A business case is a document which sets out the justification for the undertaking of a 'project' (or intervention) based on the estimated cost of development (investment) and the anticipated benefits to be gained (returns and outcomes);*

- *The business case is used to say why the forecasted effort and time will be worth the expenditure*;

In the context of the OPP-BOB project, the methodology was implemented following a set of steps.

First, the setting and context were described and the key issues and factors relevant to the future design and implementation of the business case were examined.

Second, the specific business case or opportunity for investment was identified and described.

Third, the investors who are likely to be interested in the opportunity were also identified.

Fourth, the development options for the business case opportunity were also identified and compared, and the most viable alternative was chosen to take forward.

Fifth, the probable time-scale and level of investment required was considered.

Sixth, crucially, for investors trying to decide whether they should invest their capital in the opportunity proposed, or in an alternative, the expected performance of the investment was assessed using, in this case, a benchmarking approach against international standards.

Seventh, furthermore, the assumptions and risks associated with the proposed investment opportunity were identified and then examined.

Finally, eighth, the overall conclusions and recommendations for the business case were summarized.

For potential investors who are interested in the business case presented here, the next step would be work with appropriate experts to develop a detailed ***business plan***, with reference to the specific goals of the private business or entity involved.

[2] The methodology is coherent with the following set of guidelines: Viteri C., Yoshioka J., Castrejón M. (2016). Bankable Business Case Guidelines and Investment Criteria for Sustainable Production Seascapes. Conservation International's consulting report for the World Bank. pp.30.

3. WHAT IS THE SETTING AND CONTEXT OF THE BUSINESS CASE?

Key points
• In this section, the setting and context of the business case will be described; • Tuna resources in the Bay of Bengal (BOB) are part of the whole Indian Ocean (IO) stock and offer significant opportunities to contribute to the Blue Economy and sustainable development; • Within the BOB, tuna fishing operations (small-scale, rudimentary handling and storage procedures) face serious constraints (e.g. lack of landed, high quality tuna for incomes, processing and trade) • At both national and international levels – there is a need to create an enabling framework for tuna fisheries development through good fisheries governance (policy, law and fisheries management), to build institutional capacity at national level, and to improve coherence between organizations and their activities, as well as steps to reform IO-wide institutional arrangements for fisheries management, currently organized through the Regional Fisheries Management Organization (the Indian Ocean Tuna Commission).

3.1. Indian Ocean - Tuna Resources, Landings and Value – the Opportunity

The Indian Ocean (IO) accounts for 20% of global tuna landings (about 1 million metric tonnes per year); the Western Central Pacific Ocean region is the largest contributor worldwide. Of this, landings of yellowfin tuna (YFT), the most valuable species making a substantial contribution to IO tuna catches, were 429,800 mt (2014). This represented a 6% increase since 2013, but a 19% decline since the 2004 level of 530,000 mt. The MSY for IO YFT has been estimated at 421,000 mt, and stocks are currently considered overfished, and subject to overfishing. Management measures are being considered by the IOTC and its members. The potential sustainable gross annual landed value of YFT is estimated at USD 1 billion, with an annual economic value of over USD 400 million. These are significant values for the economies of the coastal states. Further information is given in Appendix 2.

3.2. Bay of Bengal (Coast of India) – Tuna Resources

The tuna resources in the Bay of Bengal, including YFT resources, are part of the tuna stock of the entire Indian Ocean. For the purpose of this analysis, the Maximum Sustainable Yield (MSY) for YFT in the Bay of Bengal has been estimated at 35,000 metric tons (based on discussions with BOBP-IGO experts). The current catch is 24,770 mt. It has been proposed, in related business cases (BC1-3) within the current programme, that catches should be set at 17,500 mt (50% MSY). This catch limit would be subject to management within the IOTC framework, and national rules and regulations.

3.3. Bay of Bengal (Coast of India) - Fishery Characteristics

Fishing for YFT on the Bay of Bengal of India is carried out near the coastline and within the Indian Exclusive Economic Zone (EEZ). A large proportion of the fleet consists of small-scale, open-deck fishing vessels that utilize hand-lines, long-lines and/or gillnets. Fishing trips range from 1 to 3 days (depending on the fishing region), with a crew of 4 to 5 fishermen. Most of the vessels have two outboard 9 horsepower (hp) engines (or equivalent inboard engine) and a sail (photographs below). The vessels carry no ice and have no onboard preservation equipment; catches are generally left on the open deck after capture. Other larger motorised vessels operate out of ports such as Puducherry, Chennai and Visakh.

The lack of adequate onboard handling and preservation practices results in very poor quality fish and low prices. Based on stakeholder consultations and interviews conducted with fishermen during field visits, the landed prices received for the fish currently ranges from 60 and 100 INR/kilo (US$ 0.88 to US$ 1.48/kg). The fish is sold to traders at these low prices, who in turn re-sell the fish to retailers for

sale in local markets or directly ship the product (by truck) to processors located mainly in the Kochi (Kerala) region.

Tuna fisheries in the Bay of Bengal largely exploit skipjack and neritic tunas, with YFT generally constituting a by-catch. The limited specific targeting of YFT, and its handling together with other lower value species, represents a significant missed opportunity in terms of realizing the potential value of these fish that can realise high values in both domestic and international markets. Fishermen complain that the prices they get for their YFT are low. Buyers, on the other hand, complain that the fish quality is poor due to inadequate onboard handling and preservation systems and hence they are not willing to pay higher prices. In addition, high levels of histamine in the fish (caused by lack of refrigeration shortly after the fish dies) represents a health hazard to consumers who may be sensitive to histamines and/or spoiled fish.

3.4. Bay of Bengal (Coast of India) – Constraints to tuna fisheries development

The continuation of the present situation, with limited and rudimentary onboard tuna handling and preservation practices, has a number of serious implications, as follows: First, the availability of landed high quality YFT will remain low, and fishermen will continue to receive low prices and leading to low incomes (fishers are incentivised to maximise catch). Second, the limited availability of high quality YFT will continue to represent a source of risk and uncertainty for existing fish processing operators (both financially and in terms of health hazards).Third, the limited availability of high quality YFT represents a major constraint for the development and expansion of trade with both domestic and export markets, and an obstacle to new entrants and investment in the sector. Fourth, economic returns from the valuable YFT resources found in the Bay of Bengal will continue to be severely limited, with a minimal positive impact on and contribution to economic development in coastal regions in particular.

3.5. Indian Ocean – Challenges for tuna fisheries development – the "Bigger Picture"

The tuna fisheries of the Bay of Bengal (coast of India), described above, form one part of a large and complex tuna sector within the Indian Ocean as a whole. Each of the countries involved, both coastal states (CS) and DWFN, numbering about 35 in total, have tuna fisheries and associated processing and trading sectors, and markets, which have their own particular features. However, as whole, many of the countries, specifically the CS, also share certain characteristics and challenges in common.

Realising fisheries benefits through good fisheries governance mechanisms

First, as highlighted earlier, exploitable tuna resources are very valuable and have the potential to make an important contribution to national development. Pre-requisites for this include the design and implementation of appropriate fisheries policy, with an effective fisheries management system, underpinned by an appropriate legal framework – the three key elements of good fisheries governance. In addition, fish trade (both products and services) must be enabled by an appropriate trade policy, which balances the requirements to engage with a range of markets (domestic, regional and international) and to capitalise upon the diverse and valuable opportunities provided by these trade outlets. Furthermore, various international and national initiatives are focusing on policy for the Blue Economy – emphasising the relationship between fisheries exploitation and its contribution to the economy in general.

The IO tuna sector faces two key challenges. First, the shared nature of the highly migratory tuna resources and the need for cooperative management. This is currently organised under the regional fisheries management organisation (RFMO) – the Indian Ocean Tuna Commission (IOTC) – but, as

demonstrated in other parts of the world, notably the Western Central Pacific Region, CS could seek some alternative arrangement, including additional non-RFMO structures in the future. A second challenge is the high level of competition in the marketplace for tuna products and services, which tends to be dominated by long-established private sector operators from developed countries (DC).

Building appropriate institutional capacity in fisheries - national perspectives

Second, the current features and trends witnessed in the IO tuna fisheries – high value fisheries benefitting some countries (with others yet to fully capitalise upon the opportunity), weak and variable fisheries management, and asymmetric sectoral development and trade – are attributable to a range of factors, which also vary by country. However, one of the key internal, or endogenous, factors involved is the lack of institutional capacity exhibited by many IO countries[3]. Specifically, line ministries have limited capacity to address both the opportunities and constraints facing the tuna sector, and there are few mechanisms in place to facilitate the cooperation between the public and the private sectors. Potential areas of cooperation include: the identification and economic valuation of fish stocks (the potential contribution of the Blue Economy); the design of an appropriate governance framework to enable the generation, capture and use of the wealth of the tuna resources for national development; the design and implementation of fisheries management systems; and design and implementation of appropriate trade policy, including negotiation of trading arrangements with other countries.

Furthermore, and depending upon past policy, the private sector and its capacities also vary by IO country. Some are highly capable, innovative and effective, whereas others show limitations. The underlying reasons why some countries have a higher level of institutional and private sector capacity depend on the country in question – but there is no doubt that political and historical context matter, along with leadership ability, the quality of policy and investment choices in key areas such as the economy, infrastructure, education and health.

It is also important to recognise that countries can transit from one status to another, and preferably towards an improved governance, economic, social and environmental status. Many countries have achieved this through support and collaboration with other nations, including investment, technology and capacity-building assistance. The process of development can also be rapid with the right choices, careful planning and support. However, changes in fisheries governance and management can also be a long-term process that will often extend beyond the limited tenures of individuals within the key institutions and organizations involved. Long-term support to ensure that the awareness of the strategic objectives of the sector is maintained is therefore important.

Dealing with and improving institutional arrangements - international level

Third, it should also be recognised that the IO tuna fisheries and the IO fishing nations, both CS and DWFN, all operate and engage within an existing and complex set of international institutional and commercial arrangements (Appendix 3). To start with, the IOTC is the RFMO mandated to manage the IO tuna stocks and most of the nations involved are members. However, while the IOTC has certain strengths, such as convening meetings and scientific assessments, there are concerns whether the existing framework can provide an appropriate governance foundation to implement an effective

[3] In 2001, an international workshop undertook an innovative in-depth examination of capacity-building needs for fishery managers and identified a range of important future strategies including developing wide-ranging partnerships across relevant organisations and stakeholders and establishing a network of training providers. http://oregonstate.edu/dept/trainfishmngr/report.html

ocean-wide management system, and whether the member states can agree on the sharing of the benefits involved[4]

There is no doubt that the variation in institutional capacity between the member states, for example, to engage in policy formation or implementation, is a major limitation. Furthermore, the IOTC framework is not the only international institutional framework within the BOB which relates to fisheries development. Others include the IOC, BOBLME and BOBP-IGO. They all have different and sometimes overlapping remits, policies and programmes, funded at a range of levels. The Bay of Bengal Large Marine Ecosystem Project (BOBLME) which is about to initiate its second phase, also has a mandate for addressing fisheries management issues but the funding at its disposal to engage in significant programmes of change in fisheries governance and management will be limited.

In addition, private sector organisations, operating commercially, also pursue specific strategies and activities, often involving large investments at sea (vessels and fleets) and onshore (processing, trading). It is also relevant to compare the experiences concerning tuna fisheries management in other parts of the world, especially in the Western Central Pacific (Appendix 4), and especially the emergence of the Forum Fisheries Agency (FFA) and the Parties to the Nauru Agreement (PNA). The latter arrangement, especially, has greatly enabled the island states involved to increase the level of benefit which they receive from their tuna fisheries, and there are important principles and lessons involved which could be relevant to the future management of IO tuna fisheries.

3.6. The Sustainable Development Goals (SDG) – the basis for a new IO tuna fisheries strategy?

The earlier sections, above, deal with the IO tuna fisheries sector specifically, and culminate with a brief examination of the fisheries sector in a wider international and institutional context, including both public and private sector aspects. For the many CS and DWFN, the tuna sector is just one part of their wider economic, social and environmental make-up and activity. In looking to capitalise upon, and also balance these different attributes and the opportunities for growth and development, the international framework which defines the SDG is said to offer the opportunity to transform our world (UN, 2015). There are 17 SDG (Appendix 5), and 4 apply directly to fisheries (Box 3.1.).

Box 3.1. 2030 Agenda for Sustainable Development – Goal 14: Life Below Water

G14: Life Below Water: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Key G14 Goals

- G14 (1) - By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices;
- G14 (2) - By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing;
- G14 (3) - By 2030, increase the economic benefits to Small Island developing States and least developed countries;
- G14 (4) - Provide access for small-scale artisanal fishers to marine resources and markets;

[4] In 2008-09, a performance review of the IOTC identified a number of important weaknesses including the need to amend or replace the IOTC agreement itself, and the need to address the serious capacity and infrastructure constraints which impede CS from complying with their obligations as members (FAO, 2012).

4. WHAT IS THE BUSINESS OPPORTUNITY?

Key Points
• The business opportunity concerns the establishment of a new Centre of Excellence for International Fisheries Development (CEIFD) in Chennai; • This centre will provide leadership in fisheries to Bay of Bengal coastal states in meeting the SDG goals through addressing three key themes as follows: improve governance and management capacity and accountability to coastal states; establish core leadership capability supported by regional and international partnerships; and enhance supporting management, information and financial systems; • A full range of implementation mechanisms will be used including a leadership programme, development of policy and management systems, training and capacity-building, and provision of fisheries management and other technical services; • Investment will be used to establish the CEIFD, including infrastructure, planning and management arrangements, staffing, and systems design and implementation. In the long-run, the CEIFD aims to become self-funding through the sale of services and function support to governments and private sector fishery organisations; • Benefits and beneficiaries will occur at the level of the fishery, and wider society in general, through economic, social and environmental outputs from productive and sustainable fisheries, particularly, profits and economic rent, and an investable surplus to stimulate economic growth; • Most importantly, the new enabling conditions generated by the COEIFD will contribute to the achievement of the SDGs for all the partner countries involved.

The Goal

To establish a new Centre of Excellence for International Fisheries Development (CEIFD) in Chennai. This centre will, in turn, provide leadership in fisheries to Bay of Bengal coastal states in meeting the SDG goals through addressing three key themes as follows:

- Improved governance and management capacity and accountability to coastal states
- Establish core leadership capability in coastal states supported by regional and international partnerships
- Enhance supporting management, information and financial systems

The Scope and Strategic Approach

While the CEIFD's mission would eventually embrace the improvement of governance and management in fisheries in the Bay of Bengal in general, the starting strategy for the centre would be to focus on Shared Highly Migratory Fish Stocks (SHMFS) as these represent the fisheries resources offering the most potential benefits from collaborative regional management. The potential value of fisheries for tuna and tuna-like species are recognized by regional partners and represent a substantial incentive of investment in the centre and the services that it would provide. Within tuna fisheries, it is further proposed to focus initially on yellowfin tuna (YFT) as these are themselves the most valuable among tuna stocks in the area and could become the focus of attention during the formative years of the CEIFD's establishment and development.

Implementation activities

In order to achieve the Goal, a range of implementation mechanisms will be developed over time, including the following activities:

- Operate an international fisheries leadership programme
- Build understanding and leadership to underpin transitional change

- Define policy frameworks for national and sub-regional management
- Conduct organisational functional and capability reviews
- Build capacity among partners in key competencies such as fisheries governance and management, fisheries economics, value-chain development, and finance arrangements for fisheries
- Identify value chain and market investment opportunities
- Provide regional safety at sea training and collaboration
- Develop transition and change management plans
- Provide selected sub-regional fisheries management services
- Build investment cases and secure funding coalitions
- Take the lead in exploring new sub-regional and regional coalitions
- Provide project implementation technical capacity, oversight and mentoring

The Kick-start Investment

Subject to agreement from a host country – with India as the suggested host – the initial investment (or Phase 1) will be used to establish the CEIFD including the definition of a mandate and functions, the development of a management plan, financing arrangements and infrastructure needs (office and associated facilities), the definition of BOB coastal state leadership teams, recruitment of staff and the establishment of communications programme and strategy.

With regard to the definition of the mandate and functions of the Centre, this would address the need, at both national and international levels, to create an enabling framework for tuna fisheries development through good fisheries governance (policy, law and fisheries management), to build institutional capacity at national level, and to improve coherence between current organizations and their activities, and reform BOB-wide institutional arrangements for fisheries management, currently established through the RFMO (the IOTC).

Investment capital utilization

Investment capital will be used in two ways. First, to support the initial establishment of the new organization (CEIFD) including infrastructure, staff and systems development. Second, to provide transition finance for the initial running costs of functions and services until such time that the organization becomes self-supporting (through charging for functions and services to clients e.g. governments, fisheries management organizations and private sector organizations and firms).

Potential benefits and beneficiaries

The establishment of the enabling conditions for effective BOB tuna fisheries management, through strengthening governance, increasing capacity and ensuring coherence, and with reference to the SDG targets, will generate a range of important benefits for key beneficiaries, as follows:

- At the level of the fishery, productive and sustainable fisheries will generate economic and social benefits for direct participants (fishers, fishing communities, fishing and seafood firms) including profits, economic rent, employment and incomes, and food;
- At the country level, well-managed fisheries will generate taxation revenue to support public costs and services, and an investable surplus (rent) to contribute to economic growth and diversification through private sector activity;
- By achieving SDG 14 targets (and other SDG goals – see Appendix 5) a wide range of citizens and society in general will benefit, through economic development, social uplift and environmental sustainability.

5. WHO ARE THE LIKELY INVESTORS?

Key points
• The business case is likely to attract a broad range of investors from all sectors (public, private and Third), which opens up the possibility of utilizing a combination and blend of investment types; • Sequencing of investment is important – starting off with building core functions and capabilities, followed by support for specific strategic actions and implementation mechanisms, especially business cases and pilots; • Key investors in core capability would include BOB country development agencies, especially from India, and a full range of donors, multilateral banks and philanthropic agencies; • Key investors in follow-on strategic actions and specific implementation mechanisms (BC and pilots) would include coordinating agencies, multilaterals, banks and private companies from the fishing and seafood sector.

Broad based opportunity for investment (Appendix 6)

The business case is likely to attract a broad range of investors from the public, private and Third sectors given the potentially wide range of positive impacts which are likely to be realised for specific stakeholder groups and enterprises, and for society in general. The possibility of utilising a combination and blend of investment types – to serve and support different functions and capabilities – should be explored. To start, this could target core capabilities and specific implementation mechanisms as follows:

Investment in Core Capability

Sequencing of the development process for the new CEIFD would be critical. To start with, there is a need for investment in the development of core capability and organisation of functions.

Examples of potential investor targets in this core capacity area (includes potential facilitating agencies) would include:

- BOB country development agencies
- Bilateral donors (SIDA, USAID, AUSAID, GTZ, NZAID/TENZ, NORAD)
- Multilateral Banks (World Bank (IFC), KfW, NDB-BRICS, ADB, IFAD)
- Philanthropic organisations working in South Asia (e.g. Tata Foundation, Walton Family Foundation, Packard Foundation).

Investment in Strategic Actions and Specific Implementation Mechanisms

Following the building up of core capacity, investment around coordinated projects could follow (e.g. well-defined business cases and investment coalitions for implementation). Key potential investors and partners for follow-on specific strategic actions and implementation mechanisms, in particular the development of business cases and pilot projects, would include:

- Coordinating agencies (Aavishkaar, Opportunity International)
- Multilateral Banks (bonds, concessional and market loans)
- Philanthropics / NGOs (e.g. RARE, Nature Conservancy, WWF, WCS)
- Banks (Rabobank, ANZ)
- Seafood companies, partnerships and networks (e.g. SFP, MSC, IPLF).

6. WHAT ARE THE INVESTMENT OPTIONS CONSIDERED?

Key points
• Two options for investment in a new Centre of Excellence for International Fisheries Development (CEIFD) are considered: • Option 1: the Bay of Bengal Programme Inter-Government Organisation (BOBP-IGO) located in Chennai provides the baseline case; with 4 permanent staff (12 temporary staff), budget of USD 192,713, mandated to enhance cooperation in the region and provide technical services for fisheries development and management in the BOB. Overall, good reputation for stakeholder engagement and training, but constrained by budget and capacity to meet wide-ranging mandate especially for fisheries management, and clear targets such as SDG (14); • Option 2: the BOBP-IGO, enhanced and developed, with an expanded mandate and capability covering a range of functions including technical services and support, capacity-building and organizational change, financing capability, and with specific reference to management of tuna and other fisheries. Proposed staff of 35 (with outsourced experts also), budget of USD 6.34 million p.a. (over 10 years), plus 4 pilots @USS 800K p.a. To provide leadership in fisheries to Bay of Bengal coastal states in meeting the SDG goals. The first target fisheries will exploit YFT (India EEZ) with a potential return of USD 46 million p.a. Challenges will include ensuring IOTC manages the greater YFT fisheries, coping with regional political disputes, and engaging effectively with other fishery and marine organisations (to ensure alignment).

Two options for investment in a new Centre of Excellence for International Fisheries Development (CEIFD) are considered. First, the existing Bay of Bengal Programme Inter-Government Organisation (BOBP-IGO) located in Chennai – this provides the baseline case - and second, the same organization, enhanced and developed, with an expanded mandate and capability covering a range of functions including technical services and support, capacity-building and organizational change, financing capability, and with specific reference to management of tuna and other fisheries.

Option 1: Status Quo – Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO)

To start, the first option (baseline option), is the existing Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO) located in Chennai. This organisation was established in 2003, following the completion of the Bay of Bengal Fisheries Programme, which had been managed by the UN FAO as part of its global field programme, and with donor support for over 20 years from DANIDA, SIDA, NORAD, DFID and others. Currently, the BOBP-IGO is constituted as an inter-governmental organization (IGO), with a regional mandate to support fisheries development, but focusing principally on small-scale fishing operations and coastal fisheries. The current signatories to the organization include India, Sri Lanka, Bangladesh and the Maldives while Myanmar has observer status. In the past, a number of other regional nations were also involved including Thailand, Indonesia and Malaysia, but they have elected not to participate in the IGO since 2003. The four current member countries each pay an annual subscription (USD 120,000 in total) and, in addition, the Government of India provides funding to cover basic fixed (office rent, two senior staff and two junior staff) and variable costs (electricity, vehicles and running costs, travel expenses).

The current BOBP-IGO can be characterized as follows:

- **Wide-ranging mandate in regional cooperation and provision of advisory services**, but this is constrained in practice by the partial coverage of BOB countries, limited authority to act on behalf of members and negligible capacity to provide technical advisory services;

- **Limited budget and investment** – the current total annual budget (USD 174,780) is relatively small for an organisation with a regional mandate, and there is a low level of overall investment from member countries and donors;

Summary – BOBP-IGO	
Staff - Permanent	4 (10-year mean)
Staff - Temporary	12
Annual budget: Office, staff, travel, operations Projects – Total Projects – Mean annual	USD 192,713 USD 3.41 million USD 341,193
Annual Income: GOI Member Countries	USD 54,780 USD 120,000
Goals / Outcomes	BOBP-IGO is an Inter-Governmental Organisation mandated to enhance cooperation among member countries, other countries and organisations in the region and provide technical and management advisory services for sustainable coastal fisheries development and management in the Bay of Bengal region
Major achievements	Strong and widespread stakeholder engagement in BOB and internationally; Operation of capacity-building courses in key areas (Code of Conduct for Responsible Fisheries, Safety-at-Sea); Advisory role to GoI on many issues; Participation in major international fora (FAO-COFI); Good document centre and dissemination of knowledge products.
Major challenges	Wide-ranging mandate, but limited authority to act for member countries; Constrained budget and technical and staff capacity; Staff continuity is weak; Limited political influence and interaction with IOTC; Balance of national interest favours India, no rotation of country HQ; definition and linkage between key goals (SDG) and activity is weak.
Tuna fishery – potential economic value (rent)	USD 46 million p.a. (YFT, India EEZ)[5] USD 1.376 billion p.a. (all tuna, IO)
Tuna fishery – current economic value (rent)	minimal

- **Engagement and activities are project driven** – the types of activity (research, training, advisory services, pilot technical projects) undertaken result from project requests from national and international organisations, with considerable variation in activity levels and budget year by year;
- **Capacity is limited** – the organisation has limited capacity with two permanent senior technical officers (one of them is the Director) and two permanent junior technical officers (library and media activities); additional expertise is acquired using project financing as needed;
- **Staff continuity and future investment in human capacity is limited** – it is difficult to plan for a more permanent staff complement and to offer technical and other services to the region because the baseline budget is low, and because project financing is unpredictable;
- **Stakeholder engagement and networking is strong** even using existing capacity. The BOBP-IGO has an excellent reputation for stakeholder engagement within the fisheries sector, both nationally and regionally, and, in many ways, exceeds its apparent limited capacity to engage, throughout the region, by developing a trusted and strong reputation for convening and liaising with stakeholders, and providing a response to key requests for training, on a regular basis, in areas such as safety-at-sea;

[5] This estimate assumes that the GoI asserts an 80,000 mt share of the sustainable yield for the Indian Ocean.

- **Political reach and influence on investment strategies** of the BOBP-IGO appears to be low, although the permanent staff do participate in high level meetings, both nationally and internationally, and provide an advisory role to national, regional and international organisations. However, interaction with the IOTC is limited, and there is minimal impact on the work of this organisation regarding IO tuna fisheries management;
- **Balance of member country influence.** The extent to which the organization serves the interests of all countries in the region is open to question. India provides the majority of the funding and this undoubtedly ties the organisation to the host country (for example, the nominated Director of the BOBP-IGO, and the location of the headquarters of the organisation, have remained the same since its creation, with no rotation between member states). From the Government of India's (GoI) perspective, it is recognised that the BOBP-IGO has a very limited mandate and capacity, and that this reflects the level of funding support received (based on recent workshop discussions in Chennai);
- **Demand for more tangible results**. While the member states, and the GoI, appreciate the effort and work of the BOBP-IGO in areas like training and safety-at-sea, there is also an expressed desire, particularly from the GoI, for the achievement of more tangible results in key areas such as fisheries management, fish trade and technology advancement in the fishing and seafood sectors (for example, by focusing on the type of work undertaken in the current set of OPP-BOB business cases);
- **Overall conclusion**. The mandate and activities of the BOBP-IGO needs to be re-framed and re-orientated. The organization needs to consider the future opportunities and challenges that it will face in the future within the BOB and redefine its' role in order to deliver outcomes relating to the SDGs and to define performance against these goals.

Option 2 – Establish a new Centre of Excellence in International Fisheries Development (CEIFD)

Overview

Under the second option, a new CEIFD would be characterized by an expanded mandate and capability, with a new centre based in Chennai. It is proposed that the CEIFD would build upon the foundation provided by the existing BOBP-IGO. A new mandate, and accompanying Masterplan, would be developed early-on drawing upon international best practice lessons concerning the development and management of tuna fisheries, and especially from the Western Central Pacific region (see Appendix 4), including the following key elements:

[A] High level governance and management capacity and accountability to coastal states;

[B] Strong core leadership capability supported by regional and international partnerships, with associated mechanisms as follows:

- Capacity-building in key technical areas, especially in fisheries governance and change management, for country and sub-regional level assessment and situation analyses, diagnosing and developing transition plans and providing technical support for project implementation (an overview of relevant capacity-building and knowledge management approaches and content are provided in Appendix 7 and 8);
- Capacity-building for knowledge and skills transfer including training to support country and regional transitions and provide and coordinate mentoring and technical support;

- Capacity-building in business case development and business case financing to support programme activities;

[C] Appropriate and effective supporting management, information and financial systems.

Summary – CEIFD	
Staff - Permanent	35
Staff - Temporary	0
Annual budget: Office, staff, travel, operations Projects – Total Projects – Mean annual	USD 6.34 million (mean over 10 years) USD 8 million (4 pilots in first 10 years) USD 800,000
Annual Income: Investors Investors + national funds	USD 6.34 million (mean over 10 years) USD 8 million (over 10 years)
Goals / Outcomes	To provide leadership in fisheries to Bay of Bengal coastal states in meeting the SDG goals.
Major achievements	Improved governance and management capacity and accountability to coastal states; Establishment of core leadership capability in coastal states supported by regional and international partnerships; Enhancement of supporting management, information and financial systems.
Major challenges	Ensuring that efforts to manage the greater (larger) IO YFT fisheries are supported and advanced; Adapting to local political-economy and potential regional political disputes; Ensuring cooperation and collaboration with key regional organizations already operating within or impacting regional tuna fisheries;
Tuna fishery – potential economic value (rent)	USD 46 million p.a. (YFT, India EEZ) USD 1.376 billion p.a. (all tuna, IO)
Tuna fishery – current economic value (rent)	minimal

Functions and Services

The proposed functions and services provided by the CEIFD, and how these would be organized, are presented in Fig.6.1. below.

Demand for Services

The CEIFD would, from the outset, work closely with regional partners at all levels (regional, national and local), and with a full range of stakeholders (government, private, civil society), to examine and analyze the opportunities for fisheries development, and the required institutional, technical and financial capacities to meet the potential identified.

It is assumed that, through this process, a strong demand for key services (left-hand side of diagram) would be generated in the form of requests for capacity-building from countries and from other sources (e.g. private sector operators), including requests for support and cooperation of different forms (e.g. addressing specific technical questions and processes).

Furthermore, it is also assumed that a demand would develop for leadership and coordination at international, regional level and sub-regional levels concerning a wide range of activities including, for example, governance reforms and policy formation, supporting analysis and advice, research and project implementation, and fisheries management.

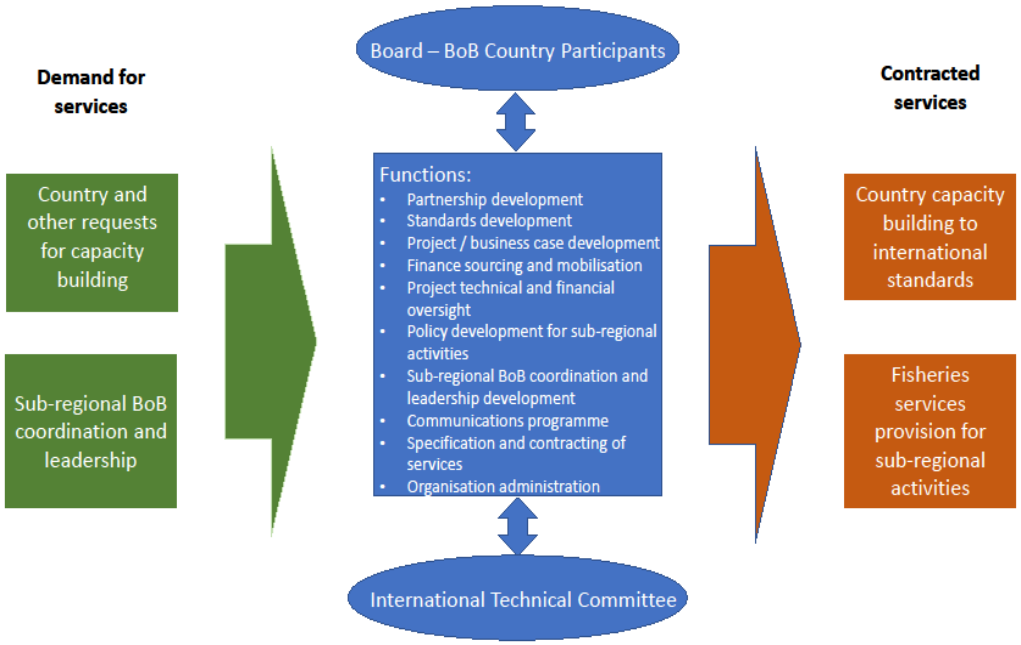
Functions

The functions of the CEIFD, through which the demand (above) would be met, will be wide-ranging (centre box of Fig.6.1.).

First, as indicated above, partnerships would be developed between relevant and interested organizations and stakeholders, at all levels, within the region and internationally. This would cover a wide range of areas including, for example, governance and fisheries management, project design and implementation approaches, and financing strategies and arrangements.

Second, a set of standards would be developed and agreed covering all key areas of activity, including, for example, fisheries policy, laws and management, and organizational capacity and expertise.

Fig. 6.1. Centre of Excellence in International Fisheries Development (CEIFD) – Functions and Services



Third, appropriate projects and business cases would be developed to address the potential opportunities within countries and to help deliver the services demanded from regional organizations and other stakeholders.

Fourth, finance would be sourced and then mobilized relevant to the projects and business cases designed and in response to regional demands. Core funding would be established and maintained for the centre, independent of project activity, and established at a level relevant to the short-, medium and long-term work-plan and business plan of the CEIFD (see below).

Fifth, the CEIFD would also provide technical and financial oversight in activities relating to service delivery, including, for example, national programmes of fisheries development, along with specific projects and training courses.

Sixth, the CEIFD would also develop overarching policy and legal frameworks concerning sub-regional activities, on the basis of an early diagnosis and analysis of the needs and opportunities for governance reform.

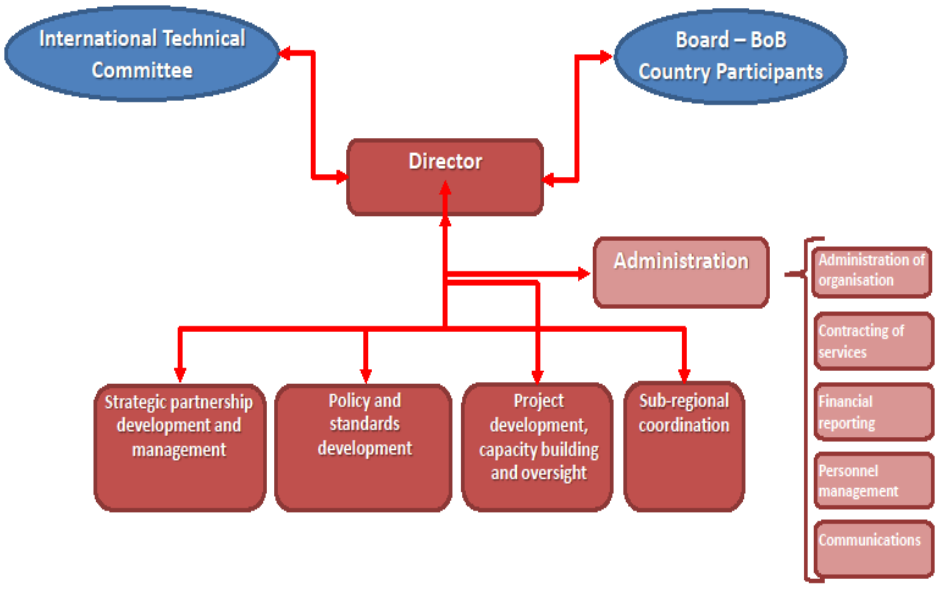
Seventh, coordination and leadership development would also be provided by the CEIFD, covering a full range of levels and activities as appropriate, including, for example, policy formation, fisheries management programme design and implementation, negotiations concerning international relations, and research and training prioritization.

Eighth, a communications programme, including a knowledge management framework and activities, would help to coordinate and facilitate the widespread exchange and distribution of relevant knowledge, information and data relevant to all functions and services, and especially for fisheries development and management.

Ninth, the specification and contracting of services would be a key function, requiring careful management and coordination between demand and actual delivery.

Tenth, the organization and administration of the CEIFD would be essential internal functions, requiring appropriate human capacity (staff and types of expertise).

Fig. 6.2. Centre of Excellence in International Fisheries Development (CEIFD) – Organogram



Contracted Services

In meeting the demand for services – based on country-specific and other requests for governance and technical support, along with sub-regional coordination and leadership – the CEIFD would arrange for suitable provision of contracted (external) services to be provided – focusing in particular on country capacity-building to international standards, fisheries service provision and follow-up mentoring for sub-regional activities.

Board and Technical Committee
The operation of the CEIFD to fulfill its range of functions would be guided and overseen by a Board, made up of regional country participants and an International Technical Committee formed of carefully selected international experts representing expertise in the key functional areas with which the CEIFD would be concerned. Both the Board and the Technical Committee would meet, on separate occasions, in Chennai, at least once per year.

Structure of the CEIFD

The structure and organization of the proposed CEIFD are shown in Fig. 6.2.

A single Director will oversee the work of four technical units – [1] Strategic Partnership Development and Management, [2] Policy and Standards Development, [3] Project Development, Capacity-building and Oversight, and [4] Sub-Regional Coordination – plus one other unit [5] Administration.[6]

Each of the four technical units will be managed by one senior staff member and contain four other senior staff. The five senior staff will be supported by two junior staff.

The administration unit will be managed by one senior member of staff, supported by two senior and three junior staff.

Overall, therefore, the centre will be staffed by a Director (x1), Senior Technical Staff (x20), Senior Administrative Staff (x3) and Junior staff (x11). The total staff complement will be 24 Senior Staff and 11 Junior Staff. The total number of staff is 35.

In addition, the governance and operational activities of the centre – including review of the annual workplan and budget, and design and implementation of technical services - will be subject to oversight by an International Technical Committee and a Board involving members from the region, including the government and private sectors.

[6] The allocation of precise functions to these units would be carried out during the initial phase of development and would depend on the mandate agreed for the CEIFD.

7. WHAT ARE THE TIME-SCALE, ACTIVITIES AND LEVEL OF INVESTMENT?

Key points
• An investment of **US$ 64.93 million** is required over 10 years to establish, operate and consolidate the Centre of Excellence in International Fisheries Development (CEIFD); • Three phases are envisioned (1) Start-up (US$ 12.06 million, or 19% of the total), (2) Development and pilots (US$ 12.62 million or 19%), and (3) Consolidation and Implementation (US$ 40.25 million or 62%); • The three phases will be closely linked and inter-related, representing a process of careful and step-wise development of the new organization including – building partnerships with stakeholders at all levels, offering in-house and contracted services to guide the formation of appropriate institutions for effective fisheries governance, and incorporating lesson-learning and international best practice – and with a focus on leadership and collective action to meet fisheries management needs and priorities at a regional level; • The main cost categories include: Labour: US$ 41,215,000 (or 63.5%), Overheads: US$ 6,108, 000 (or 9.5%), Travel: US$ 16,110,500 (or 25%), and Capital Costs: US$ 1,500,000 (or 2%).

Overview

A proposed implementation plan and budget for the establishment, development and operation of the CEIFD is presented in Appendix 9 below (with accompanying notes in Appendix 10). A summary is given in Table 7.1.

The implementation plan for the first 10 years is shown in detail and is arranged in three phases – (1) Start-up, (2) Development and pilots, and (3) Consolidation and implementation. It is expected that further development will occur over 30 years to establish a mature and effective organization based on international best practice and experience (Appendix 4).

The total budget for the first 10 years will be US$ 64.93 million (or an average of US$ 6.5 million per year) and an investment equal to this amount (100%) over 10 years is proposed.

The allocation by phase is as follows:

Phase 1 (Start-up) (Year 1- 4): US$ 12.06 million (19% of total)

Phase 2 (Development and pilots) (Year 2-4): US$12.62 million (19% of total)

Phase 3 (Consolidation and Implementation) (Year 5-10): US$ 40.25 million (62% of total)

Total Budget: US$ 64.93 million

Development process strategy

The three phases of development will be closely linked and inter-related, representing a process of careful and step-wise growth of the new organization – the CEIFD – building partnerships with stakeholders at all levels, offering in-house and contracted services to guide the formation of appropriate institutions for effective fisheries governance, and incorporating lesson-learning and international best practice – and with a focus on leadership and collective action to meet fisheries management needs and priorities at a regional level. The initial focus of this work would be on shared and highly migratory fish stocks or SHMFS, and in particular on tuna.

Phases explained

Phase 1 (Start-up) (Year 1-4): following a formal agreement and contract between regional partners, and supporting (financing) organizations, Phase 1 would commence with the recruitment of a core development team for the CEIFD. Assuming that the BOBP-IGO will evolve into the new CEIFD, a

change management plan would be developed, including infrastructure needs (new office and other facilities) and proposals for a new mandate and functions of the BOBP-IGO developed.

Subsequently, working closely with regional and other partners, the revised mandate and a Masterplan for the centre would be designed and agreed as an important first step. This plan would be underpinned by agreement on the future specifications of fisheries governance arrangements and the steps needed for reform within each of the coastal states. Work to address this first priority would start immediately, and continue throughout Phase 1, with the participating states undertaking to initiate the process of reform towards these agreed future specifications.

Thereafter, the stage would be set to commence building the leadership teams in the coastal states, through an appropriate process involving dialogue, consensus-building, prioritization of key issues, planning, capacity-building and training, support and mentoring by experts. In due course, the core team would be supplemented by the recruitment of further key staff – both technical and administrative professionals. By the end of this first phase, it is intended that strategic, technical and financing arrangements with partners and a detailed work programme would be established and in operation across the region subject. The overall work would also be complemented by the design and implementation of a communications and knowledge management strategy involving connectivity, outreach and sharing of relevant data, information and knowledge between all partners.

Phase 2 Development and Pilot Projects (Year 2-4): would commence after one year, running parallel to Phase 1, focusing on targeted, demand-led actions and interventions in fisheries management, with an emphasis on institutional design and capacity-building. Initial assessments of the coastal states would commence (and become a regular on-going feature of the centre's work into the future) and would serve to guide performance evaluation and adaptive design of operations. The work on these assessments, and the subsequent pilot activities would serve to strengthen the process of technical capacity-building and leadership programmes within partner organizations. Reform and transition plans would be designed with coastal state partners, culminating in the identification and the elaboration of suitable business cases, which would form the basis of a series of pilot-scale projects. Projects would include new and innovative approaches to co-management for SHMFS, the application of MCS, and the relationship between fish trade and fisheries regulation. Appropriate finance arrangements to support business cases would be established using, for example, blended finance from a number of different sources. Finally, project implementation would be supported by a mix of national experts, staff from the CEIFD and external expert consultants.

Phase 3 Consolidation and Implementation (Year 5-10) would commence in Year 5 in order to expand upon and elaborate the work completed in the earlier phases (above). Further office facilities would be developed as required and additional staff recruited to manage the strategic, technical and financing partnerships, and in particular to support the transition plans of the coastal states for improved fisheries management. The work of these programmes would be subject to regular progress reviews and targeted follow-up actions. Expert inputs, guidance and mentoring would help national teams in coastal states to implement existing business cases, and to further expand the portfolio involved. This would include assistance with the design and application of appropriate financing arrangements. The CEIFD's communications and knowledge management strategy would be further elaborated and adapted to support the work on these business cases and to ensure that relevant stakeholders are kept well-informed, engaged in the overall process of fisheries management and reform, and have access to the information they need to fulfill their roles in the process (Appendix 7).

At the end of Phase 1 & 2 after Year 4 of the investment and prior to the commencement of Phase 3, a review of progress would be undertaken to determine the extent to which the new centre is fulfilling its mandate and to assess progress against its Masterplan. At the end of Phase 3, after Year 10, a thorough strategic review would be undertaken to learn lessons from this initial period of development and determine future strategies for the organization.

Budget Summary and Investment Required

Table 7.2. presents a summary of the budget required to establish and develop the CEIFD over the first 10 years.

The total budget is US$ 64,933,500 and a 100% investment is proposed.

The initial investment for Phase 1 (Years 1-4) will be US$ 12.06 million (19% of the total amount), accompanied by an investment for Phase 2 (Years 2-4) of US$ 12.62 million (19%) and finally, for Phase 3, an investment of US$ 40.25 million (62%) (Years 5-10).

The main cost categories include: Labour US$ 41,215,000 (or 63%), Overheads US$ 6,108, 000 (or 9%), and Travel US$ 16,110,500 (or 25%).

Within the largest cost category – Labour – there are two main sub-categories – full-time/permanent staff (Senior, Assistant and Junior) who receive a monthly salary, representing a total cost of US$ 15.27 million. In addition, both national and international experts will be contracted regularly to provide required services and expertise amounting to a total cost of US $25.95 million.

The use of both full-time permanent experts, based within the CEIFD, and a larger pool of national and international experts, on a temporary or part-time basis, reflects the overall approach for implementation. The permanent experts would have an oversight and coordination role while utilizing other experts on a contract basis to provide specialist inputs. This dual approach will confer considerable flexibility in the development process and allow access to a wide range of national and international expertise.

It is also expected that national experts, with good local knowledge will provide the most regular inputs (362 person/days per year on average) compared to international experts (247 person/days).

This is also reflected in Travel activity – with national experts providing 4,616 person/trips compared to international experts with 954 person/trips.

Table 7.1. Centre of Excellence in International Fisheries Development – Implementation (Yr.1-10)

Phase		Year	1	2	3	4	5	6	7	8	9	10	1-15]	16-20]	20-30]
		Activity													
[1]		**START-UP -New Centre of Excellence agreed and launched**													
Duration	1.1.	Recruit Core development team													
(Years)		Senior													
4		Assistant													
		Junior													
	1.2.	Masterplan developed and finalised (Governance reform focus)													
	1.3.	Develop change management plan encompassing infrastructure needs													
	1.4.	Revise mandate ad functions of BOBP-IGO													
	1.5.	Build coastal state leadership teams													
	1.6.	Recruit more staff													
		Senior													
		Assistant													
		Junior													
	1.7.	Retrenchment package for redundant, retiring staff													
	1.8.	Establish communications strategy and programme													
	1.9.	Secure fit for purpose office and associated facilities													
	1.10.	Establish strategic technical and financing partnerships and programme													
	1.11.	Progress review and follow-up actions													
	1.12.	Finance agreed and available													
		Budget Phase 1: USD 12,063,500 (19%)													
[2]		**PILOTS DEVELOPMENT**													
Duration	2.1.	Carry out initial and ongoing assessments of coastal states													
(Years)	2.2.	Conduct technical capacity building and leadership programmes													
3	2.3.	Develop transition plans by coastal state													
	2.4.	Build business cases - 4 pilots													
	2.5.	Establish blended finance arrangements to support business cases													
	2.6.	Support business case implementation													
		Budget Phase 2: USD 12,620,000 (19%)													
[3]		**CONSOLIDATION AND IMPLEMENTATION**													
Duration	3.1.	Recruit more staff													
(Years)		Senior													
6		Assistant													
		Junior													
	3.2	Communications strategy and programme													
	3.3	Office and associated facilities development													
	3.4.	Manage strategic technical and financing partnerships and programme													
	3.5.	Progress review and follow-up actions													
	3.6.	Finance arangements agreed and managed													
	3.7.	Ongoing assessments of coastal states													
	3.8.	Conduct technical capacity building and leadership programmes													
	3.9.	Manage transition plans by coastal state													
	3.10.	Business cases managed and expanded													
	3.11.	Blended finance arrangements to support business cases managed													
	3.12.	Support business case implementation													
		Budget Phase 3: 40,250,000 (62%)													
Total years															
10		**TOTAL (US$) 64,933,500 (100%)**													

Table 7.2. Centre of Excellence in International Fisheries Development – Budget Summary			
	Person.days Total	Mean annual person.days	Cost (US$)
LABOUR			
Service (Consultancy) Inputs			
National	3,625.00	362.50	10,045,000.00
International	2,475.00	247.50	15,900,000.00
Total	6,100.00		25,945,000.00
Salaried staff			
Senior			8,550,000.00
Assistant			5,700,000.00
Junior			1,020,000.00
Total			15,270,000.00
TOTAL			***41,215,000.00***
OVERHEADS			
Salaried staff			6,108,000.00
TOTAL			***6,108,000.00***
TRAVEL			
Trips	No.	Person.trips	
International	46.00	954.00	5,070,000.00
Local	173.00	4,161.00	2,080,500.00
Total	219.00	5,115.00	7,150,500.00
Other costs (per diem)			
International			3,937,500.00
Local			5,022,500.00
Total			8,960,000.00
TOTAL			***16,110,500.00***
CAPITAL COSTS			
TOTAL			***1,500,000.00***
GRAND TOTAL			***64,933,500.00***

8. WHAT IS THE EXPECTED PERFORMANCE OF THE INVESTMENTS?

Key points

- The performance of the investment in the Centre of Excellence for International Fisheries Development was considered against an international benchmark for tuna fisheries management – the Western Central Pacific (WCP) which is managed by three key organizations – the Western Pacific Fisheries Commission (WCPFC), the Forum Fisheries Agency (FFA) and the Parties to the Nauru Agreement Office (PNAO);
- WCP tuna fisheries have significant potential economic value (USD 3.4 billion). US$1.36 billion could be generated each year under effective management conditions. Under current arrangements (WCPFC/FFA/PNA), US$ 500 million (or 37% of potential rent) is captured by Coastal States, with investment of US$26.93 million p.a. (0.79 % landed value) support for institutions and services;
- By contrast, although the IO offers great potential for the exploitation of tuna fisheries (US $1,375 million potential economic rent p.a. for all principal tunas, and US $420 million for YFT alone), there is minimal generation of economic rent, YFT and other stocks are currently threatened by overexploitation;
- Fisheries management costs of IOTC (US$ 3.91 million p.a.) plus BOBP-IGO costs, total US$ 5.14 million (0.15 % of landed value), or 20% of WCP investment. Therefore, compared to the WCP international benchmark, there is a limited total investment in fisheries management.
- The proposed Centre of Excellence in International Fisheries Development (CEIFD), based in Chennai, will focus initially on improving management of YFT fisheries. YFT fishery could generate US$420 million p.a. if well-managed. Some US$46 million could be recovered from the EEZ of India in the BOB alone.
- The total cost of the investment in the CEIFD will be US $64.93 million over 10 years (or US $ 6 million per year) to cover set-up, development and operational costs. It is expected that this core investment and associated activities will facilitate and lever additional investment at national level.
- Overall, the proposed investment of, on average, US $6 million per year compares favourably with the likely initial economic benefit stream of at least US $46 million per year, for India alone. Other regional partner countries are also likely to generate similar if not greater returns over time. **Therefore, the proposed investment in the CEIFD looks both worthwhile and important for the Bay of Bengal region.**

Assessment approach

Given the nature of this business case – the development of an international organization over 10 years with links to a range of stakeholders (public, private and civil society), and drawing upon a range of funding sources, but with no easily definable immediate (or priced) output, in a commercial sense – it is proposed to adopt a benchmarking approach to the assessment of the likely performance of the investment. This differs from the standard approaches used for more commercially-oriented business cases using investment appraisal techniques (e.g. cost-benefit analysis, discounting and sensitivity analysis).

International benchmark

The performance of the investment in the Centre of Excellence for International Fisheries Development will be considered against an international benchmark for tuna fisheries management – the Western Central Pacific (WCP) which is managed by three key organizations – the Western Pacific Fisheries Commission (WCPFC), the Forum Fisheries Agency (FFA) and the Parties to the Nauru Agreement Office (PNAO) (see Appendix 4).

Western Central Pacific (WCP) – Strong fisheries performance
As shown Table 8.1 below, the WCP tuna fisheries have a significant potential economic value (USD 3.4 billion). It is estimated that US$1.36 billion of economic rent could be generated each year under effective management conditions. Under the current arrangements (WCPFC/FFA/PNA), US$ 500 million (or 37% of potential rent) is captured by Coastal States, with an expected rise to US$ 750 million by 2040 with increased investment. The World Bank has suggested that a significant increased investment of about US$50 million per annum would be justified towards realizing the 2040 target noted above.

In order to successfully operate and sustain the fisheries management system, a current investment of US$26.93 million (representing 0.79 % of the landed value of tuna) is made each year in supporting appropriate institutional arrangements and services. This investment is the combined annual expenditure on regional and sub-regional management of tuna fisheries within the three WCP organizations noted above. A breakdown of expenditure by organization is provided in Appendix 11.

Expenditure within these three organizations includes outsourcing of key services (13-58% budget) integrated with a strong core staff (overall 60% of budget), and substantial capacity-building of participating coastal states (70% of budget). Donor support, high level mentoring (particularly on the economics of fisheries management) have also been important success factors.[7] Member support (funding) for the respective organizations is also significant and characterized by two key countries, New Zealand and Australia who play an important role as donors funding the FFA disproportionately. By contrast, PNA activities are funded from revenues generated from the management of tuna fisheries.

Indian Ocean (IO) – Constrained performance
By contrast, although the IO offers great potential for the exploitation of tuna fisheries (US $1,375 million potential economic rent p.a. for all principal tunas, and US $420 million for YFT alone), there is thought to be a minimal generation of economic rent, given that the YFT and other stocks are currently threatened by overexploitation. The fisheries management arrangements of the IOTC cost US$ 3.91 million p.a., allocated to a core secretariat of staff scientists (63%), with limited operating expenses (28%) and outsourcing (or involvement of other experts or mentors) (4%), and limited resources for capacity building (3%). There is an emphasis on a scientific approach to fisheries management, and reliance on member countries to implement and comply with agreed Conservation and Management Measures (CMM). The investment in tuna management within the IOTC, combined with the much more modest programme of work implemented by the BOBP-IGO, totaling US$ 5.14 million (0.15 % of landed value), represents only about 20% of the current WCP investment. In stark contrast to the WCP, only a very small proportion of the IO investment, both in dollar terms (about USD 580,000) and as a percentage of overall investment (11%), is targeted at coastal state development.

Compared to the WCP international benchmark, there is therefore a limited total investment in fisheries management, the allocation of existing funds is focused on stock assessment, data and compliance activities, and there is a lack of capacity and capacity-building activity to develop an

[7] See OPP-BOB Report on Methodology-cum-Implementation on Training in Fisheries Management and Development (2018)

alternative set of governance arrangements underpinned by economic principles and targets (which is widely accepted as the key to successful fisheries management).[8]

Table 8.1: Annual expenditure and fishery performance before and after investment in the Indian Ocean tuna fisheries compared with the Western Central Pacific benchmark.

Expenditure on regional / sub-regional fisheries management (USD)	Region[9]		
	WCP	IO	IO with CEIFD
Staff & overheads	16,215,727	4,137,916	6,301,503
Regional / sub-regional coordination	2,162,343	413,500	1,956,050
Technical programmes	8,547,645	585,304	2,829,500
Total expenditure	26,925,715	5,136,720	11,087,053
CS capacity development	18,742,328	643,017	6,593,350
CS capacity development (%)	70%	11%	59%
Services outsourced (%)	13-58%	2%	26%
Investment metrics			
Fisheries revenue	3,400,000,000	3,440,000,000	3,440,000,000
Costs as % of fishery revenue	0.79%	0.15%	0.32%
Potential economic rent available	1,360,000,000	1,376,000,000	1,376,000,000
Current CS economic rent	500,000,000	0	0
Potential CS economic rent realizable by 2040	750,000,000	?	?
Current CS economic rent captured (%)	37%	0%	?

Pinpointing factors for success fisheries development

Overall, therefore, the successful development and management of tuna fisheries, leading to the generation of significant economic benefits, will depend on:

- the quantity of the investment (to provide the full range of needed services);
- the quality of the investment decisions (towards achievement of SDG, wealth generation, and other objectives, and to allocate funds in key areas e.g. governance and fisheries management, method of service delivery, and on-going capacity-building).

The Investment - the Proposed Centre of Excellence

The proposed Centre of Excellence in International Fisheries Development (CEIFD), based in Chennai, will focus initially on improving management of YFT fisheries. It is estimated that the YFT fishery could generate some US$420 million p.a. if well-managed. Some US$ 46 million of this value could be recovered from the EEZ of India in the Bay of Bengal alone[10]. It is expected that the other Bay of Bengal countries (Sri Lanka, Maldives, Bangladesh) could also generate significant wealth from this fishery, within 10 years, under the leadership, and with the support of the CEIFD.

[8] See OPP-BOB Report on Design of a New Governance Framework for Tuna Fisheries Management in the Indian Ocean with special reference to India (2018)

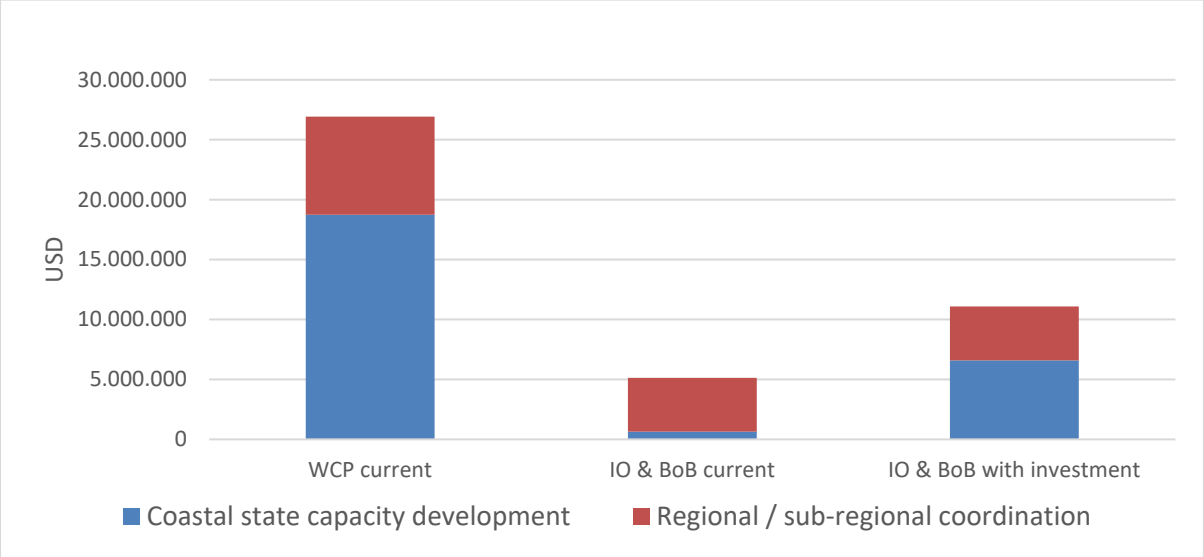
[9] The IO figures used here relate to the whole of the Indian Ocean not just the Bay of Bengal and so overstate expenditure for the Bay of Bengal in comparison to expenditure for the WCP. It should also be noted that international organisations mentioned in this analysis (WCPFC, FFA and IOTC) have tax-exempt status whereas BOBP-IGO does not and CEIFD status would be determined in the future.

[10] This estimate assumes that the GoI asserts an 80,000 mt share of the sustainable yield for the IO.

The CEIFD will be established and operated in line with the best practice principles offered by the experience of the WCPFC/FFA/PNA over the past 40 years – with a focus on sound fisheries governance underpinned by economic principles and analysis, the careful identification, development and delivery of needed fisheries services, and the design and implementation of appropriate institutions and organizations supported by long term capacity-building (Appendix 4).

The total cost of the investment in the CEIFD will be US $64.93 million over 10 years (or US $ 6 million per year) to cover set-up, development and operational costs. It is expected that this core investment and associated activities will facilitate and lever additional investment at national level. This investment is compared with the WCP investment in Figure 8.1 below. As in the WCP, it is anticipated that the total costs of the CEIFD will over time be offset by cost recovery schemes and mechanisms as the fisheries grow and develop.

Figure 8.1: Fisheries management cost comparison with and without investment and relative to investments currently made in the WCP.



Investment recommendation

Overall, the proposed investment of, on average, US $6 million per year compares favourably with the likely initial economic benefit stream of at least US $46 million per year, for India alone. Other regional partner countries are also likely to generate similar if not greater returns over time.

Therefore, the proposed investment in the CEIFD looks both worthwhile and important for the Bay of Bengal region.

9. WHAT ARE THE ASSUMPTIONS AND RISKS?

Key Points
• CEIFD will focus on BOB initially, assuming that fisheries management is also effective throughout the IO; • It is assumed that there will be political support for reform of the tuna fisheries sector in the Bay of Bengal, and greater regional collaboration given the potentially high value and returns involved; • There is a risk that intra-regional political conflicts could impact negatively on the development of opportunities to collaborate in the management of shared tuna resources; • There is a risk of both political interference and resistance from potential competitor organisations at both national and international levels, as well as from some stakeholders (reform losers); • Other assumptions include potential investors will be attracted, the fisheries will generate valuable economic returns into the future (depending on good catches and market opportunities), and tuna fisheries will not be affected by other sectors (e.g. pollution), natural disasters, or climate change.

A critical step in assessing any potential investment is to examine the key assumptions which underpin the analysis, and to consider the risks involved. The following factors will be important for the establishment and operation of the new Centre of Excellence in International Fisheries Development in Chennai:

First, the CEIFD will focus on development and management of tuna fisheries at a regional level in the Bay of Bengal, and YFT fisheries initially. Since the tuna resources involved are part of the greater IO tuna stocks, it is critically important that fisheries management is also effective throughout the IO. Despite the work of the Indian Ocean Tuna Commission, IO tuna fisheries, especially those for YFT, are increasingly threatened by overexploitation.

Second, it is assumed that there will be political support for reform of the tuna fisheries sector in the Bay of Bengal, and greater regional collaboration. This will depend, to some extent, on a better understanding of what is at stake. This will depend on the communication of knowledge to policy-makers concerning the potential value of the fisheries involved and their future contribution to Blue Growth, and the critical role of improved fisheries management as a pre-requisite for accessing these benefits and impacts.

Third, there is a risk that intra-regional political conflicts, whether pre-existing or potentially emerging in the future, could impact negatively on the development of opportunities to collaborate in the management of shared tuna resources.

Fourth, there is also likely to be a risk of both political interference and resistance concerning the establishment of the new CEIFD from potential competitor organisations at both national and international levels, as well as from those stakeholders who might be negatively affected by the fishery reform process in the future.

Fifth, it is also assumed that the proposed CEIFD will be viewed favourably and prove to be attractive to potential investors in terms of the scale, the sector specificity, the type of project, the duration, and the likely risks associated with implementation.

Sixth, the business case is built upon the assumption that the IO tuna fisheries will generate valuable economic returns into the future. This will depend, not only on sustainable and productive catches, but also on market opportunities and access in order to secure good prices.

Seventh, it is also assumed that the tuna fisheries will remain relatively stable and productive into the future, without serious negative impacts from other sectors (e.g. pollution), natural disasters, or climate change.

10. WHAT ARE THE MAIN CONCLUSIONS AND RECOMMENDATIONS?

Main conclusions

[1] UNTAPPED POTENTIAL: A number of countries in the Bay of Bengal, including India, do not have a large tuna fishing and processing sector, despite the presence of significant tuna stocks in the nearby Indian Ocean. Yellowfin tuna (YFT) is especially valued on international seafood markets. Such natural resources represent a potential source of untapped development opportunities which could contribute to Blue Growth and the realisation of the SDG. However, appropriate fisheries governance, which is currently lacking, is a critical pre-requisite to unlock this potential, especially the operation of effective fisheries management systems, underpinned by adequate human and technical capacity.

[2] BUSINESS CASE: A proposed new and innovative Centre of Excellence in International Fisheries Development (CEIFD), based in Chennai, will focus initially on improving the management of YFT fisheries, capable of generating economic benefit (rent) valued at US$ 420 million per annum. Some US$ 46 million of this value could be recovered from the EEZ of India in the BOB alone. Sri Lanka, Maldives and Bangladesh also have demonstrable potential to generate further value on a sustainable basis. The total cost of the investment in the CEIFD will be US$ 64.93 million over 10 years (or US$ 6 million per year) to cover set-up, development and operational costs. It is expected that this core investment, and its associated activities, will facilitate and lever additional investment at national level. Over time, the total costs of the CEIFD will be offset by appropriate cost recovery schemes and mechanisms as the fisheries grow and develop.

[3] BENCHMARKING AGAINST INTERNATIONAL BEST PRACTICE: The performance of the proposed investment in the CEIFD was considered against an international benchmark for tuna fisheries management – the Western Central Pacific (WCP) managed jointly by the Western Pacific Fisheries Commission (WCPFC), the Forum Fisheries Agency (FFA) and the Parties to the Nauru Agreement Office (PNAO). Currently, WCP coastal states capture economic rent worth US$ 500 million against a current investment of US$ 27 million p.a. in appropriate fisheries management (institutions and services). The BOB countries can expect to benefit similarly with suitably targeted investment in fisheries management, through the CEIFD - something which has been seriously lacking up to now (under current RFMO arrangements)- including both regional coordination and capacity development in coastal states.

[4] RISKS AND ASSUMPTIONS: Amongst a range of identifiable factors, there are two major considerations. First, while the CEIFD will focus on BOB initially, it is assumed that fisheries management will also be increasingly effective throughout the IO, given the shared nature of the tuna stocks involved. Second, there is a risk of both political interference and resistance from potential competitor organisations at both national and international levels, as well as from some stakeholders.

Recommendations:

[1] It is recommended that potential investors, both within and outside the seafood sector, should give serious consideration to future investment in the CEIFD. The business case appears to be worthwhile, with a high level of return on investment, based on the best available data and information, and taking into account a number of assumptions and risks.

[2] It is also recommended, very strongly, that potential investors interested by the above business case should give added and careful consideration to the highlighted underlying assumptions and risks.

APPENDIX 1

OCEANS PARTNERSHIP PROGRAMME – BAY OF BENGAL

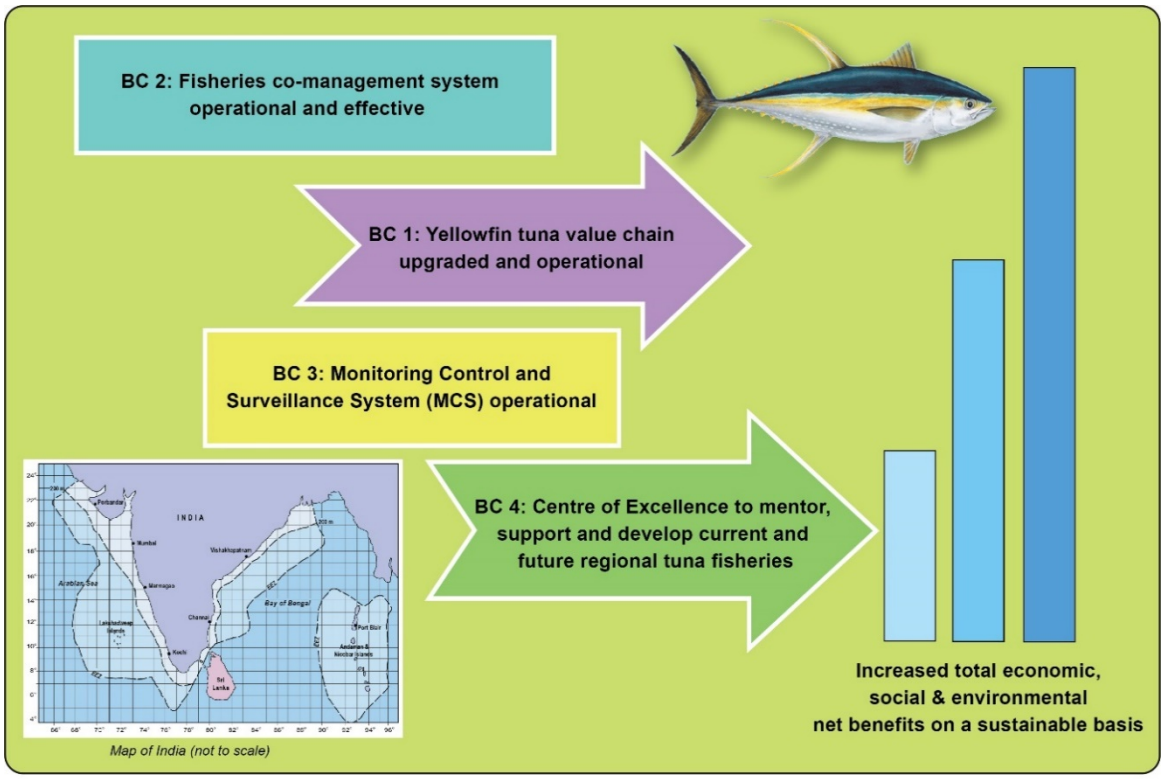
FOUR BUSINESS CASES

BRIEFING NOTE: Oceans Partnership Project – Bay of Bengal (TF 018233)

Four business cases (BC) are currently under development, with a final delivery date of 31 December 2018.

The underlying process has involved widespread stakeholder consultations and detailed analysis in India and the Bay of Bengal (BoB) Region. The likely performance of the investments involved – with reference to triple bottom line outcomes (economic, social and environmental net benefits) – has been examined using a cost-benefit analysis framework. Furthermore, careful attention has been paid to possible investment opportunities from both national and international sources. The relationships between the BC, as part of an integrated approach to fisheries development, are illustrated below.

It should be noted that the upgrading and future operation of the **tuna value chain** will be dependent on the establishment and operation of an effective fisheries **co-management system** and an **MCS system**. In the long-run, it is planned that regional tuna fisheries and value chains will be supported, mentored and developed with the assistance of a **Regional Centre of Excellence** offering, in particular, a wide range of dedicated capacity-building opportunities and services for the institutions and stakeholders involved.



OPP-BOB: Inter-relationships between the Four Business Cases

BC 1: Fish Quality Business Case for Yellowfin Tuna (YFT)

Increasing the supply of consistent high quality longline and handline caught YFT will provide a solid framework to support the sustainable development of existing and future YFT processing operations to meet current and future domestic and export market needs. Investments will result in strengthening the current value chains. The increased supply of high quality YFT will originate from the existing small-scale fishing vessels and will be supported via fishermen/

processor driven training programmes for improved onboard handling and fish preservation practices, accompanied by price premiums paid for high quality fish. Options for investment will be provided.

BC 2: Co-Management for Line Fisheries for Yellowfin Tuna (YFT) in Puducherry

Investment in a co-management mechanism for line-caught fisheries for YFT in Puducherry will establish means for local actors in the YFT value chain to manage their fishery in close consultation with concerned institutions, researchers and local co-management committees. Supported by the other related business cases, this investment will establish an example of functioning co-management where the benefits from improved fishing activities are captured by producers and local handlers, as well as other actors further up the value chain. The sustainability of these fisheries activities will be ensured through a combination of incentives for quality production and traceability of product. This will provide an example of co-management in practice to support both the Government of India's National Policy on Marine Fisheries (NPMF), 2017 and the Government of the Union Territory of Puducherry in their efforts to establish co-management of fisheries. A positive example of alternative approaches to fisheries management could be extended to adjacent coastal areas where there are similar conditions and opportunities.

BC 3: MCS for Yellowfin Tuna (YFT) for the EEZ of India in the Bay of Bengal

The Monitoring, Control and Surveillance (MCS) investment will increase sustainable economic returns recovered from YFT fishing in the Indian Exclusive Economic Zone (EEZ) of the BoB to 50% of their estimated potential value within ten years [to USD220 million]. The dedicated MCS investment in the YFT fishery will provide a stable investment and operating environment for the profitable and sustainable use of YFT and implement measures to improve fisher economic opportunities and resilience against environmental and economic shocks. The MCS investment will be designed to support value chain development and co-management initiatives. Building on the Government of India's NPMF, 2017, the investment will enhance new policy initiatives in MCS directly and through integration with value chain development programmes. Options for investment in the development of MCS systems for sub-regional application will also be provided. Target investors will encompass international and national government agencies as well as private sector interests. An investment of [USD 25 million] over 10 years will provide a high Return on Investment of [over 200%]. (*Figures in brackets may change based on on-going work during development of the BC*)

BC 4: Centre of Excellence for regional cooperation in sustainable management of SHMFS

This final business case will draw upon project outputs and business cases (above) to propose the establishment of a new Centre of Excellence for fisheries management and development in the BoB region under the *aegis* of the BOBP-IGO. The business case will be underpinned by three key elements – the opportunity to build upon the high quality work of the OPP-BOB project, the strong and wide-ranging links forged by the project at all levels (local-national-regional-international) concerning Straddling and Highly Migratory Fish Stocks (SHMFS), and the solid and well-respected reputation and institutional base provided by the BOBP-IGO. A focus on 'capacity-building for future fisheries management and development' and 'knowledge management' will be the key themes. The target investors, in the first instance, will be the government and associated partners.

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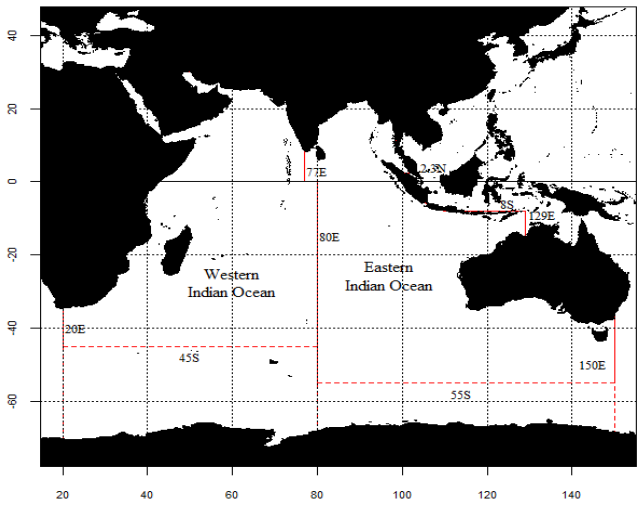
APPENDIX 2:

TUNA RESOURCES AND LANDINGS IN THE INDIAN OCEAN

Fig. 1. Indian Ocean – FAO Statistical Areas 51(Western) and 57 (Eastern)

The IOTC Areas are represented in



Source: IOTC (2013)

Tuna stocks:

- Principal market species are [1]Yellowfin, [2] Bigeye, [3] Skipjack [4] Albacore and [5] Southern Bluefin
- Another important species – Southern Bluefin occurs mainly in the southerly IO Convention Area
- Other species of tuna and tuna-like fish include: Neritic tunas, Billfishes.
- Stock distribution: Based on catch distribution and catch-and release programmes
  [1] Yellowfin: Western IO (Off Somalia, Area R2)
  [2] Bigeye: Western IO (A1) and Eastern IO (A2)
  [3] Skipjack: Western IO (R2) and Eastern IO (R1)
  [4] Albacore: Mainly South of 10°S
  [5] Southern Blue-fin: Southern waters between 30 and 50°S

Stock Assessment:

[1] Yellowfin: MSY: 421,000 - Overfished, overfishing (2015 stock assessments);
[2] Bigeye: MSY: 132,000 t - Not overfished, no overfishing (2013 stock assessment);
[3] Skipjack: MSY: 684, 000 - Not overfished, no overfishing (2014 stock assessment)
[4] Albacore: MSY: 33,300 t - Not overfished, no overfishing (uncertainty relating to this assessment)(2014)
[5] Southern Bluefin: MSY: 33,000 Heavily overfished, no overfishing (2014 stock assessment) (rebuilding plan in place).

Landings

- Indian Ocean accounts for 20% of World tuna catch (2nd after WCPO)
- Total catch of four principal commercial species were 1,003,400 t (2014)(2% increase from 2013)
- Total catch has declined since a peak in 2005 (1.2 million tonnes)

- Total catch weight (2010-14): 915,000 t.

Catch Composition and regulation

- Total catch composition by weight (2010-14): Skipjack (44%), Yellowfin (41%), Bigeye (11%), Albacore (4%)

[1] Yellowfin catch: 429,800 (2014) (6% increase since 2013)(but 19% decline since 2004 level, 530,000 t)

[2] Bigeye catch: 100,200 t (2014) (12% decrease since 2013);

[3] Skipjack catch: 432,500 t (2014) (similar level to 2013);
Management: IOTC has not established conservation measures for these species (above), or quota allocation (despite advice from the Scientific Committee, Resolution 14/02); (Resolution 15/06 discard ban by purse-seine vessels)(some other mitigation measure, but monitoring is weak);
[4] Albacore catch: 49,900 t (2014) (22% decrease since 2013)
Management: There are no conservation and management measures adopted by IOTC for albacore.
[5] Southern Blue-fin catch: 11,900 t (2014) (1% increase since 2013)
Management: Annual TAC (to rebuild stock to 20% of unfished level by 2035) est. 2011; 2015-2017 TAC is 14,647t

Catch by nation

- There are some 50 countries which currently record some landings of tuna and tuna-like species from the IO
- Largest annual catch (2014): Indonesia, Iran, the EU (Spain, France and others), India, Sri Lanka and the Maldives. All of these countries have shown an increased level of annual catch since the early 1980s.

Catch by gear types

- Total catch by gear (2010-14): Purse-seine vessels (36%), longline (19%), gillnets (18%), pole-and-line (11%)
- [1] Yellowfin catch: Purse-seine (35%), longline (20%), gillnet (15%), Misc. (24%), Pole-and-line (5%)
  Gillnet and Misc. Gears increasingly important (purse-seine and longline decreasing, pole-and-line stable);
- [2] Bigeye catch: Longline (55%) (decreasing catch overall, pirate areas avoided recently), purse-seine (28%)(stable);
- [3] Skipjack catch: Purse-seine (41%), gillnets (25%), pole-and-line (20%) (all catches falling since 2000);
- [4] Albacore catch: Drifting longlines (almost 100%);
- [5] Southern Blue-fin: Longlines (60%) and purse-seine (40%) (currently at 15% of peak in 1961);

Small-scale fishing

High diversity of coastal tuna fisheries involving neritic tunas (Longtail, Frigate, Bullet, Kawakawa, Spanish Mackerels), wide range of gears involved, both target and by-catch species. Most significant for Indonesia, and India.

Economic valuation – preliminary results – Indian Ocean tuna fisheries

- The estimated *potential* sustainable economic value of both the principal and neritic tuna stocks in the Indian Ocean is **USD 2.06 billion** (therefore, the capitalised asset value of the fish stocks @ 8% [reasonable return, long term] is **USD 26 billion**).

- By comparison: India GDP (USD 2, 067 billion), Tamil Nadu (USD 167 billion), Kerala (USD 77 billion), Sri Lanka (67 billion), Maldives (2.3 billion).

- The actual (current) economic value of the tuna stocks in the IO is not known (in terms of the current levels of resource rent being generated). However, it seems unlikely any of the fisheries involved is generating economic rents at a level close to the potential value (above) under current management arrangements.

- Improved economic performance in the future could come from three routes: (1) critically from improved management at the harvesting level, (2) from increased catch up to MSY and (3) from improved performance throughout the value chain (but 2 and 3 depend on 1 of course). It should be noted that these results are at the resource level, but the results at country level will depend on how the resources or the economic benefits from their exploitation are shared.

Reference: Neiland (2016)

APPENDIX 3:

INDIAN OCEAN – INSTITUTION AND ORGANISATIONS – TUNA AND OTHER HIGHLY MIGRATORY FISH STOCKS

Key Institutions, Membership & Mandates relating to fisheries for tuna & tuna-like species in the Indian Ocean

Institution	Membership	Mandate	Type of body	Focus & Scope	Capacity-building role & activities
IOTC - Indian Ocean Tuna Commission	*Full* Australia, Belize, China, Comoros, Eritrea, European Union, France, Guinea, Indonesia, India, Islamic Republic of Iran, Japan, Kenya, Republic of Korea, Madagascar, Malaysia, Maldives, Mauritius, Mozambique, Sultanate of Oman, Pakistan, Philippines, Seychelles, Sierra Leone, Somalia, Sri Lanka, South Africa, Sudan, Tanzania, Thailand, United Kingdom, Yemen. *Cooperating non-contracting partners* Bangladesh, Djibouti, Liberia, Senegal	*" To promote cooperation among the Contracting Parties (Members) and Cooperating Non-Contracting Parties of the IOTC with a view to ensuring, through appropriate management, the conservation and optimum utilisation of stocks covered by the organisation's establishing Agreement and encouraging sustainable development of fisheries based on such stocks."*	Established 1993 under Article XIV of FAO Constitution. Statutory body under the Food and Agriculture Organisation (FAO).	Specific focus on management of tuna fisheries in the whole Indian Ocean. Primarily concerned with collection of data for monitoring state of tuna resources, establishing national quotas for tuna catches, and negotiating those quotas among participating states. Historically strongly influenced by major DWFNs (EU in particular)	Recently has established a capacity-building fund, focussing on data collection capacity. Undertakes capacity-building activities to ensure quality of national data contributed to IOTC.
SWIOFC - South-West Indian Ocean Fisheries Commission	Comoros, France, Kenya, Madagascar, Maldives, Mauritius, Mozambique, Seychelles, Somalia, South Africa, Tanzania, Yemen.	*"To promote the sustainable utilization of the living marine resources of the Southwest Indian Ocean region, by the proper management and development of the living marine resources, and to address common problems of fisheries management and development faced by the Members of SWIOFC, without prejudice to the sovereign rights of coastal States."*	Established 2004 under Article IV 1 of the FAO Constitution (*"to advise on the formulation and implementation of policy and to coordinate the*		

Institution	Membership	Mandate	Type of body	Focus & Scope	Capacity-building role & activities
			implementation of policy.")		
RECOFI - Regional Commission for Fisheries	Bahrain, Iraq, Iran (Islamic Rep. of), Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates.	*"To promote the development, conservation, rational management and best utilization of living marine resources, as well as the sustainable development of aquaculture within its area of Agreement."*	Established 2001 under Article XIV of FAO Constitution.		
BOBP-IGO - Bay of Bengal Programme Inter-governmental Organisation	India, Sri Lanka, Bangladesh, Maldives	*"To enhance cooperation among member countries, other countries and organisations in the region and provide technical and management advisory services for sustainable coastal fisheries development and management in the Bay of Bengal region."*	Established 2003 under agreement between member countries.	Focus on regional cooperation, representation of region in international fora, implementation of projects in the region (OPP-BOB)	Extensive capacity-building role in EAFM (also for BOBLME), CCRFT, VGSSF, sea safety, port improvement, etc.
IOC - Indian Ocean Commission	Comoros, France/Réunion, Madagascar, Mauritius, Seychelles	• *Political & diplomatic cooperation,* • *Economic & commercial cooperation* • *Sustainable development in a globalisation context, cooperation in the field of agriculture, maritime fishing, & the conservation of resources and ecosystems* • *Strengthening of the regional cultural identity, cooperation in cultural, scientific, technical, educational & judicial fields.*	Established 1984 under the Victoria Agreement between member countries.		
BOB-LME	Bangladesh, India, Indonesia, Malaysia, Maldives, Myanmar, Thailand, Sri Lanka	*Phase II Vision: "A healthy ecosystem & sustainable use of marine living resources for the benefit of the people & countries of the Bay of Bengal LME"* *Components – Phase II* *1. Sustainable management of fisheries* *2. Restoration & conservation of critical marine habitats & protection of biodiversity* *3. Management of coastal & marine pollution to improve ecosystem health*	GEF supported Large Marine Ecosystem project, about to commence Phase II (implementation of Strategic Action Program)	Focus divided between environment & fisheries. Phase I has developed a Strategic Action Plan for the Bay of Bengal that will be implemented during Phase II.	Capacity-building will play important role in Phase II – exactly how capacity-building in fisheries management will be articulated with concrete fisheries management activities still to be defined.

Institution	Membership	Mandate	Type of body	Focus & Scope	Capacity-building role & activities
		4. *Improved livelihoods & enhanced resilience of BOBLME* 5. *Regional mechanism for coordination, monitoring & assessment*		Component 2 of Phase I focused on Marine Resources Management & Sustainable Use. A multilateral regional working group to guide development of fisheries management plans was set up along with a Regional Fisheries Management Advisory Committee (RFMAC) to work under a senior governing body, the Regional Fisheries Management Forum (RFMF). These have not progressed & Phase I ended up focusing on EAFM training largely unrelated to specific fisheries management activities. Phase II envisages more EAFM capacity-building & national measures to strengthen management, with possible role for a	

Institution	Membership	Mandate	Type of body	Focus & Scope	Capacity-building role & activities
				regional fisheries management body.	
SEAFDEC	Brunei Darussalam, Cambodia, Indonesia, Japan, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam	*"To promote and facilitate concerted actions among the Member Countries to ensure the sustainability of fisheries and aquaculture in Southeast Asia."* *5 technical departments:* • *Training* • *Marine Fisheries Research* • *Aquaculture* • *Marine Fishery Resources Development & Management* • *Inland Fisheries Resources Development & Management* *MFRDMD Function* *1. To provide Regional fora for consultation and cooperation in research and management of fishery resources* *2.To coordinate and implement research programmes to support sustainable development and management of fishery resources in AMSs through:* *a) Monitoring condition and exploitation of the state of fishery resource* *b) Providing scientific basis and appropriate guidelines* *c) Providing advice on management of fishery resources* *3.To provide expertise in the field of stock assessment and fishery management towards improving the capability of AMSs in sustainable development and management of fishery resources* *4.To publish, disseminate and exchange information through:*	An autonomous inter-governmental body established in 1967. MFRDMD department based in Cehndering, Kuala Terengganu, Malaysia	Has worked historically mainly on fisheries development rather than fisheries management. Strong influence from Japan on promotion of fisheries exports to Asia.	Specifically established as a training institute. More focus on fisheries development compared to fisheries management. Currently support by Sweden and Japan

Institution	Membership	Mandate	Type of body	Focus & Scope	Capacity-building role & activities
		a) Regional fora and consultation in research and management *b) Intensification of publications*			
APFIC	Australia, Bangladesh, Cambodia, China, France, India, Indonesia, Japan, Malaysia, Myanmar, Nepal, New Zealand, Pakistan, Philippines, Republic of Korea, Sri Lanka, Timor Leste, Thailand, United Kingdom, United States of America, Viet Nam.	*"to promote the full and proper utilization of living aquatic resources by the development and management of fishing and culture operations and by the development of related processing and marketing activities in conformity with the objectives of its Members, and to these ends it shall have the following functions and responsibilities:* *(a) to keep under review the state of these resources and of the industries based on them;* *(b) to formulate and recommend measures and to initiate and carry out programmes or projects to:* *(i) increase the efficiency and sustainable productivity of fisheries and aquaculture;* *(ii) conserve and manage resources;* *(iii) protect resources from pollution;* *(c) to keep under review the economic and social aspects of fishing and aquaculture industries and recommend measures aimed at improving the living and working conditions of fishermen and other workers in these industries and otherwise at improving the contribution of each fishery to social and economic goals;* *(d) to promote programmes for mariculture and coastal fisheries enhancement;* *(e) to encourage, recommend, coordinate and, as appropriate, undertake training and extension activities in all aspects of fisheries;* *(f) to encourage, recommend, coordinate and undertake, as appropriate, research and development activities in all aspects of fisheries;*	The Asia-Pacific Fishery Commission was established under the APFIC agreement as the Indo-Pacific Fisheries Council in 1948 by the Food and Agriculture Organization of the United Nations. APFIC is an Article XIV FAO Regional Fishery Body established by FAO at the request of its members.	Covers a wide range of fisheries related activities but mainly consultative and informative.	"Knowledge broker" "As appropriate", has a mandate to carry out "training & extension activities in all aspects of fisheries"

Institution	Membership	Mandate	Type of body	Focus & Scope	Capacity-building role & activities
		(g) to assemble, publish or otherwise disseminate information regarding the living aquatic resources and fisheries based on these resources; *(h) to carry out such other activities as may be necessary for the Commission to achieve its purpose as defined above.* *A Regional Consultative Forum that works in partnership with other regional organizations and arrangements and members. It provides advice, coordinates activities and acts as an information broker to increase knowledge of fisheries and aquaculture in the Asia Pacific region to underpin decision making.*			
WorldFish	Global	*The WorldFish mission is to strengthen livelihoods and enhance food and nutrition security by improving fisheries and aquaculture. We pursue this through research partnerships focused on helping those who stand to benefit the most—poor producers and consumers, women and children* *Research Programs* • *Sustainable aquaculture* • *Value chains & nutrition* • *Resilient small-scale fisheries* *Cross-cutting themes* • *Entrepreneurship* • *Gender* • *Climate change*	CGIAR research institution	Research organisation focussed on all aspects of fisheries and aquaculture globally. Head office located in Penang, Malaysia.	Capacity-building primarily within national fisheries research institutions. Some work in NGOs in some areas

APPENDIX 3 (A):

INDIAN OCEAN – INSTITUTION AND ORGANISATIONS – TUNA AND OTHER HIGHLY MIGRATORY FISH STOCKS

DIAGRAMS

Institutional Interactions in Fisheries for Tuna and Tuna-like Species in the Indian Ocean

APPENDIX 4

INSTITUTIONS FOR FISHERIES AND THE MARINE ENVIRONMENT IN THE BAY OF BENGAL – LESSONS FROM WESTERN CENTRAL PACIFIC (WCP) TUNA MANAGEMENT

Institutions for Fisheries and the Marine Environment in the Bay of Bengal – Lessons from Western Central Pacific (WCP) Tuna Management

The Bay of Bengal has many institutions operating in the fisheries and broader marine space. This business case seeks to better align and occupy the space that agencies have been unable to effectively fill with a focus on the management of tuna fisheries in the Bay of Bengal sub-region. The lessons learnt from the Pacific are very relevant in this regard and particularly in the context of tuna fisheries. These are discussed briefly below.

The Western Central Pacific (WCP), like the Bay of Bengal, has many overlapping institutions with varying roles and aspirations for management of the marine environment encompassing tuna fisheries. Four organisations, or groups of arrangements, have important roles or partial roles that contribute to the management of tuna fisheries resources and fisheries more generally in the WCP. These are described below and compared to equivalent organisations, where they exist, in the Bay of Bengal and gaps are identified:

1. At a political level, the Pacific Island Forum and the Indian Ocean Commission share similar roles. Both organisations focus on cooperation amongst participant states in the pursuit of strategic goals around regional security, economic prosperity and regional identity. Arguably the IOC is however most focussed on issues relevant to the Western Indian Ocean rather than the Bay of Bengal.

2. The Secretariat of the Pacific Community (SPC) is an international organisation that provides technical, scientific, research, policy and training services. Its mandate is wide and covers agriculture and public health, but most relevantly to this business case the SPC provides scientific support for oceanic and coastal fisheries management. As such it is the scientific arm and capacity for regional and national fisheries management in Western Central Pacific (WCP). The SPC has no direct corollary in the Bay of Bengal and arguably the scientific capacity and roles evident at the SPC are dispersed at best and spread amongst a number of national and international agencies with varying mandates (these include the IOTC, SEAFDEC and BOBLME).[11]

3. The Western Central Pacific Fisheries Commission (WCPFC) was formally established under the United Nations Fish Stocks Agreement as the competent authority for management of tuna and tuna like fisheries in the WCP region. A similar organisation exists in the Bay of Bengal in the form of the Indian Ocean Tuna Commission. Like the WCPFC, the IOTC has found it difficult to impose effective measures to ensure conservation of tuna stocks given its wide representative base and disagreement about the distribution of costs and benefits that arise from their use.

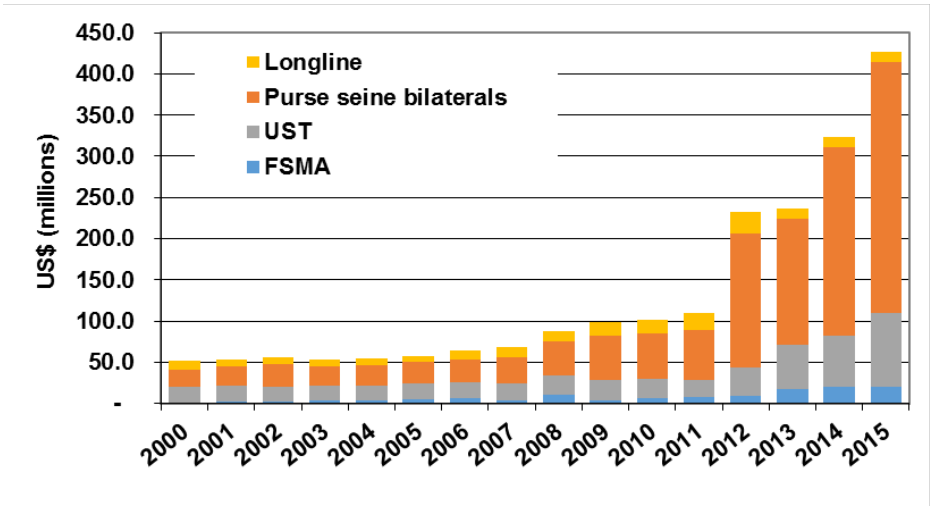
4. Lack of timely progress in implementing effective management measures has led Pacific Island states to establish a range of sub-regional agreements and supporting institutions[12]. These include, most notably, the establishment and operation of the Forum Fisheries Agency, adoption the Palau Arrangement (and the more recent Tokelau Arrangement), and under these Arrangements the adoption and implementation of the Parties to the Nauru Agreement through the administrations of the Parties to the Nauru Agreement Office. These sub-regional arrangements are significant in that they collectively encompass a dedicated capacity in fisheries management that provides both the fisheries services (such as MCS and administration of a sub-regional catch allocation scheme known as the Vessel Day Scheme) on behalf of coastal states

[11] It is noted that the Strategic Action programme for the BoBLME includes the suggestion of establishing a regional organisation that might better fulfil the functions that the SPC undertakes in the marine space in the Bay of Bengal.
[12] World Bank 2016, Tuna Fisheries: Pacific Possible Background Paper.

as well as the training and capacity building needed at national and sub-regional level to successfully manage the tuna resources.

5. Sub-regional arrangements in the WCP have proven to be highly effective towards galvanising regional solidarity amongst coastal states and in increasing and securing economic benefits that are derived from tuna fisheries. Investments have occurred in national level capacity building, development of sub-regional management capability and management systems and provision of key services such as monitoring, control and surveillance (MCS) services. These investments have increased sustainable net economic benefits captured by Pacific Island States (and derived from the skipjack fishery alone) from negligible levels to over USD 400 million per annum with considerable prospects for ongoing development into the future[13] (see Figure 1 below).

Figure 1: Historical payments made to Pacific Island states from sale of Vessel Day Scheme rights to fish skipjack in Western Central Pacific waters.



Source: Presentation from Wes Norris, Deputy Director (retired) from the Forum Fisheries Agency

6. The Bay of Bengal has no equivalent cooperation and capacity to provide sub-regional management of tuna fisheries, and associated national level capacity development, except through the limited operations of the Bay of Bengal Programme. The lesson from the Pacific is that such a sub-regional capacity can provide a foundation for coastal states to secure improved management and significant economic benefit not realizable through wider international forums. This business case seeks to fill this gap through investment in the establishment of the Centre of Excellence for International Fisheries Development.

[13] *Ibid.*

APPENDIX 5

REALISING THE SUSTAINABLE DEVELOPMENT GOALS (SDG) IN THE BAY OF BENGAL

Realising the Sustainable Development Goals in the Bay of Bengal

The global context for this investment is the realisation of the 2030 Agenda for Sustainable Development adopted by United Nations member states in 2015 under United Nations Resolution 70/1. Under this agenda, 17 Goals aspire to bring "peace and prosperity to people and planet by 2030" and come with an extensive and time-bound list of actions that member states are expected to implement. While many SDG have relevance to this business case, Goal 14 concerning life below water, establishes a number of particularly relevant targets as follows:

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans

14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels

14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics

14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information

14.6 By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation

14.7 By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism

14.a Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries

14.b Provide access for small-scale artisanal fishers to marine resources and markets

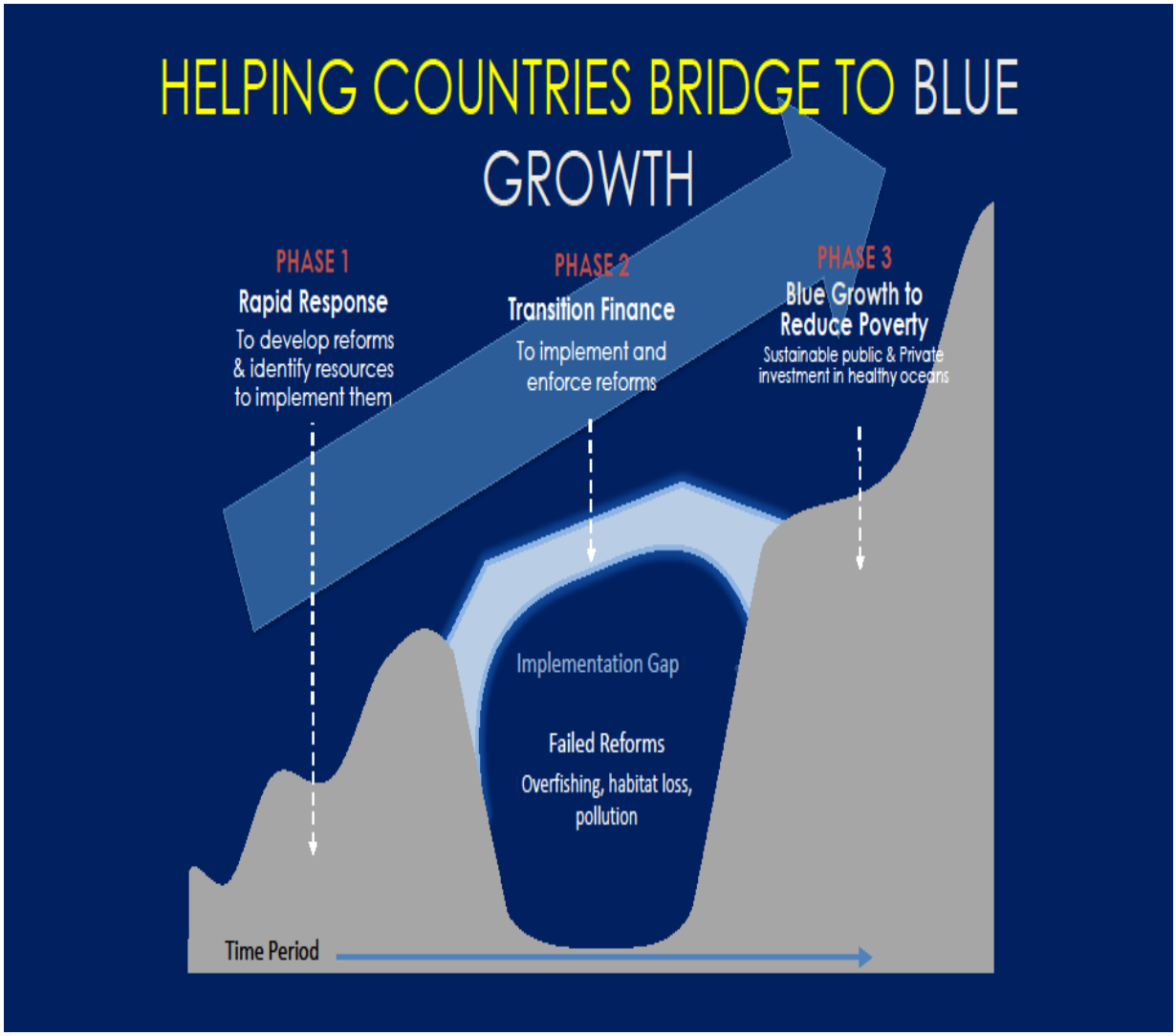
14.c Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the

conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of The Future We Want

It is clear that member states in the Bay of Bengal, all of whom are developing states, face a mountainous challenge in realising these targets within the timeframes allotted, a challenge which they are currently ill prepared to confront. At a recent monitoring control and surveillance (MCS) workshop held in Chennai (October 2018), and attended by a number of representatives from Bay of Bengal coastal states, a set of resolutions were passed linking regional MCS development to the realization of a number of these SDG 14 targets. These resolutions called for, *inter alia*, the development of options "for establishing and funding a sub-regional coordination capacity, implement sub-regional controls and provide capacity support to participating countries" for MCS in fisheries. Looking to the future this call for assistance, and wider training and capacity development to support Bay of Bengal coastal states in realising the SDG more generally, could be met at least partially through the establishment and operations of a Centre for Excellence for International Fisheries Development.

APPENDIX 6:

FISHERIES DEVELOPMENT, BLUE GROWTH AND FINANCING


HELPING COUNTRIES BRIDGE TO BLUE GROWTH
PHASE 1
Rapid Response
To develop reforms & identify resources to implement them
PHASE 2
Transition Finance
To implement and enforce reforms
PHASE 3
Blue Growth to Reduce Poverty
Sustainable public & Private investment in healthy oceans
Implementation Gap
Failed Reforms
Overfishing, habitat loss, pollution
Time Period

APPENDIX 7

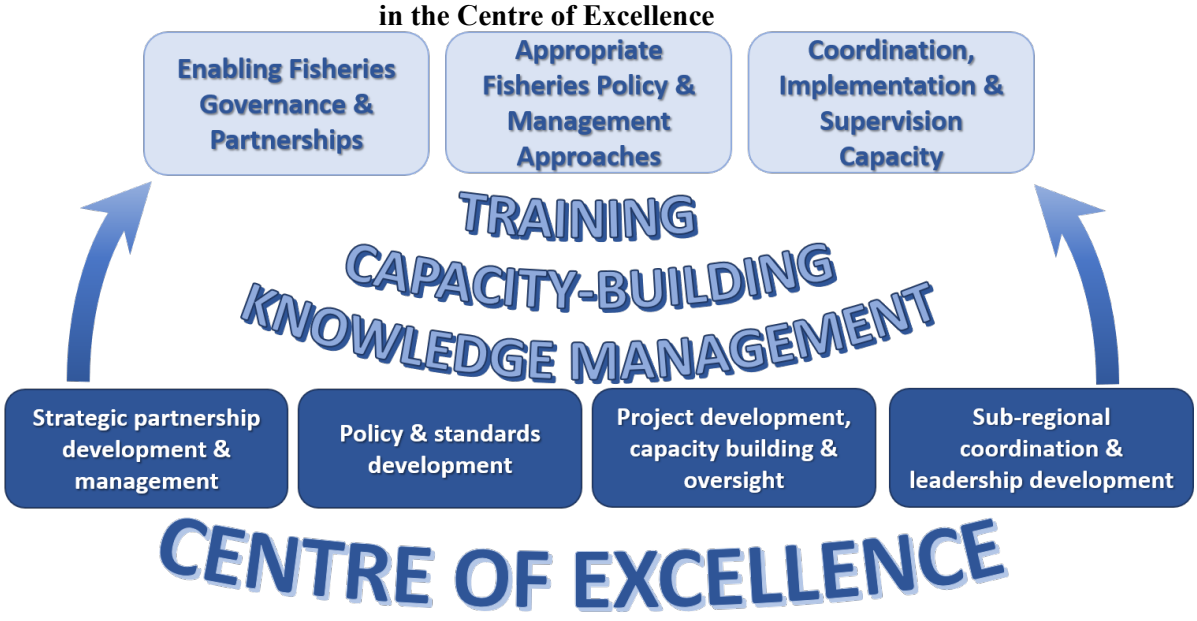
CAPACITY BUILDING, TRAINING AND KNOWLEDGE MANAGEMENT

Capacity-Building, Training and Knowledge Management in the Centre for Excellence

Building the capacity of institutions and stakeholders in fisheries in the Bay of Bengal region represents a key function of the Centre of Excellence. This capacity-building role would be articulated through a combination of:

- a collaborative and participatory working culture involving Centre staff, international experts, regional and sub-regional partner organisations and stakeholders in the fisheries sector, including the private sector;
- a focus, supported by dedicated staff and expertise, on developing detailed, output-oriented capacity-building strategies as an integral part of all the Centre's interventions, supported by capacity needs assessments of partners;
- dedicated Centre staff with responsibility for establishing international standards for capacity-building activities with the organisation and monitoring their maintenance in the Centre's interventions;
- the provision of highest quality training services through international partners contracted in for specific training interventions;
- long-term mentoring for partner organisations and individuals;
- dedicated leadership development for key personnel in partner organisations in the region;
- support, where appropriate, to longer-term educational opportunities for key personnel in regional and sub-regional partner organisation;
- facilitation of exchange and exposure visits both regionally and internationally;
- strong knowledge management through published and online materials in support of capacity-building activities.

Figure : Capacity-Building, Training and Knowledge Management in the Centre of Excellence



(adapted from OPP-BOBP 2018)

Centre of Excellence section	Key capacities	Capacity-building areas & methods
Strategic partnership development and management	Capacity within regional & sub-regional institutions to: • engage with partner organizations regionally & internationally; • design & manage partnership arrangements; • identify & engage with diverse finance institutions to mobilize investment in the sector	• Collaborative work with partner institutions to develop partnership arrangements; • Training & mentoring in finance identification & mobilization; • Training in development of financing proposals; • Exposure & exchange visits;
Policy and standards development	Capacity within regional & sub-regional institutions to: • carry out analysis to for fisheries policy development; • develop appropriate regional standards for fisheries governance & management competencies & capacities.	• Collaborative work with partners & stakeholders on fisheries policy analysis & development & fisheries governance reviews; • Formal training in: o fisheries policy development, o Blue Growth; o bio-ecological & economic underpinnings of fisheries management; o bioeconomic modelling; o fisheries management & management plan development. • Training & mentoring in development of standards for fisheries governance & management competencies; • Exchange & exposure visits
Project development, capacity-building and oversight	Capacity within regional & sub-regional institutions to: • design & develop project proposals, including business cases for investment in fisheries; • conduct capacity needs assessments & institutional reviews (MFRs); • develop capacity-building & training standards for the sector	• Collaborative work to identify & develop project proposals & opportunities; • Training & mentoring on business case development; • Training on capacity-needs assessment & institutional management & functional reviews; • Training on the design & implementation of capacity-building strategies; • Collaborative work on development o f regional capacity-building & training standards for the sector.
Sub-regional coordination and leadership development	Capacity within regional & sub-regional institutions to: • develop & maintain sub-regional networks; • provide leadership regionally & sub-regionally to catalyse change in the fisheries sector.	• Collaborative work on the development & management of regional & sub-regional networks; • Training & mentoring for leadership development; • Training & mentoring for knowledge management in the fisheries sector to improve coordination & information flows; • Regional & sub-regional exposure & exchange visits.

Capacity-building would be carried out through a combination of dedicated in-house staff whose responsibilities would be to ensure that all the Centre's activities are developed with capacity-building of partner institutions and sectoral stakeholders in mind, and through the contracting-in of trainers and mentors of the highest international standards to provide specific capacity-building inputs.

Specific projects, developed based on demand from participating countries, would provide a key vehicle for capacity-building activities, with the Project Development, Capacity-Building and Oversight section of the Centre ensuring that all support to the development and implementation of projects would be designed taking into account the capacity-building needs of regional partners and stakeholders. Capacity-building activities would include collaborative working strategies, formal training events, and longer-term mentoring support. In coordination with the Sub-Regional Coordination section, opportunities within each programme to develop leadership capabilities would be actively sought out and cultivated, including support to longer term higher educational and training option where appropriate.

Capacity-building activities would be supported by a strong knowledge management and communication strategy for the Centre, based on a strong on-line presence maintained by dedicated staff within the Centre's administrative section, and high-quality publications and media production. As part of the work of the Sub-Regional Coordination and Leadership Development section, regional and sub-regional partners would also receive training and mentoring in knowledge management to support regional coordination and provide leadership in the fisheries sector with the knowledge products and materials to support their roles.

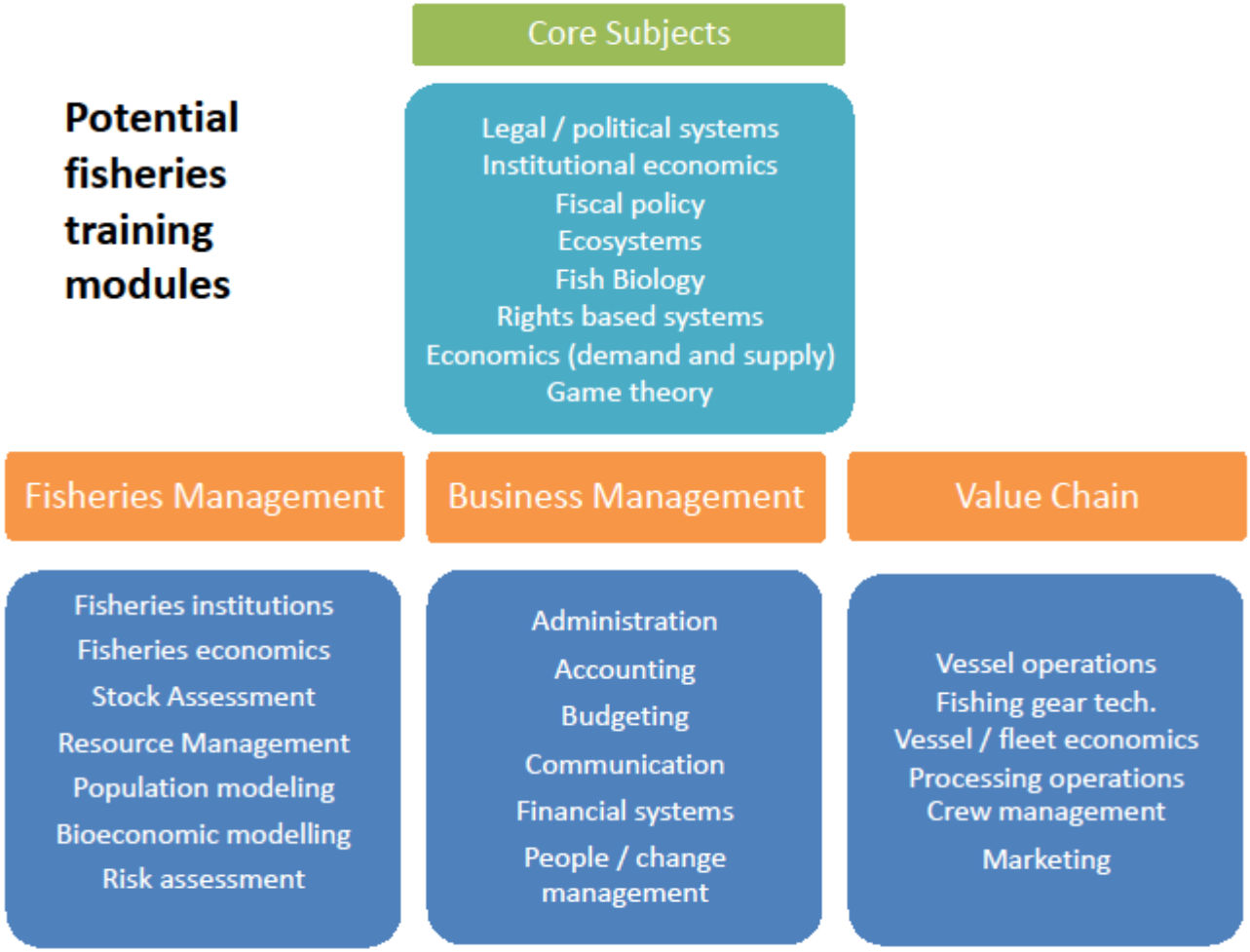
Reference

OPP-BOBP (2018b). *Deliverable No.3: Report on the Design of a Capacity-Building Strategy and Plan for the OPP-BOB Project*. OPP-BOBP, Chennai. 25p.

APPENDIX 8

FISHERIES TRAINING MODULES

Potential fisheries training modules



APPENDIX 9

CENTRE OF EXCELLENCE FOR INTERNATIONAL FISHERIES DEVELOPMENT – IMPLEMENTATION PLAN AND BUDGET

[A] Budget – Summary Table

[B]Calendar and Implementation Plan

[C] Labour Inputs and Costs

[D] Overhead Costs

[E] Travel Costs

[F] Capital Costs

[G] Total Costs

CENTRE OF EXCELLENCE - PHASED DEVELOPMENT (10 YEARS) SUMMARY	Man.days Total	Mean annual man.days	Cost (US$)
LABOUR			
Service (Consultancy) Inputs			
National	3,625.00	362.50	10,045,000.00
International	2,475.00	247.50	15,900,000.00
Total	6,100.00		25,945,000.00
Salaried staff			
Senior			8,550,000.00
Assistant			5,700,000.00
Junior			1,020,000.00
Total			15,270,000.00
TOTAL			***41,215,000.00***
OVERHEADS			
Salaried staff			6,108,000.00
TOTAL			***6,108,000.00***
TRAVEL			
Trips	No.	Man.trips	
International	46.00	954.00	5,070,000.00
Local	173.00	4,161.00	2,080,500.00
Total	219.00	5,115.00	7,150,500.00
Other costs (per diem)			
International			3,937,500.00
Local			5,022,500.00
Total			8,960,000.00
TOTAL			***16,110,500.00***
CAPITAL COSTS			
TOTAL			***1,500,000.00***
GRAND TOTAL			***64,933,500.00***

CENTRE OF EXCELLENCE - PHASED DEVELOPMENT OVER 10 YEARS

Phase		Year / Activity	1	2	3	4	5	6	7	8	9	10	[11-15]	[16-20]	[20-30]
		Activity													
[1]		**START-UP -New Centre of Excellence agreed and launched**													
Duration	1.1.	Recruit Core development team													
(Years)		Senior													
4		Assistant													
		Junior													
	1.2.	Masterplan developed and finalised (Governance reform focus)													
	1.3.	Develop change management plan encompassing infrastructure needs													
	1.4.	Revise mandate ad functions of BOBP-IGO													
	1.5.	Build coastal state leadership teams													
	1.6.	Recruit more staff													
		Senior													
		Assistant													
		Junior													
	1.7.	Retrenchment package for redundant, retiring staff													
	1.8.	Establish communications strategy and programme													
	1.9.	Secure fit for purpose office and associated facilities													
	1.10.	Establish strategic technical and financing partnerships and programme													
	1.11.	Progress review and follow-up actions													
	1.12.	Finance agreed and available													
[2]		**PILOTS DEVELOPMENT**													
Duration	2.1.	Carry out initial and ongoing assessments of coastal states													
(Years)	2.2.	Conduct technical capacity building and leadership programmes													
3	2.3.	Develop transition plans by coastal state													
	2.4.	Build business cases - 4 pilots													
	2.5.	Establish blended finance arrangements to support business cases													
	2.6.	Support business case implementation													
[3]		**CONSOLIDATION AND IMPLEMENTATION**													
Duration	3.1.	Recruit more staff													
(Years)		Senior													
6		Assistant													
		Junior													
	3.2	Communications strategy and programme													
	3.3	Office and associated facilities development													
	3.4.	Manage strategic technical and financing partnerships and programme													
	3.5.	Progress review and follow-up actions													
	3.6.	Finance arangements agreed and managed													
	3.7.	Ongoing assessments of coastal states													
	3.8.	Conduct technical capacity building and leadership programmes													
	3.9.	Manage transition plans by coastal state													
	3.10.	Business cases managed and expanded													
	3.11.	Blended finance arrangements to support business cases managed													
	3.12.	Support business case implementation													
Total years		(Total Man.days) (Mean Annual Man.days)(Total Man.trips)													
10		**TOTAL (US$)**													

			LABOUR						
		CENTRE OF EXCELLENCE	**Service (Consultancy) Inputs**						
		Phased Development over 10 Years	National						
			No. Man	No. Days	No. Years			Man.days	
Phase		**Year**				Fees	**Total**	**Total**	**Mean**
		Activity				700.00	**US$**		**annual**
[1]		**START-UP -New Centre of Excellence agreed and launched**				US$			
Duration	1.1.	Recruit Core development team							
(Years)		Senior							
4		Assistant							
		Junior							
	1.2.	Masterplan developed and finalised (Governance reform focus)	8.00	25.00	1.00	700.00	**140,000.00**	**200.00**	
	1.3.	Develop change management plan encompassing infrastructure needs	8.00	25.00	1.00	700.00	**140,000.00**	**200.00**	
	1.4.	Revise mandate ad functions of BOBP-IGO	8.00	25.00	1.00	700.00	**140,000.00**	**200.00**	
	1.5.	Build coastal state leadership teams	8.00	25.00	1.00	700.00	**140,000.00**	**200.00**	
	1.6.	Recruit more staff							
		Senior							
		Assistant							
		Junior							
	1.7.	Retrenchment package for redundant, retiring staff	-						
	1.8.	Establish communications strategy and programme	5.00	25.00	2.00	700.00	**175,000.00**	**125.00**	
	1.9.	Secure fit for purpose office and associated facilities							
	1.10.	Establish strategic technical and financing partnerships and programme	5.00	25.00	2.00	700.00	**175,000.00**	**125.00**	
	1.11.	Progress review and follow-up actions							
	1.12.	Finance agreed and available							
							910,000.00	**1,050.00**	**262.50**
[2]		**PILOTS DEVELOPMENT**							
Duration	2.1.	Carry out initial and ongoing assessments of coastal states	8.00	25.00	4.00	700.00	**560,000.00**	**200.00**	
(Years)	2.2.	Conduct technical capacity building and leadership programmes	8.00	25.00	4.00	700.00	**560,000.00**	**200.00**	
3	2.3.	Develop transition plans by coastal state	8.00	25.00	4.00	700.00	**560,000.00**	**200.00**	
	2.4.	Build business cases - 4 pilots	8.00	25.00	4.00	700.00	**560,000.00**	**200.00**	
	2.5.	Establish blended finance arrangements to support business cases	8.00	25.00	4.00	700.00	**560,000.00**	**200.00**	
	2.6.	Support business case implementation	8.00	25.00	4.00	700.00	**560,000.00**	**200.00**	
							3,360,000.00	**1,200.00**	**300.00**
[3]		**CONSOLIDATION AND IMPLEMENTATION**							
Duration	3.1.	Recruit more staff							
(Years)		Senior							
6		Assistant							
		Junior							
	3.2	Communications strategy and programme	5.00	25.00	6.00	700.00	**525,000.00**	**125.00**	
	3.3	Office and associated facilities development							
	3.4.	Manage strategic technical and financing partnerships and programme	5.00	25.00	6.00	700.00	**525,000.00**	**125.00**	
	3.5.	Progress review and follow-up actions							
	3.6.	Finance arangements agreed and managed							
	3.7.	Ongoing assessments of coastal states	5.00	25.00	6.00	700.00	**525,000.00**	**125.00**	
	3.8.	Conduct technical capacity building and leadership programmes	5.00	25.00	6.00	700.00	**525,000.00**	**125.00**	
	3.9.	Manage transition plans by coastal state	5.00	25.00	6.00	700.00	**525,000.00**	**125.00**	
	3.10.	Business cases managed and expanded	10.00	25.00	6.00	700.00	**1,050,000.00**	**250.00**	
	3.11.	Blended finance arrangements to support business cases managed	10.00	25.00	6.00	700.00	**1,050,000.00**	**250.00**	
	3.12.	Support business case implementation	10.00	25.00	6.00	700.00	**1,050,000.00**	**250.00**	
							5,775,000.00	**1,375.00**	**343.75**
Total years		(Total Man.days) (Mean Annual Man.days)(Total Man.trips)						**3,625.00**	**362.50**
10		**TOTAL (US$)**					**10,045,000.00**		

			LABOUR						
		CENTRE OF EXCELLENCE							
			International						
			No. Man	No. Days	No. Years			Man.days	
Phase		**Year**				Man.day	**Total**	**Total**	**Mean**
		Activity				2,000.00			**annual**
[1]		**START-UP -New Centre of Excellence agreed and launched**				US$			
Duration	1.1.	Recruit Core development team							
(Years)		Senior							
4		Assistant							
		Junior							
	1.2.	Masterplan developed and finalised (Governance reform focus)	4.00	25.00	1.00	2,000.00	**200,000.00**	**100.00**	
	1.3.	Develop change management plan encompassing infrastructure needs	4.00	25.00	1.00	2,000.00	**200,000.00**	**100.00**	
	1.4.	Revise mandate ad functions of BOBP-IGO	4.00	25.00	1.00	2,000.00	**200,000.00**	**100.00**	
	1.5.	Build coastal state leadership teams	4.00	25.00	1.00	2,000.00	**200,000.00**	**100.00**	
	1.6.	Recruit more staff							
		Senior							
		Assistant							
		Junior							
	1.7.	Retrenchment package for redundant, retiring staff	-						
	1.8.	Establish communications strategy and programme	2.00	25.00	2.00	2,000.00	**200,000.00**	**50.00**	
	1.9.	Secure fit for purpose office and associated facilities							
	1.10.	Establish strategic technical and financing partnerships and programme	2.00	25.00	2.00	2,000.00	**200,000.00**	**50.00**	
	1.11.	Progress review and follow-up actions							
	1.12.	Finance agreed and available							
							1,200,000.00	**500.00**	**125.00**
[2]		**PILOTS DEVELOPMENT**							
Duration	2.1.	Carry out initial and ongoing assessments of coastal states	4.00	25.00	4.00	2,000.00	**800,000.00**	**100.00**	
(Years)	2.2.	Conduct technical capacity building and leadership programmes	4.00	25.00	4.00	2,000.00	**800,000.00**	**100.00**	
3	2.3.	Develop transition plans by coastal state	4.00	25.00	4.00	2,000.00	**800,000.00**	**100.00**	
	2.4.	Build business cases - 4 pilots	4.00	25.00	4.00	2,000.00	**800,000.00**	**100.00**	
	2.5.	Establish blended finance arrangements to support business cases	4.00	25.00	4.00	2,000.00	**800,000.00**	**100.00**	
	2.6.	Support business case implementation	4.00	25.00	4.00	2,000.00	**800,000.00**	**100.00**	
							4,800,000.00	**600.00**	**150.00**
[3]		**CONSOLIDATION AND IMPLEMENTATION**							
Duration	3.1.	Recruit more staff							
(Years)		Senior							
6		Assistant							
		Junior							
	3.2	Communications strategy and programme	5.00	25.00	6.00	1,200.00	**900,000.00**	**125.00**	
	3.3	Office and associated facilities development							
	3.4.	Manage strategic technical and financing partnerships and programme	5.00	25.00	6.00	1,200.00	**900,000.00**	**125.00**	
	3.5.	Progress review and follow-up actions							
	3.6.	Finance arangements agreed and managed							
	3.7.	Ongoing assessments of coastal states	5.00	25.00	6.00	1,200.00	**900,000.00**	**125.00**	
	3.8.	Conduct technical capacity building and leadership programmes	5.00	25.00	6.00	1,200.00	**900,000.00**	**125.00**	
	3.9.	Manage transition plans by coastal state	5.00	25.00	6.00	1,200.00	**900,000.00**	**125.00**	
	3.10.	Business cases managed and expanded	10.00	25.00	6.00	1,200.00	**1,800,000.00**	**250.00**	
	3.11.	Blended finance arrangements to support business cases managed	10.00	25.00	6.00	1,200.00	**1,800,000.00**	**250.00**	
	3.12.	Support business case implementation	10.00	25.00	6.00	1,200.00	**1,800,000.00**	**250.00**	
							9,900,000.00	**1,375.00**	**343.75**
Total years		(Total Man.days) (Mean Annual Man.days)(Total Man.trips)						**2,475.00**	**247.50**
10		**TOTAL (US$)**					**15,900,000.00**		

LABOUR								OVERHEADS
Salaried staff								Salaried staff
No. Man	No. Days	No. Years	Senior 150,000 US$	Assist 100,000.00 US$	Junior 20,000 US$	Total	TOTAL US$	Overheads 40% salaried staff 0.40 US$
3.00		4.00	150,000.00			1,800,000.00	1,800,000.00	720,000.00
3.00		4.00		100,000.00		1,200,000.00	1,200,000.00	480,000.00
3.00		4.00			20,000.00	240,000.00	240,000.00	96,000.00
							340,000.00	
							340,000.00	
							340,000.00	
							340,000.00	
3.00		3.00	150,000.00			1,350,000.00	1,350,000.00	540,000.00
3.00		3.00		100,000.00		900,000.00	900,000.00	360,000.00
3.00		3.00			20,000.00	180,000.00	180,000.00	72,000.00
							375,000.00	
							375,000.00	
						5,670,000.00	7,780,000.00	2,268,000.00
							1,360,000.00	
							1,360,000.00	
							1,360,000.00	
							1,360,000.00	
							1,360,000.00	
							1,360,000.00	
							-	
							8,160,000.00	-
6.00		6.00	150,000.00			5,400,000.00	5,400,000.00	2,160,000.00
6.00		6.00		100,000.00		3,600,000.00	3,600,000.00	1,440,000.00
5.00		6.00			20,000.00	600,000.00	600,000.00	240,000.00
							-	
							1,425,000.00	
							-	
							1,425,000.00	
							-	
							-	
							1,425,000.00	
							1,425,000.00	
							1,425,000.00	
							2,850,000.00	
							2,850,000.00	
							2,850,000.00	
							-	
						9,600,000.00	25,275,000.00	3,840,000.00
						15,270,000.00	41,215,000.00	6,108,000.00

TRAVEL								
Travel								
Air, Other								
International 5,000.00 US$	No. trips	Total US$	No. man.trips	***Local*** 500.00 US$	No. trips	Total US$	No. man.trips	**TOTAL** US$
								-
	1.00	60,000.00	12.00		10.00	60,000.00	120.00	120,000.00
	1.00	60,000.00	12.00		10.00	60,000.00	120.00	120,000.00
	-	-	-		1.00	6,000.00	12.00	6,000.00
	2.00	40,000.00	8.00		5.00	20,000.00	40.00	60,000.00
	2.00	40,000.00	8.00		5.00	20,000.00	40.00	60,000.00
	2.00	40,000.00	8.00		5.00	20,000.00	40.00	60,000.00
	2.00	40,000.00	8.00		5.00	20,000.00	40.00	60,000.00
			-					
	1.00	45,000.00	9.00		10.00	45,000.00	90.00	90,000.00
	1.00	45,000.00	9.00		10.00	45,000.00	90.00	90,000.00
	-	-	-		1.00	4,500.00	9.00	4,500.00
			-					
	2.00	40,000.00	8.00		10.00	50,000.00	100.00	90,000.00
			-					
	2.00	40,000.00	8.00		10.00	50,000.00	100.00	90,000.00
	16.00	450,000.00	90.00		82.00	400,500.00	801.00	**850,500.00**
	2.00	160,000.00	32.00		5.00	80,000.00	160.00	240,000.00
	2.00	160,000.00	32.00		5.00	80,000.00	160.00	240,000.00
	2.00	160,000.00	32.00		5.00	80,000.00	160.00	240,000.00
	2.00	160,000.00	32.00		5.00	80,000.00	160.00	240,000.00
	2.00	160,000.00	32.00		5.00	80,000.00	160.00	240,000.00
	2.00	160,000.00	32.00		5.00	80,000.00	160.00	240,000.00
	12.00	960,000.00	192.00		30.00	480,000.00	960.00	**1,440,000.00**
	1.00	180,000.00	36.00		10.00	180,000.00	360.00	360,000.00
	1.00	180,000.00	36.00		10.00	180,000.00	360.00	360,000.00
	-	-			1.00	15,000.00	30.00	15,000.00
	2.00	300,000.00	30.00		5.00	75,000.00	150.00	375,000.00
	2.00	300,000.00	30.00		5.00	75,000.00	150.00	375,000.00
	2.00	300,000.00	60.00		5.00	75,000.00	150.00	375,000.00
	2.00	300,000.00	60.00		5.00	75,000.00	150.00	375,000.00
	2.00	300,000.00	60.00		5.00	75,000.00	150.00	375,000.00
	2.00	600,000.00	120.00		5.00	150,000.00	300.00	750,000.00
	2.00	600,000.00	120.00		5.00	150,000.00	300.00	750,000.00
	2.00	600,000.00	120.00		5.00	150,000.00	300.00	750,000.00
	18.00	3,660,000.00	672.00		61.00	1,200,000.00	2,400.00	**4,860,000.00**
	46.00		954.00		173.00		4,161.00	
								7,150,500.00

Per diem					
National experts		International experts			
Per diem	**Total**	Per diem	**Total**	**TOTAL**	**TOTAL**
350.00		350.00			**US$**
US$		US$			
					120,000.00
					120,000.00
					6,000.00
350.00	**70,000.00**	350.00	**35,000.00**	**105,000.00**	165,000.00
350.00	**70,000.00**	350.00	**35,000.00**	**105,000.00**	165,000.00
350.00	**70,000.00**	350.00	**35,000.00**	**105,000.00**	165,000.00
350.00	**70,000.00**	350.00	**35,000.00**	**105,000.00**	165,000.00
					-
					90,000.00
					90,000.00
					4,500.00
					-
350.00	**87,500.00**	350.00	**35,000.00**	**122,500.00**	212,500.00
				-	-
350.00	**87,500.00**	350.00	**35,000.00**	**122,500.00**	212,500.00
					-
					-
	455,000.00		**210,000.00**	**665,000.00**	**1,515,500.00**
					-
					-
350.00	**280,000.00**	350.00	**140,000.00**	**420,000.00**	660,000.00
350.00	**280,000.00**	350.00	**140,000.00**	**420,000.00**	660,000.00
350.00	**280,000.00**	350.00	**140,000.00**	**420,000.00**	660,000.00
350.00	**280,000.00**	350.00	**140,000.00**	**420,000.00**	660,000.00
350.00	**280,000.00**	350.00	**140,000.00**	**420,000.00**	660,000.00
350.00	**280,000.00**	350.00	**140,000.00**	**420,000.00**	660,000.00
					-
	1,680,000.00		**840,000.00**	**2,520,000.00**	**3,960,000.00**
					-
					-
					-
					360,000.00
					360,000.00
					15,000.00
					-
350.00	**262,500.00**	350.00	**262,500.00**	**525,000.00**	900,000.00
					-
350.00	**262,500.00**	350.00	**262,500.00**	**525,000.00**	900,000.00
					-
					-
350.00	**262,500.00**	350.00	**262,500.00**	**525,000.00**	900,000.00
350.00	**262,500.00**	350.00	**262,500.00**	**525,000.00**	900,000.00
350.00	**262,500.00**	350.00	**262,500.00**	**525,000.00**	900,000.00
350.00	**525,000.00**	350.00	**525,000.00**	**1,050,000.00**	1,800,000.00
350.00	**525,000.00**	350.00	**525,000.00**	**1,050,000.00**	1,800,000.00
350.00	**525,000.00**	350.00	**525,000.00**	**1,050,000.00**	1,800,000.00
					-
	2,887,500.00		**2,887,500.00**	**5,775,000.00**	**10,635,000.00**
					-
				8,960,000.00	**16,110,500.00**

CAPITAL COSTS		GRAND TOTAL
Capital costs		
Office Computing Equipment	TOTAL US$	
	-	
		1,920,000.00
		1,320,000.00
		246,000.00
		505,000.00
		505,000.00
		505,000.00
		505,000.00
		-
		1,440,000.00
		990,000.00
		184,500.00
		-
		587,500.00
	500,000.00	500,000.00
		587,500.00
		-
		-
	500,000.00	12,063,500.00
		-
	500,000.00	500,000.00
		2,020,000.00
		2,020,000.00
		2,020,000.00
		2,020,000.00
		2,020,000.00
		2,020,000.00
		-
	500,000.00	12,620,000.00
		-
	500,000.00	500,000.00
		-
		5,760,000.00
		3,960,000.00
		615,000.00
		-
		2,325,000.00
		-
		2,325,000.00
		-
		-
		2,325,000.00
		2,325,000.00
		2,325,000.00
		4,650,000.00
		4,650,000.00
		4,650,000.00
		-
	500,000.00	40,250,000.00
	1,500,000.00	64,933,500.00

APPENDIX 10

WITH AND WITHOUT COMPARISON OF FISHERIES MANAGEMENT EXPENDITURE ON CAPACITY-BUILDING AND MANAGEMENT ACTIVITIES FOR TUNA IN THE INDIAN OCEAN RELATIVE TO THE WESTERN CENTRAL PACIFIC

WITH AND WITHOUT COMPARISON OF FISHERIES MANAGEMENT EXPENDITURE ON CAPACITY-BUILDING AND MANAGEMENT ACTIVITIES FOR TUNA IN THE INDIAN OCEAN RELATIVE TO THE WESTERN CENTRAL PACIFIC

Budget year	2015	2016	2014		2018	2019		2019	
Organisation	**WCPFC**	**FFA**	**PNA**	**WCP**	**BOBP**	**IOTC**	**IO**	**CEIFD**	**IO with CEIFD**
Staff & overheads	3.652.240	11.843.487	720.000	16.215.727	124.213	4.013.703	4.137.916	2.287.800	6.301.503
Regional / subregional coordination	497.000	1.365.343	300.000	2.162.343	68.500	345.000	413.500	1.611.050	1.956.050
Technical programmes	2.718.804	4.448.841	1.380.000	8.547.645	350.304	235.000	585.304	2.594.500	2.829.500
Total expenditure	**6.868.044**	**17.657.671**	**2.400.000**	**26.925.715**	**543.017**	**4.593.703**	**5.136.720**	**6.493.350**	11.087.053
Coastal state capacity development	50.000	16.292.328	2.400.000	18.742.328	543.017	100.000	643.017	6.493.350	6.593.350
Coastal state capacity development	1%	92%	100%	70%	100%	2%	11%	100%	59%
Services outsourced	13%	?	58%	13-58%	33%	2%	2%	40%	26%
Fisheries revenue	3.400.000.000	3.400.000.000	3.400.000.000	3.400.000.000	3.440.000.000	3.440.000.000	3.440.000.000	3.440.000.000	3.440.000.000
Costs as % of fishery revenue	0,20%	0,52%	0,07%	0,79%	0,02%	0,13%	0,15%	0,19%	0,32%
Potential economic rent available				1.360.000.000			1.376.000.000	1.376.000.000	1.376.000.000
Current Coastal State economic rent (USD)				500.000.000			0	0	0
Potential Coastal State economic rent (USD)				750.000.000			?	?	?
Current Coastal State economic rent (%)				37%			0%	0%	0%

Notes to accompany Appendix 10 (Table)

Annual expenditure on tuna management within existing agencies in the Western Central Pacific (WCP) and the Bay of Bengal (BoB) are detailed and then aggregated.

Costs for staff and overheads, regional / sub-regional coordination, technical programmes, coastal state capacity development, and for percentages of services outsourced are estimated on a best endeavours basis from descriptions of budgets and programme categories available from publicly released annual reports, strategic plans and budgets from the various agencies. Budget years from which this information was sourced are noted.

Overall annual expenditure on tuna management in the BoB is only 20% (US$5.14 million) of equivalent expenditure in the WCP (US$26.93 million) even assuming all Indian Ocean costs incurred by the IOTC are assigned to the BoB.

Expenditure on coastal state development (capacity building) is US$18 million in the WCP but only US$0.64 million in the BoB.

The amount of services outsourced varies between agencies with the highest level of outsourcing is carried out by the PNAO which provides services fully cost recovered from participating members.

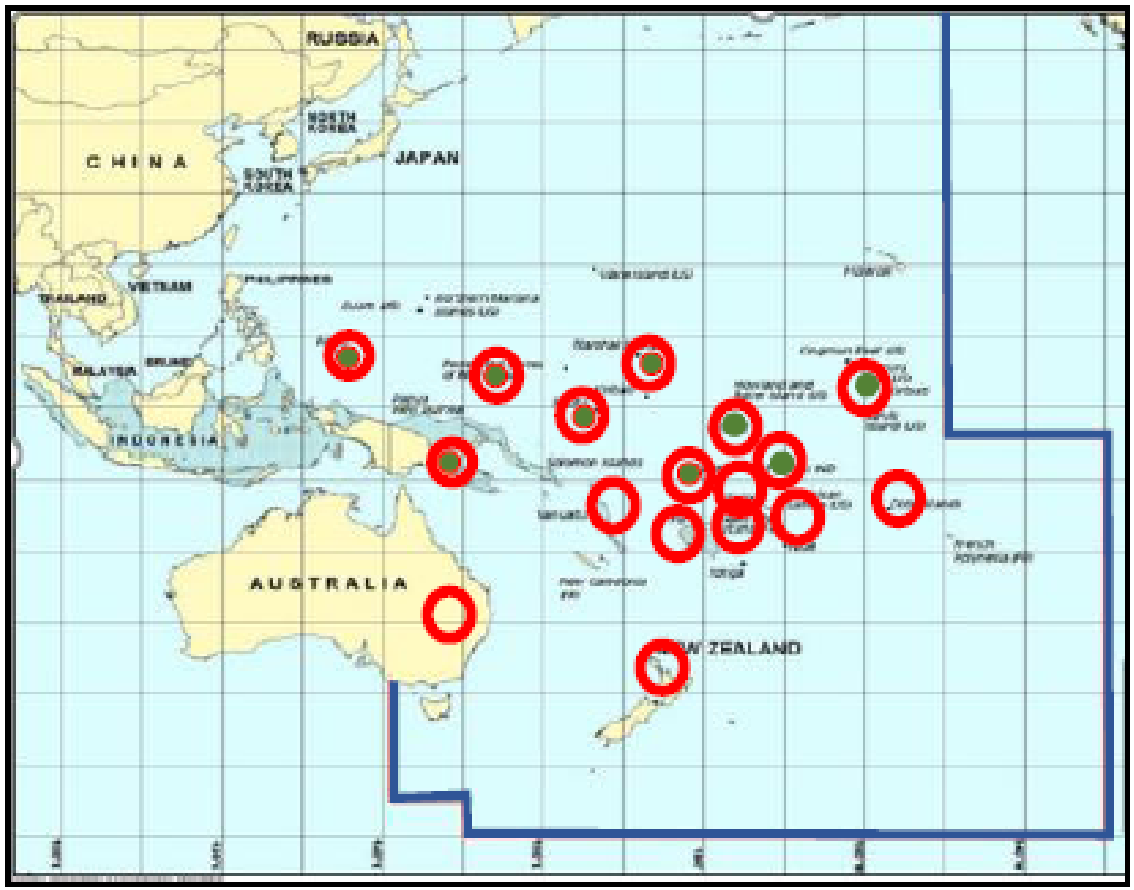
Tuna fishery revenues are similar between the two areas at around US$ 3.4 billion.

In contrast to the WCP, where coastal states recover about 37% (US$500 million) of this revenue as economic surplus, none of the estimated US$1.4 billion of the economic surplus available in the BoB is being recovered.

As a percentage of fishery revenue, annual expenditure on tuna management (including coastal state capacity development) is about 0.79 % in the WCP compared to 0.15% in the BoB (denoted IO in the table).

A modest investment in the establishment and operation of CEIFD will increase expenditure on tuna management in the BoB to 0.32% of revenues, still considerably less than occurs in the WCP where all costs are dedicated to management of the WCP area (in the BoB the IOTC costs also encompass the Western and Southern Indian Ocean as well as the BoB).

Western Central Pacific Tuna Fisheries Agencies (membership)

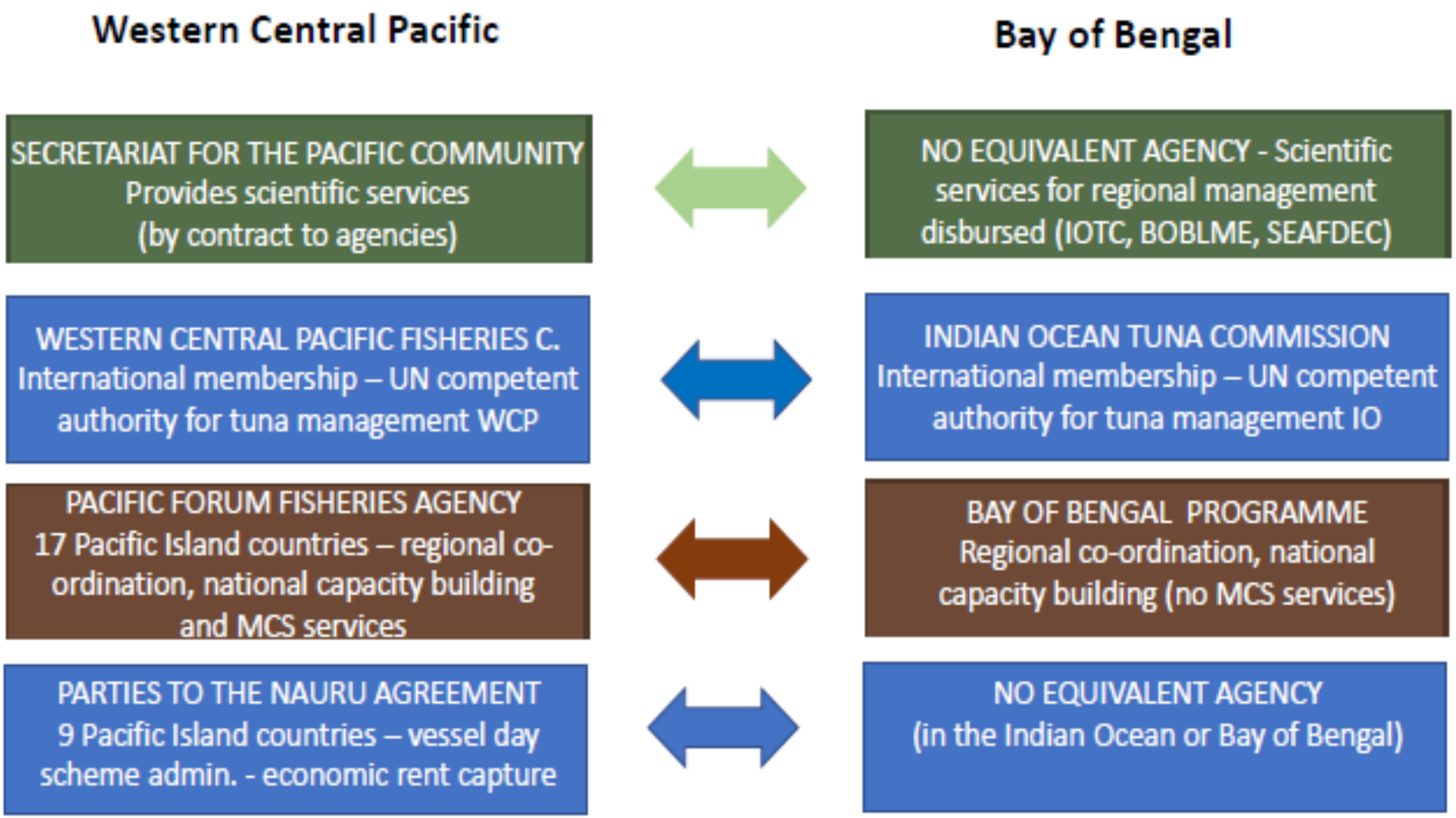


Western Central Pacific Fisheries Commission
- located in Micronesia
- global membership

Pacific Forum Fisheries Agency
- located in Solomon Islands
- 17 Pacific Island members

Parties to the Nauru Agreement
- located in the Marshall Islands)
- 9 Pacific Island members

Functional comparison WCP vs IO tuna agencies



Comparison of WCP tuna investment with IO

Budget year	2015	2016	2014	
Organisation	WCPFC	FFA	PNA	WCP
Staff & overheads	3,652,240	11,843,487	720,000	16,215,727
Regional / sub-regional coordination	497,000	1,365,343	300,000	2,162,343
Technical programmes	2,718,804	4,448,841	1,380,000	8,547,645
Total expenditure	6,868,044	17,657,671	2,400,000	26,925,715
Coastal state capacity development	50,000	16,292,328	2,400,000	18,742,328
Coastal state capacity development	1%	92%	100%	70%
Services outsourced	13%	?	58%	13-58%
Fisheries revenue	3,400,000,000	3,400,000,000	3,400,000,000	3,400,000,000
Costs as % of fishery revenue	0.20%	0.52%	0.07%	0.79%
Potential economic rent available				1,360,000,000
Current Coastal State economic rent (USD)				500,000,000
Potential Coastal State economic rent (USD)				750,000,000
Current Coastal State economic rent (%)				37%

Comparison of WCP tuna investment with IO

Budget year	2015	2016	2014		2018	2019		2019
Organisation	WCPFC	FFA	PNA	WCP	BOBP	IOTC	IO	CEIFD
Staff & overheads	3,652,240	11,843,487	720,000	16,215,727	124,213	4,013,703	4,137,916	2,287,800
Regional / sub-regional coordination	497,000	1,365,343	300,000	2,162,343	68,500	345,000	413,500	1,611,050
Technical programmes	2,718,804	4,448,841	1,380,000	8,547,645	350,304	235,000	585,304	2,594,500
Total expenditure	6,868,044	17,657,671	2,400,000	26,925,715	543,017	4,593,703	5,136,720	6,493,350
Coastal state capacity development	50,000	16,292,328	2,400,000	18,742,328	543,017	100,000	643,017	6,493,350
Coastal state capacity development	1%	92%	100%	70%	100%	2%	11%	100%
Services outsourced	13%	?	58%	13-58%	33%	2%	2%	40%
Fisheries revenue	3,400,000,000	3,400,000,000	3,400,000,000	3,400,000,000	3,440,000,000	3,440,000,000	3,440,000,000	3,440,000,000
Costs as % of fishery revenue	0.20%	0.52%	0.07%	0.79%	0.02%	0.13%	0.15%	0.19%
Potential economic rent available				1,360,000,000			1,376,000,000	1,376,000,000
Current Coastal State economic rent (USD)				500,000,000			0	0
Potential Coastal State economic rent (USD)				750,000,000			?	?
Current Coastal State economic rent (%)				37%			0%	0%

Investment will increase from US$ 5 to US$ 11 million per year

(0.32% of value)

EXPENDITURE ON REGIONAL / SUB-REGIONAL FISHERIES MANAGEMENT	REGION		
	WCP	IO	IO with CEIFD
Staff & overheads	16,215,727	4,137,916	6,301,503
Regional / sub-regional coordination	2,162,343	413,500	1,956,050
Technical programmes	8,547,645	585,304	2,829,500
Total expenditure	26,925,715	5,136,720	11,087,053
CS capacity development	18,742,328	643,017	6,593,350
CS capacity development (%)	70%	11%	59%
Services outsourced (%)	13-58%	2%	26%
Investment metrics			
Fisheries revenue	3,400,000,000	3,440,000,000	3,440,000,000
Costs as % of fishery revenue	0.79%	0.15%	0.32%
Potential economic rent available	1,360,000,000	1,376,000,000	1,376,000,000
Current CS economic rent	500,000,000	0	0
Potential CS economic rent realisable by 2040	750,000,000	?	?
Current CS economic rent captured (%)	37%	0%	?

APPENDIX 11

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BIBLIOGRAPHY

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Business Case 4: A Business Case for a Centre of Excellence in International Fisheries Development (CEIFD)

Annex 11: Environmental and Social Safeguards

1.0 Overarching environmental risks

Addressing the need for proper management of yellowfin tuna resources in the Bay of Bengal is the principle objective of the 4 Business Cases developed under the 'Ocean Partnerships for Sustainable Fisheries and Biodiversity Conservation – Models for Innovation and Reform Project (OPP-BOB)' by the Implementing Agency, the Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO). Any investment in the yellowfin tuna (YFT) fishing sub-sector, including the investment in improved value chains for high-quality, high-value YFT in South India proposed in Business Case No.1, creates the potential for encouraging increased fishing effort that could, without effective management, lead to the degradation of the resources on which these investments depend.

The OPP-BOB has addressed this issue by supporting the Business Case 1 with 3 other Business Cases, the principle purpose of which is to ensure that investment in improved YFT value chains are nested within improved measures and institutional arrangements for the proper management of YFT resources. These include:

- Investment in the development of co-management arrangements for YFT fisheries in the Union Territory of Puducherry, with a view to creating a model for fisheries co-management that could be adapted and developed upon in other areas of the east coast of India. A key feature of this investment includes the engagement of all stakeholders in YFT value chains in the management process, including private sector producers and operators in processing and marketing, community-based mechanisms for decision-making and distribution of benefits generated from improved management of the resource, inclusion of existing community actors such as the caste, Panchayat and community-based decision-making structures in the process, engagement with existing government institutions, and the development of a third-party intermediary organization(s) to facilitate the long-term process of hand-holding and developing appropriate management arrangements;
- Investment in a Monitoring, Control and Surveillance (MCS) mechanisms that will provide essential support to the implementation of more effective management arrangements at the local, state and, eventually, national levels; and
- Investment in a Centre of Excellence in International Fisheries Development to provide long-term support to the process of developing effective fisheries management for YFT resources in the Bay of Bengal as well as advice and direction to institutions in the region regarding future investment and development of YFT fisheries.

The four OPP-BOB business cases are presented separately as they each deal with distinct levels of intervention, involving different scales of investment that are likely to be of interest for different types of investors. However, the OPP-BOB has emphasized that these four investments are highly **interdependent** and should **not** be considered in isolation from one another and the dangers involved in considering any of these investments in isolation are highlighted.

Investment in improved YFT value chains (Business Case No.1) must be nested within wider investments in the development of the management arrangements (Business Cases 2, 3 and 4) that would ensure a sustainable environmental and institutional framework that would underpin the sustainability, and positive economic returns, from Business Case No.1.

The focus of investment in Business Case No.1 on low-volume, high-quality landings of YFT tuna, with close attention to the monitoring of quality and sustainability in fishing methods would also serve, within a framework of better management arrangements, to limit the potential for overexploitation of the resource.

2.0 Overarching social risks

The introduction of new fisheries management arrangements, particularly in a context of *de facto* open-access fisheries with limited effective regulation of fishing activity, may generate short-term risks for the livelihoods of those currently involved in fisheries. This is certainly the case with regard to fisheries for YFT on the Bay of Bengal coast of India. Currently, access to these fisheries is effectively open with no limitations imposed on fishing effort by the mostly small-scale fishing fleet beyond the access of fishers to the technology and skills required to exploit this fishery. Currently, specific targeting of YFT by small-scale fishers is limited to a few operations such as those that are identified as having potential for development in Business Case No.1. As a result, YFT catches are largely limited to YFT harvested by drift gillnets by small-scale operations operating in coastal waters and along the edge of the continental shelf that land mixed tuna catches (mostly skipjack tuna) of low quality and generating low returns.

The proposed investments in improved value chains for high-quality YFT in Business Case No.1 would be underpinned by management arrangements proposed in the Business Cases 2 and 3 that would place limits on the fishing operations, specifically targeting YFT while capturing a proportion of the added value generated by these fisheries through improved handling and marketing. An important feature of the co-management arrangements proposed in Business Case No.2 would be to establish mechanisms by which a part of this added value would be channeled to the wider fishing community to compensate for the limitations imposed on the numbers of fishing operations targeting this particular resource. The MCS arrangements proposed in Business Case No.3 would ensure that these limitations, that would be essential for ensuring the sustainability of the investments, are enforced.

As with any set of new fisheries management arrangements, the OPP-BOB proposals recognize the social issues involved and lay out a long-term, inclusive process of consultation, negotiation and community-based monitoring and control that would serve to identify and deal with potential social risks associated with these arrangements. The proposal of an independent, third-party institution in Business Case No.2 to take the lead in mediating and negotiating arrangements that satisfy all the stakeholders involved is important in this respect. All the proposals foresee key roles for key mandated government institutions in supporting the process and overseeing its implementation and ensuring that they are aligned with government's social development and distributive priorities.

The long-term time-frames envisaged for all the proposed Business Cases recognize that the processes involved in establishing fisheries management arrangements are complex and require a long-term perspective. Recognition of this is essential in order to develop inclusive arrangements that accommodate the concerns and priorities of different stakeholders while ensuring the sustainability of the resource base on which fisheries livelihoods depend.

In addition to these overarching social and environmental concerns, specific risks associated with each of the OPP-BOB Business Cases are addressed below.

3.0 Specific environmental risks and their management

Any eventual environmental risks associated with the construction of new facilities for the Centre of Excellence (if required) will be addressed through the existing comprehensive legislation and enforcement mechanisms within India and most regional states where such a centre might eventually be established. Additional safeguards would need to be assessed based on the relative strengths of existing systems within whichever country the centre was eventually to be located.

However, such a Centre would be regional in nature and fall under the category of an Inter-Governmental Body or in other words as a Regional Fisheries Body, mandated to be advisory or with management functions. The headquarters of such a body, in whichever country it is finally located, is set up under a 'Headquarters Agreement' signed by a representative of the body and the host government. Such an agreement prescribes the conditions of locating the body within their jurisdiction, including the privileges and immunities provided to the body and the staff working in it. For most of the day-to-day actions, the body will follow the national laws of the host country and also international best practices, wherever required. This would also include suitable mechanisms for grievance redressal.

4.0 Specific social risks and their management

Managing social risks associated with the establishment of the Centre of Excellence will clearly depend on where the Centre would eventually be based. For the purposes of this assessment, a location in South India is presumed, but the extent of additional social safeguards required would clearly be different if the eventual location was in another part of the region.

Domestic legal remedies in India for safe workplace: The Constitution of India, which is a detailed written document, uphold both by the Legislative, Judiciary and Executive sets the basic limits which any institution set in India have to follow. The Constitution provides fundamental rights of the citizen including:

- Equality before law and equal protection of the law (Art. 14).
- No discrimination against any citizen on grounds of religion, race, caste, sex, place of birth (Art. 15).
- Equality of opportunity of all citizens in matters relating to employment to any office under the State (Art. 16).
- Freedom - 1a freedom of speech, 1b. Assemble without arms, 1c form association 1d freedom of movement 1e to reside or settle in any part of India. 1g. practice any profession or carry on any occupation (Art. 19).
- Right to Life and Personal Liberty. It includes right to clean and wholesome environment (Art. 21).
- Right against exploitation. Traffic in human and forced labour (Art. 23).
- Prohibition of employment of children in factories (Art. 24)

Women's Rights under Labour Laws: The Constitution of India mandates that women must be treated as equals and prohibits any discrimination against women in all areas, including education, vocational training, skill development and employment. Indian Constitution also protects the rights of women workers by ensuring that their health and safety is duly protected in the course of employment, particularly those of pregnant women and breast feeding mothers. The Constitution also safeguards the dignity of women workers and ensures that they are provided a safe working environment free of sexual harassment. In order to fulfil the Constitutional mandate all labour laws contain special provisions regarding the health and safety of women workers by regulating their working hours and by reducing the burden women have to carry. In order to ensure equality, the law also mandates that both men and women will be paid the same wages for the same or similar type of work.

For dealing with grievances arising through the establishment of the Centre of Excellence with eventual affected parties, such as those relating to employment, payment of wages, benefits to staff and protection of staff against harassment of any nature, the states involved and the Government of India have in-place well-tried mechanisms and legislation for addressing these grievances. Employment at the Centre would be covered by the existing framework of labour legislation in India which includes careful attention paid to the inclusion of vulnerable groups including women, differently-abled and socially disadvantaged groups. Key legislation in this regard includes:

- The Child Labour (Prohibition and Regulation) Act, 1986
- Equal Remuneration Act, 1976
- The Unorganised Workers' Social Security Act 2008
- The Payment of Wages (AMENDMENT) Act, 2005
- The Minimum Wages Act, 1948
- The Maternity Benefit Act, 1961
- The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013

They are applicable only to women and have been enacted to provide special protection and safety for the special needs of women. The responsibility of ensuring that the provisions of the Act are strictly followed and also that there is no discrimination between men and women in the sphere of recruitment, promotions and training lies with the employer. It is also the responsibility of the employer to maintain proper registers,

documents or muster rolls, etc. which can be scrutinized by the labour officer of the district. Any woman who faces discrimination in these aspects can file a complaint before the labour officer of her area.

Prohibition of caste-based discrimination and violence

Apart from fundamental rights enshrined in the Indian Constitution, which any institution or organisation set up in India bound to follow, the following legal measures provide provisions for stopping case-based discrimination and must be adhere to.

- SC/ST (Prevention of Atrocities) Act, 1989 prohibits atrocities and thus caste discrimination based on caste.
- Indian Civil Rights Act 1955: To ensure equal civil rights to all the citizens of India.

As a standard norm, the host country is responsible for providing building for housing the Centre. However, if a new construction is to be undertaken it would again be the responsibility of the host country and such an activity would be subject to existing legislation and monitoring mechanisms that would ensure the procurement of land (if outside the usual revenue land of the government), registration of any market transactions involved, the compensation of all affected persons, construction of the building, the transparency of all transactions undertaken and compliance with appropriate approval processes. Key legislation in this regard includes:

- Environmental Impact Assessment Notification, 2006
- Construction and Demolition Waste Management Rules, 2016

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