Oceans Partnerships Programme
Bay of Bengal (OPP-BOB)

Presentation 2 of 3:

Key Fisheries Issues in India and the Bay of Bengal Region

A contribution to the Global Think Tank (GloTT) meeting,
New York, 7-9 November 2016

Bay of Bengal Inter-Government Organisation (BOBP-IGO)
Chennai, India

Presentation Series for GloTT, New York, 7-9 November 2016

[1] Project Overview and Progress

[2] Key Fisheries Issues in India and the Bay of Bengal Region

[3] Developing the Business Case(s) – preliminary ideas

[1] Background

- Indian Ocean (IO) has valuable tuna stocks which are exploited by over 40 nations (CS and DWFN) in both coastal, EEZ and high seas areas;

- The fisheries include both large- and small-scale fishing operations, often on shared highly migratory and trans-boundary stocks;

- There are growing concerns over the management of the tuna fisheries, although many continue to show good levels of performance;

- The OPP-BOB (from February 2016) aims to better understand the key issues and identify and compare future options for development and management (‘bankable’ investments)

[2] Objectives of the Presentation

- Based on the early work of the OPP-BOB, to highlight some of the **key issues** concerning IO tuna fisheries;

- To identify and examine a preliminary set of possible future **innovations** for fisheries development and management;

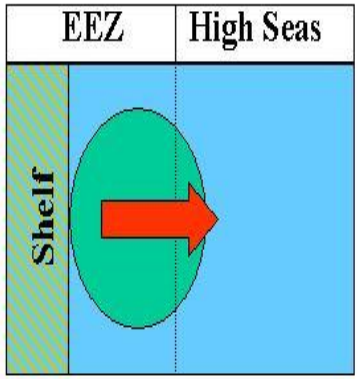
- To consider the position (role) of **small-scale fishing** in the IO tuna fishery system;

[3] Key Definitions

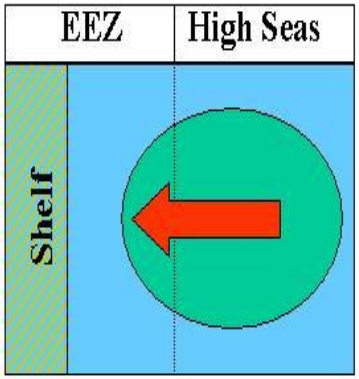
"Shared high-migratory and trans-boundary tuna stock and associated fisheries"

A stock of fish which undertakes long-distance migrations, and can be found, often on a seasonal basis, within EEZ and also in high seas areas, where they are fished by coastal states (CS) and distant water fishing nations (DWFN).

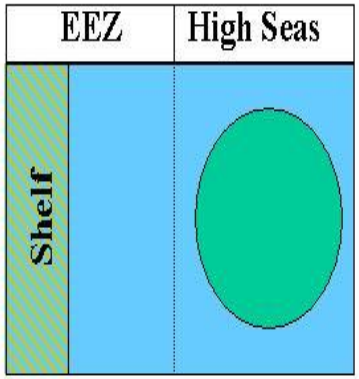
CS have jurisdiction over fishing activities in their own EEZ, and can grant access to DWFN under agreement, whereas in the high seas, no one CS has jurisdiction, but interested CS and DWFN may cooperate together under a Regional Fisheries Management Organisation (RFMO).



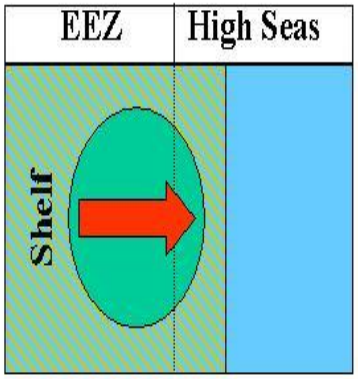
Pelagic stock
"straddling out"



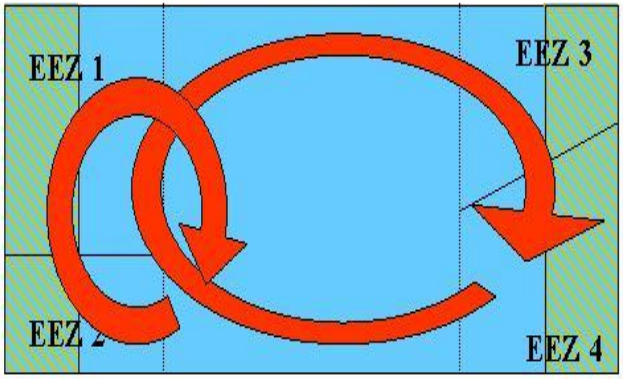
Pelagic stock
"straddling in"



Purely high seas stock



Demersal stock
"straddling out"



Highly migratory stocks

Types of high seas stocks

[3] Key Definitions (continued)

"Innovations"

To make changes in something established, especially by introducing new methods (tools), ideas, or products.

Therefore, if the current management arrangements by which IO tuna fish stocks are exploited need to be changed (re: concerns over exploitation levels):

- What are the important entry points?
- And what are the possible innovations (options)?

[4] Current characterisation and key themes (x4)

- Under OPP-BOB (Phase 1) a detailed multi-disciplinary **characterisation exercise** for IO tuna is being undertaken;

- A fisheries **profiling framework** was used to describe the main features in detail (as shown below)

- Some of the **key results** are also highlighted below in a series of diagrams

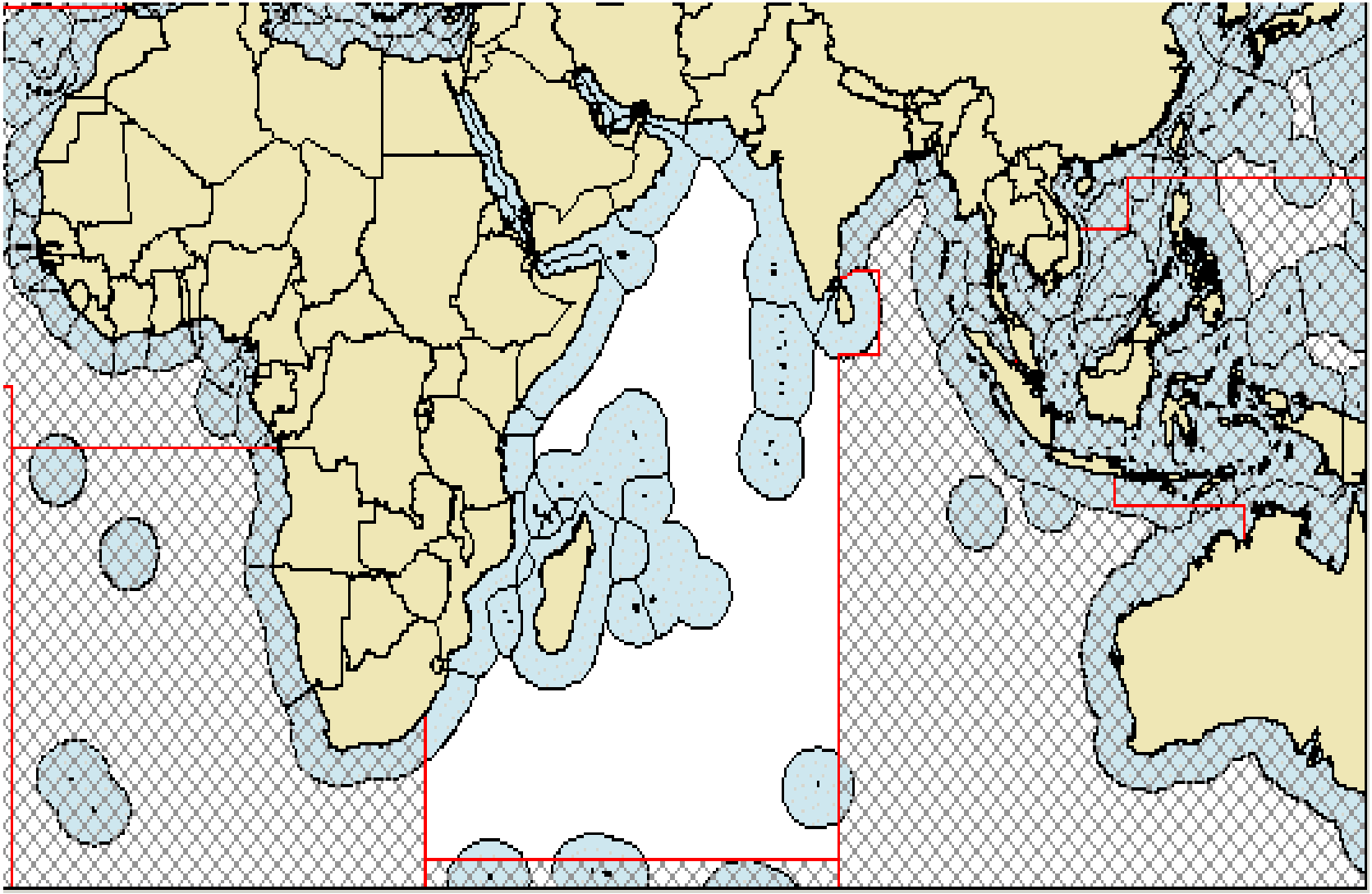
- A series of national and regional **workshops** are in progress (*e.g.* Chennai, Cochin, Visakhapatnam, Negombo)

- A set of review reports on key species – **'Tuna synopsis'**

- **Policy analysis and institutional analysis** has been undertaken to examine issues at local, national and regional levels;

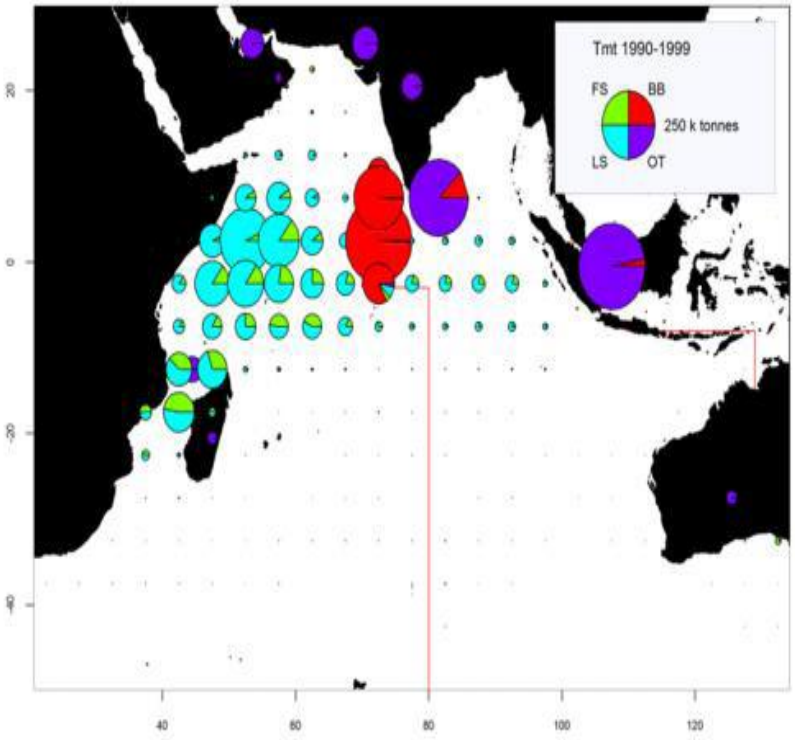
Table 1. Fisheries Sector – Profiling Framework		
Environment	**Environment and Major fish stocks**	• What are the major aquatic environments and their characteristics? • Identify the major fish stocks, distribution and status
Economy	**Production and landings**	• What are the levels of annual and seasonal production by fishery? • What are the overall production trends by key species and fleets?
	Fishing fleets and fishing activity	• Identify the fishing vessel and gear characteristics by fleet • Has technology changed over time?
	Post-harvest, trade and markets	• How is the catch utilised? What products? • What are the main markets, trends, exports and imports?
	Economic valuation	• What is the economic value of the fishery (potential and actual)? • What is the contribution to the economy? (local and national)
Social	**People and social aspects**	• What is the level of employment in the sector? • What is the structure and the activities of communities?
Institutions	**Institutions and organisations**	• What are the major institutions and organisations? • What is their role and inter-relationships?
	Policy and law	• Identify the key fisheries policy and associated legal framework; • What are the key objectives and implementation mechanisms?
	Fisheries management	• Identify and describe the fisheries management system; • What are the key objectives, management performance and the factors affecting this?
Trends	**Global Trends, changes and issues**	• What are the key global trends relevant to the fisheries sector? • What are the major factors of change? • Are there specific regional issues affecting the fisheries?

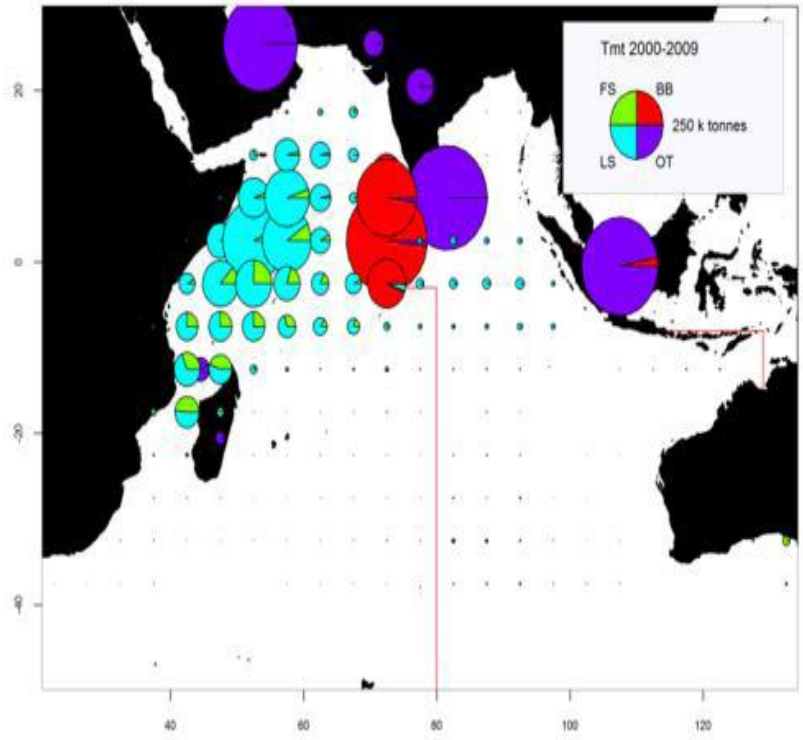
Environment – the Indian Ocean (IO): the distribution of EEZ and high seas areas



Environment – Major Fish stocks:

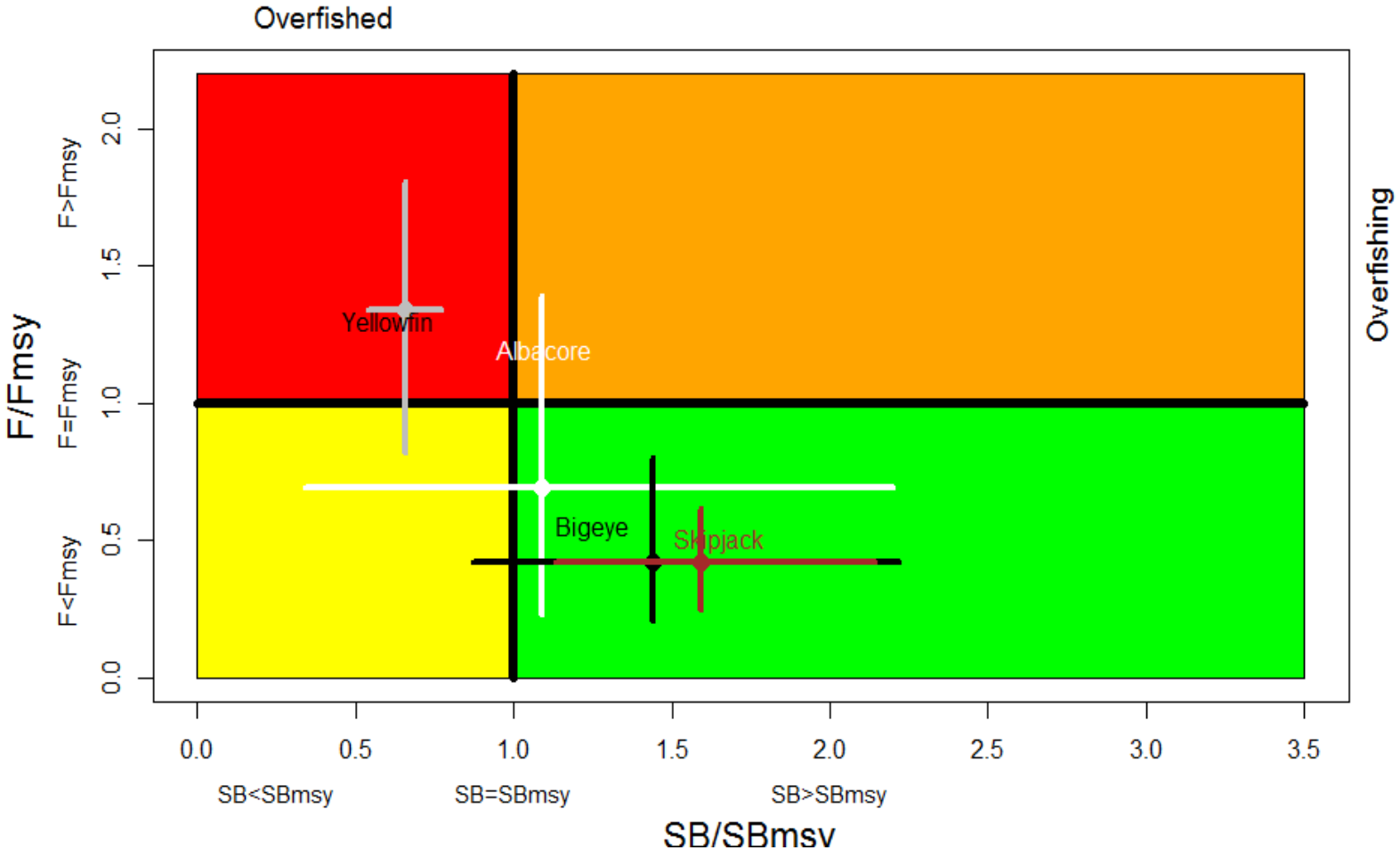
Skipjack Catches (2000-2009)(Source: IOTC) showing concentration mainly in Western Indian Ocean





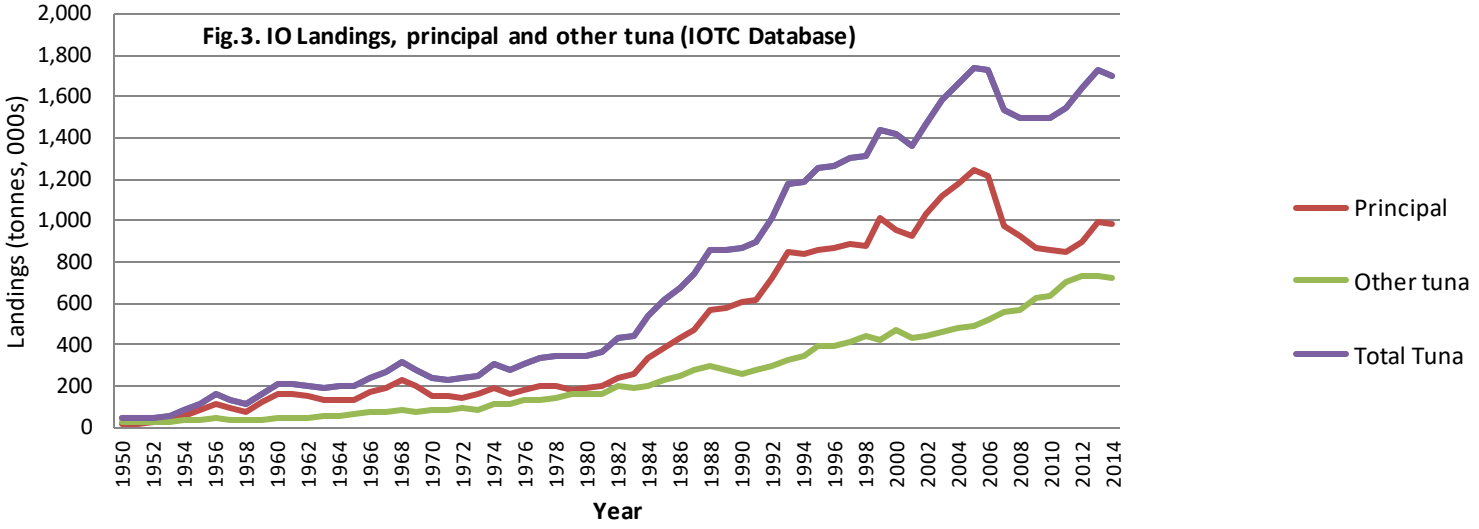
Environment – Stock Assessment:

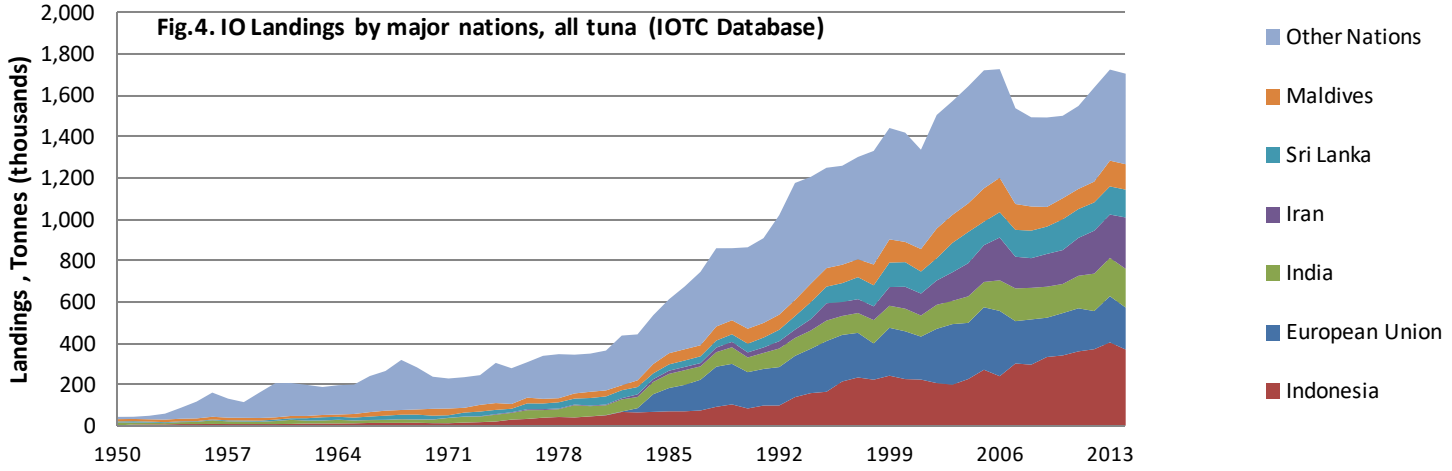
Combined Kobe Plot for Principal IO tunas (Source: IOTC) which provides the current basis for guidance on fisheries management by the IOTC



Economy – Landings:

Principal tuna and other tuna tonnage landings are similar; BOB countries are all important fishing nations





Economy – Fleets:

Industrial and artisanal fleets have both increased in recent years

Fig. 12. Numbers of industrial vessels (LOA, m) fishing in Indian Ocean since 1952 (after Moreno & Herrera, 2013) [Between 15-24 m LOA fishing outside EEZ or larger than 24 m anywhere in IO]

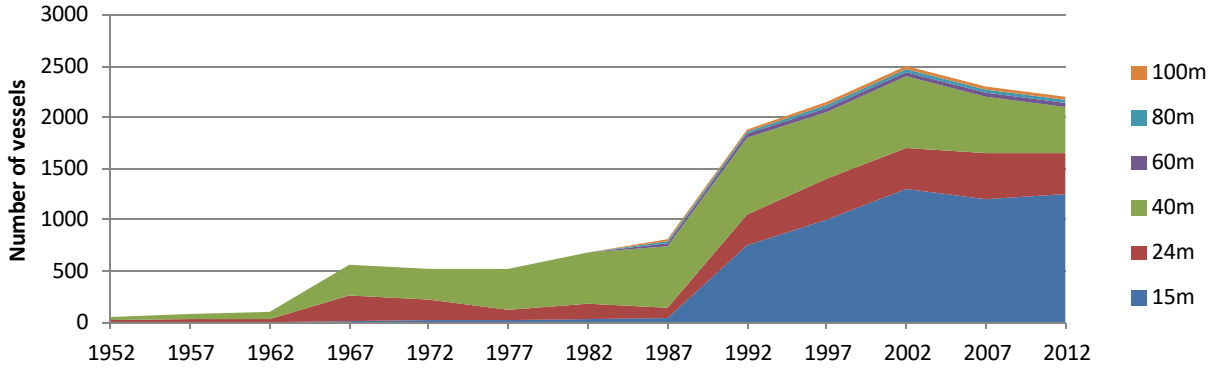


Table 5. Estimates of numbers of artisanal vessels as per IOTC definition and their catches

Country	No. boats	Catch(tonnes)	Main gears
Indonesia	116,861	322,145	PS, GN, LN
Iran	5,209	155,065	GN
India	199,244	150,149	GN, LN
Pakistan	3,126	58,060	GN
Yemen	16,890	39,313	LN
Sri Lanka	42,792	36,101	GN, LN, LL
Maldives	64	32,065	LN
Malaysia	8,178	26,509	PS
Oman	19,943	17,121	GN, LN
Thailand	925	15,064	PS
Sub-Total (Top 10)	413,232 (71%)	851,592 (93%)	
Others	170,836		
Total	584,068	915,112	

Source: Adapted from Moreno & Herrera (2013)
Note: Data collected between 2003-2012 (using a wide range of sources) (some boat data may not be specific to tuna fisheries, and may represent the national fleet engaged in small-scale fishing)
Key: PS (Purse seine), GN (Gillnet), LN (Line), LL (Longline)

Economy – Trade:

IO tuna exports are an important part of international fish trade

Fig. 17. Exports, Fresh and Frozen Tuna (Top 10 countries) (FAO Globefish, 2014)

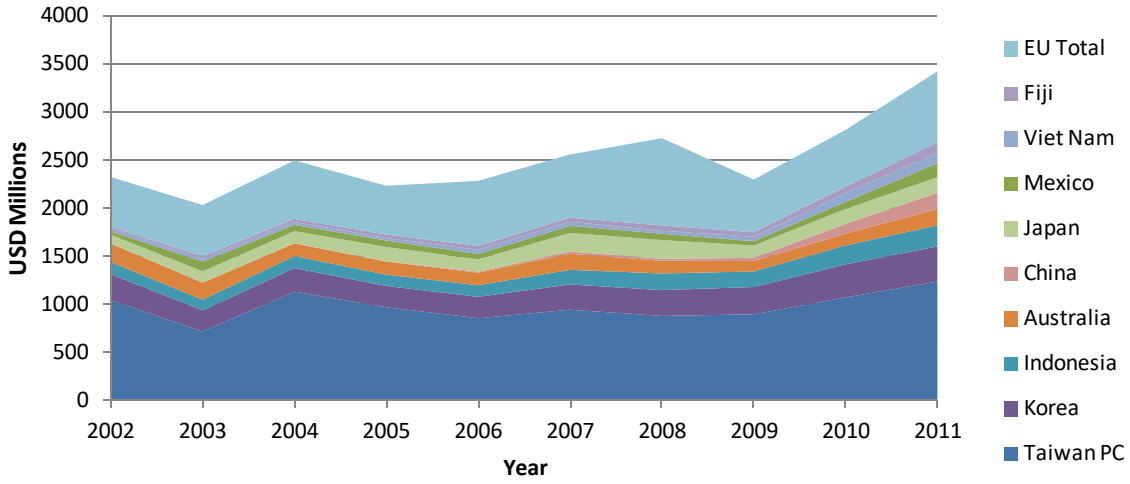
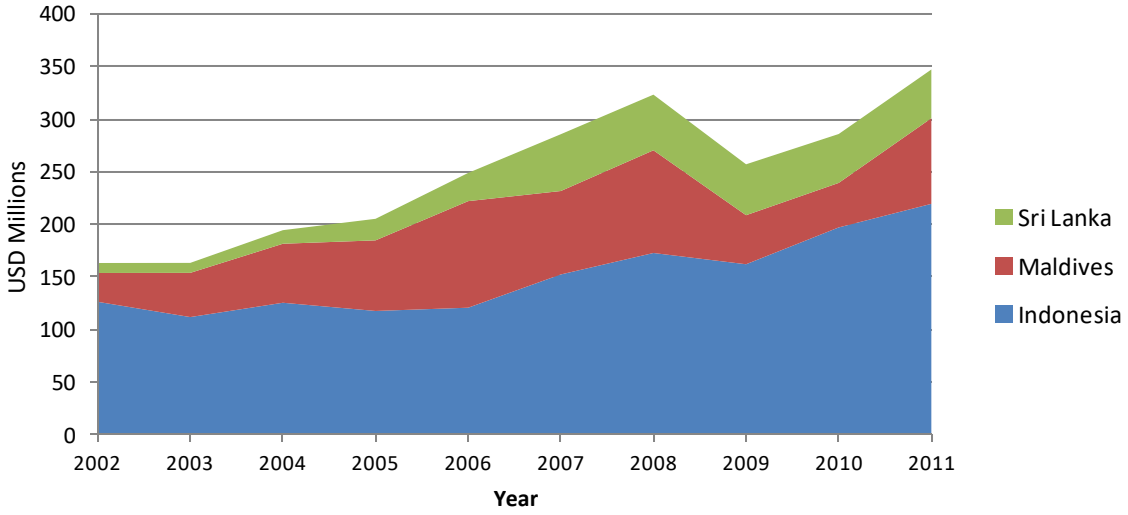
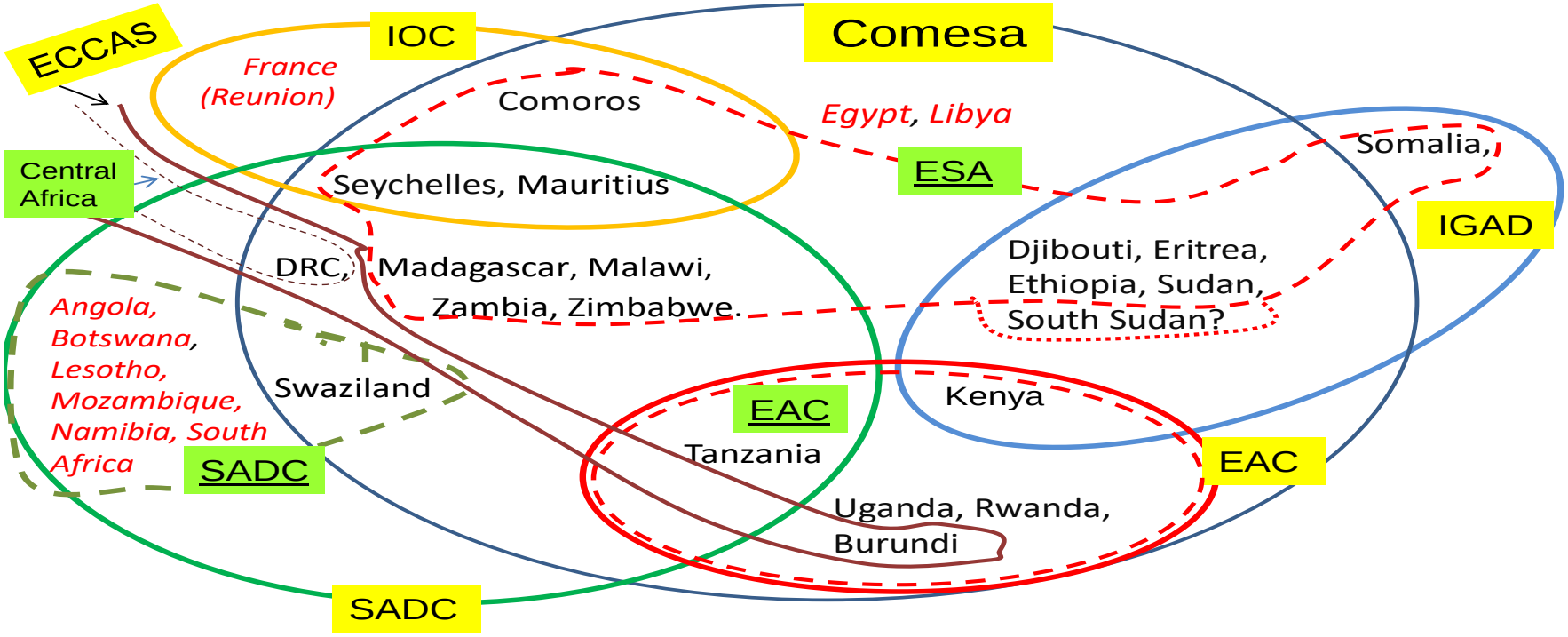


Fig. 18. Exports, Fresh and Frozen Tuna (Major IO countries) (FAO Globefish, 2014)



Institutional Arrangements

Besides the RFMO (the IOTC) – IO countries are also members of other organisations - e.g. Africa and Eastern Indian Ocean – membership of RECs and EPAs (Source: Manning, 2012)



Cross-cutting issues – More questions than answers?

- The establishment of **a baseline** of information for tuna fisheries in the IO is important and useful (above);

- It can also be distracting – given the **huge volume** of detailed information involved ('drowning in the detail....')

- Is it possible to identify a set of cross-cutting issues (to allow a **more strategic** view of the situation)? How can economics, in particular, inform the analysis?

- Is this a useful basis for developing **innovations (and tools)** for improved governance of fisheries (both large- and small-scale fishing)?

Some initial cross-cutting Issues

[A] Scale, structure and diversity:

- IO tuna fisheries operate across **vast distances**; along with international trade in tuna products (and services);

- Countries involved are varied and have different levels of **interest** in the IO tuna fisheries;

- The **nature** of the fisheries (fleets, gears, strategies, organisation, investment) often exploiting the same tuna stocks also varies between countries and regions;

[A] Scale, structure and diversity: (cont.)

- For some countries **large-scale fishing** is more important (e.g. Seychelles), in others, **small-scale fishing** is currently more important (e.g. India and Sri Lanka); in others there is a mixture (e.g. Indonesia)

- The relationship between **CS and DWFN fleets** varies by sub-region within the IO (e.g. Western and Eastern);

- Some IO fishing countries are **active members** of the IOTC, while others are not (and probably more active in other organisations); cooperation and alignment between IO countries varies with geo-political contours;

Some initial cross-cutting Issues

[B] Information quality

- There are serious **concerns** over information quality and availability for IO tuna fisheries (e.g. the IOTC depends on its member countries to supply this information and some are more committed and able than others);

- Related to this, the **MCS** of IO tuna fisheries is also challenging – given the scale and diversity involved, and the institutional capacity of countries to implement MCS processes;

- Therefore, the **reliability** of fisheries analysis and the basis for policy and management decision-making has to be questioned;

Some initial cross-cutting Issues

[C] Sequencing of fisheries development

- The **order** in which fisheries 'interventions' and 'investments' are made is critical to the outcome of fisheries development;

- There is only limited **comparative analysis** of national fisheries policy in the IO, and in the context of the IOTC;

- Fisheries policy **objectives** often vary by country (with potential for conflict);

- The quality of **governance** arrangements, especially fisheries management, also varies;

- In many countries, it appears that **ambitious** development schemes for fleets, infrastructure and onshore fish export trade facilities have been prioritised, **BUT** not always underpinned by quality governance arrangements, or adequate value-chains; (the wrong sequence?)

Sequencing of Fisheries Development Interventions

Table 1. *The Freetown Framework*: 10-Point Score Card for the Assessment of Fisheries Development Potential	
1.	Has the sustainable economic value of the fish stocks been determined?
2.	Is the national vision and strategy for the sector appropriate and agreed?
3.	Is there a well-defined fisheries policy?
4.	Does the fisheries law provide an enabling framework?
5.	Is there a high degree of policy coherence?
6.	What is status of the fisheries management systems?
7.	Is there a well-defined work-plan for policy implementation?
8.	Is there sufficient institutional capacity for implementation?
9.	Is there appropriate finance and investment available?
10.	Is there support in place from national, regional and international organisations?

http://www.scirp.org/Journal/PaperInformation.aspx?PaperID=67474

Some initial cross-cutting Issues

[4] Institutional capacity (and capacity–building)

- Adequate institutional capacity (human, skills, finance) is a **pre-requisite** for effective fisheries development and management (fundamental building blocks);

- This applies to both the **public and private sector**;

- Institutional capacity **varies greatly** across the IO countries; and impacts on their ability to direct and operate their fisheries successfully;

- It also affects the **ability to engage** and cooperate with other IO countries through RFMO, RFB and other regional fora; (RFMO also face capacity issues – see next slide on the status of the IOTC)

- Some countries have **effective strategies** for capacity-building, others do not;

IOTC – FOLLOW-UP ON PERFORMANCE REVIEW (2009) – CURRENT STATUS

Recommendation Areas, actions required within	Completed	Partially completed	Pending
IOTC Agreement Reform	0	0	1
Legal analysis	0	0	2
Conservation , Management	8	31	5
Compliance, Enforcement	2	10	4
Decision-making, Dispute settlement	0	1	2
International cooperation	1	9	2
Financial , admin issues	1	0	3
Total	12 (15 %)	51 (62 %)	19 (23 %)
Source: Data source: IOTC-PRIOTC02 (2016)			

[5] Future Innovation Areas (x4)

[5.1] A policy focus on the wealth of the fish stocks

- To date, the focus of IO fisheries policy (regional and national) has been on **landed production weight (tonnes**); and latterly fish stock size;

- Re-orienting towards a focus on potential wealth reveals what is really **"at stake"** for all stakeholders at all levels;

- Also enables a **'mainstreaming'** of the role of fisheries in national development and economy, to garner greater political support;

[5.1] A policy focus on the wealth of fish stocks (cont.)

- To provide a **new focus and incentive** for discussions between regional actors (CS, DWFNs) on shared stock management and the allocation of fishing opportunities;

- To provide a basis for the development of an **economic approach** to fisheries management – as a means of realising economic, social and environmental outcomes, on a sustainable basis;

- To **move away** from top-down, command-and-control fisheries management systems (input-based with a focus on catch maximisation) – which have not proved successful globally;

Recent empirical findings

- **Estimated potential sustainable annual economic value (IO principal and neritic tuna stocks) = USD 2.06 billion.**

- **The capitalised asset value of the fish stocks capable of generating this annual 'income', @ 8% as a reasonable return for example, is USD 26 billion.**

- Value of current economic activity:

  India GDP (USD 2, 067 billion), Tamil Nadu (USD 167 billion), Kerala (USD 77 billion), Sri Lanka (67 billion), Maldives (2.3 billion) (Government of India, 2015, World Bank, 2014).

Recent empirical findings (cont.)

- The **actual (current) economic value** of the tuna stocks in the IO is not known;
- It is unlikely any of the fisheries involved is generating economic 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).

[5.2] A sequenced process of fisheries development and management

- To ensure that a **critical sequence** of interventions and investments are implemented, learning from past experiences;

- An **early focus** on a clear future vision and policy, and strategy, underpinned by a legal framework, is essential;

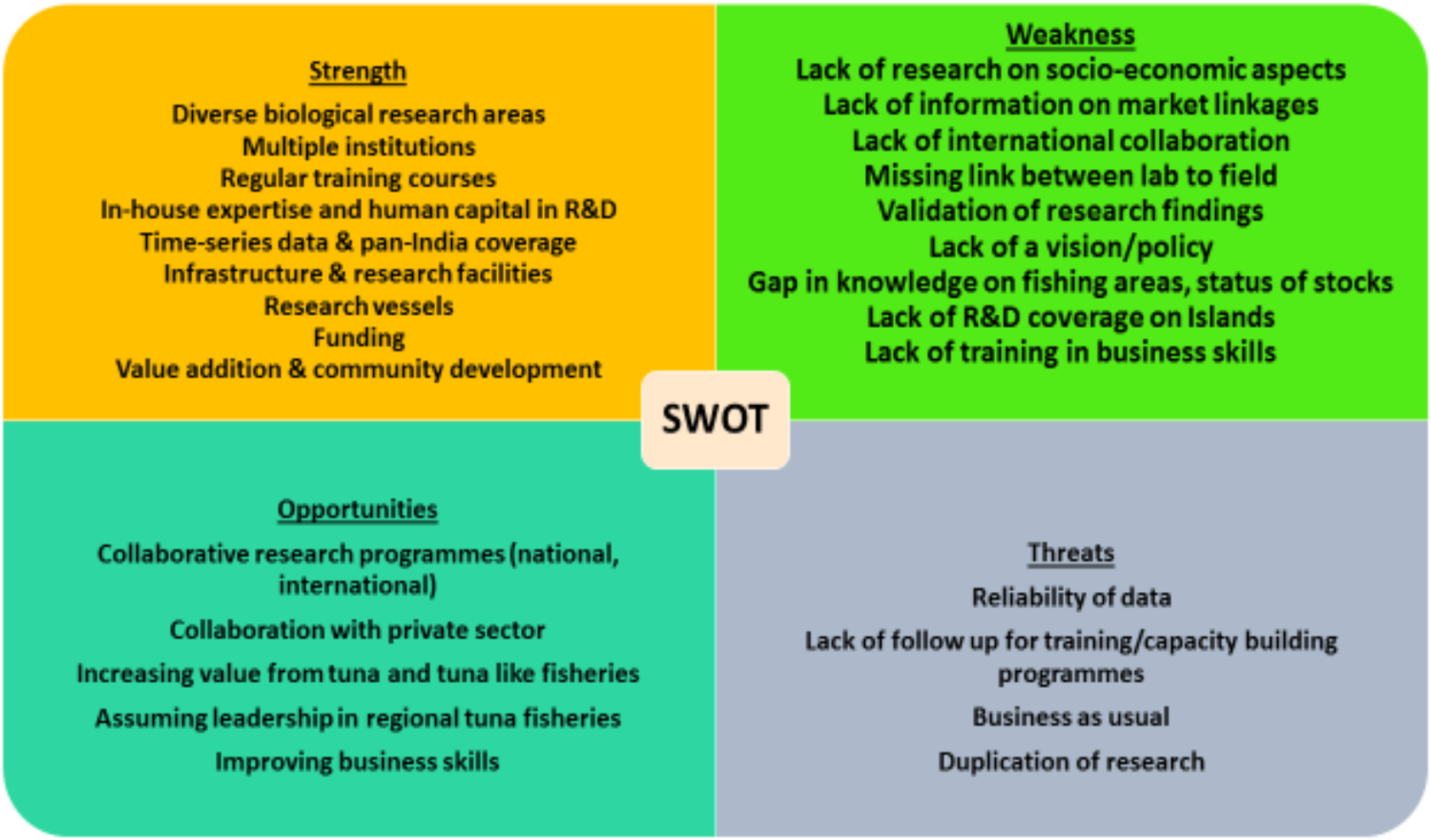
- Thereafter, design and implementation of **fisheries management systems**, will be essential;

- Key investments in **human capacity building** must also underpin all of the above;

- Appropriate definition of **roles and responsibilities** between the public and private sector, will provide a basis to identify and implement fisheries management plans, and investment strategies relating to enterprise development and infrastructure (along the value chain);

Recent workshop findings:

Views on the sector from major fisheries sector government research and development institutions in India (2016)



[3] Use-rights defined for a range of actors within an integrated fisheries management system

- The challenge of **managing shared stocks**, which are also highly migratory, cannot be underestimated, especially in the context of the IO, with such a large diversity of actors;

- The determination of annual TAC for all major tuna stocks and an agreement on **catch allocations** by fishing nation will be an important step forward in the future;

- Furthermore, at a national level, the **design of fisheries management systems**, based on the allocation of use-rights to eligible stakeholders (fishers and others) should be considered;

[3] Use-rights defined for a range of actors within an integrated fisheries management system (cont.)

- The option of including a range of stakeholders /actors (large- and small-scale fishing, firms and communities) within one **integrated system** could also be evaluated – more so, if they are part of the same fishery;

- The possibility of developing **pilot fisheries management plans (FMP)** in key locations – as an entry-point (testing, learning, demonstration on identified FMU)

Recent empirical findings:

Overview

Fishers in south India recognise the importance of fisheries management, but there is limited experience of involvement in effective fisheries management systems – how would a rights-based system work in this context?

For example, in Tamil Nadu State, the government's Annual Budget for the fisheries sector has small allocation for fisheries management (<10% total); **welfare support** is the top priority.

Long-liners and trawlers in south India

Tamil Nadu – Fishing vessels

[4] Fish trade incentives for improved management and value chain development

- Despite a large international market for tuna, BOB countries have a **limited** involvement;

- Recent fieldwork reveals a **weak value-chain** in India (next slides below), with low prices overall, significant wastage of raw material and limited private sector capacity to up-grade or up-scale their activities, despite government support;

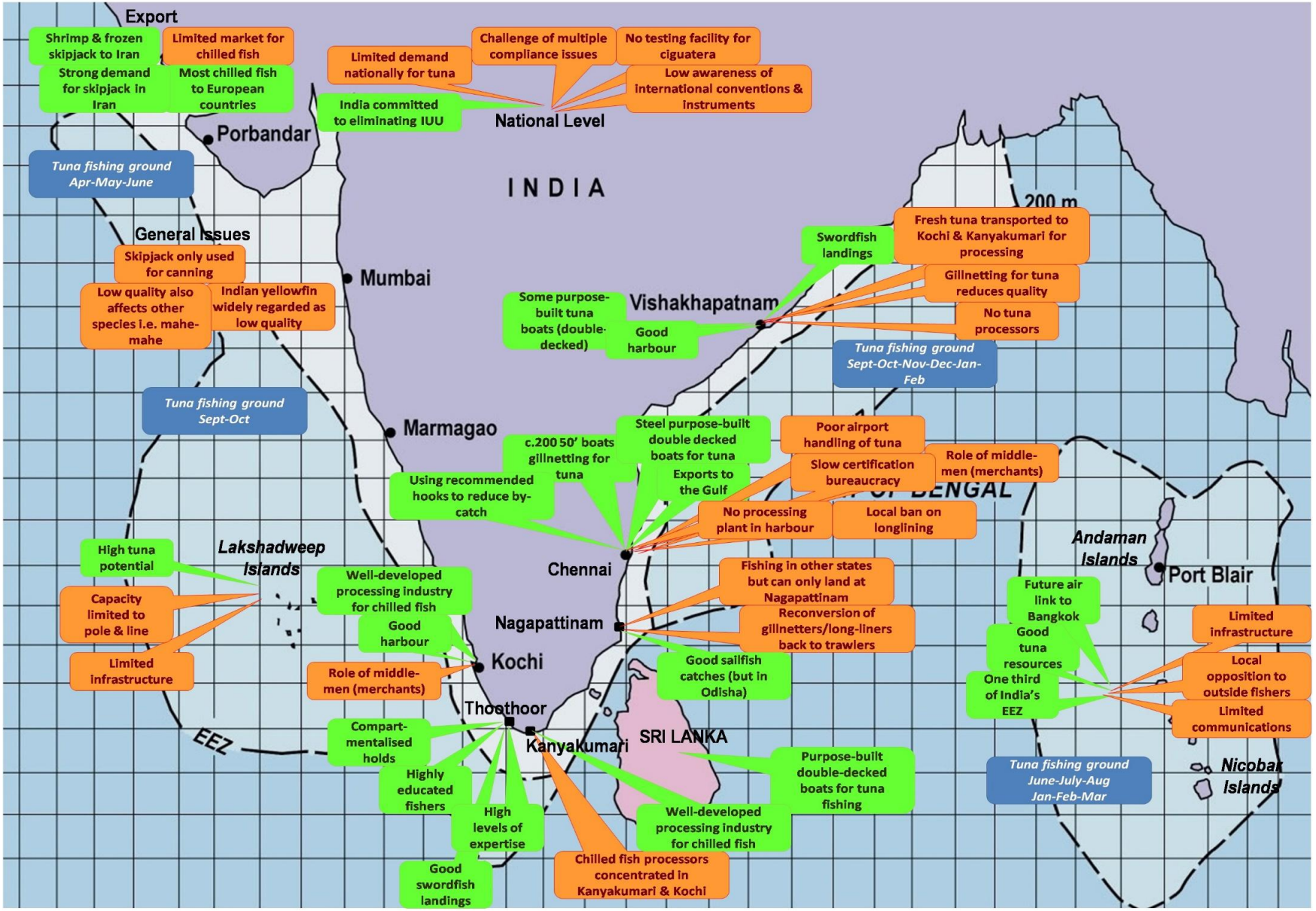
- The possibilities for **improving** the structure and quality of the value-chain need to be explored further; along with current constraints;

[4] Fish trade incentives for improved management and value chain development (cont.)

- The opportunities for improved fish trade (and prices), through better **access** to national, regional and international markets, also needs to be explored, along with **linkages** to fisheries management systems (through certification and labelling schemes);

- Government and the private sector each has a **role** in improved value chain development; and the design and agreement of a sequenced process is essential;

Scoping Consultation on tuna fisheries and industry – Key Issues from stakeholder consultations



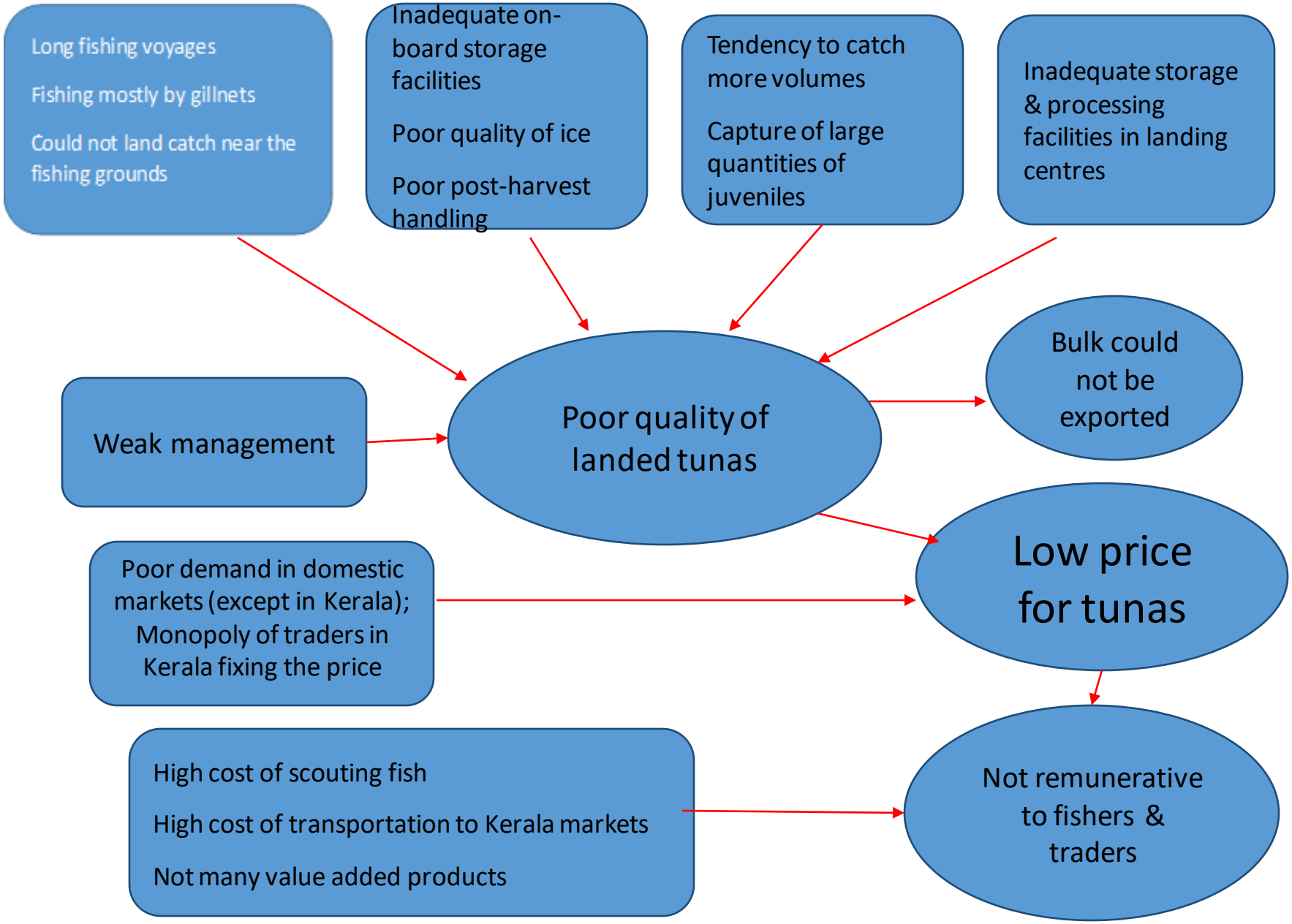
South India – Onshore – Large pelagics trade

South India – Onshore – Neritic tuna trade

Scoping Consultations with Staeholders – SWOT summary

Strengths	Weaknesses
• Abundant tuna stocks • Skilled fishers (in catching) • Availability of investment capital • Government support for deep-sea fishing • Strong fish processing industry (but not widely distributed) • Strong R & D structures	• Poor quality of landed fish • Limitations in infrastructure in landing centres • Poor fish handling • Poor connection between fishers, traders and processors • Lack of clear development policy • Marketing system not working well • Weak regional cooperation • Poor awareness of rules and regulations
Opportunities	**Threats**
• Export opportunities • Developing partnership of fishers-traders-processors • Potential government support and investment • Making use of government training network • Learning from international best practices • Working with IOTC	• Failure of effective tuna management in the Indian Ocean • Overexploitation by several countries in the region • Increasingly strong trade regulations • Competition from other countries

Scoping Workshops – Key Issues (Fishing and Trade) described by stakeholders



Thank you