



Regional Dialogue on Management of Highly Migratory Fish Species in the Bay of Bengal

23 November 2017; Kochi, India

Tuna Fishery Status and Future Management Plans for Indian Ocean

Bay of Bengal Programme
Inter-Governmental Organisation



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**Presentation made for the Regional Dialogue on “Management of
Highly Migratory Fish Species in the Bay of Bengal”
23 November 2017; Kochi, Kerala, India**



**Bay of Bengal Programme
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Indian Ocean (IO): 3rd largest & most complex ocean in the World ...

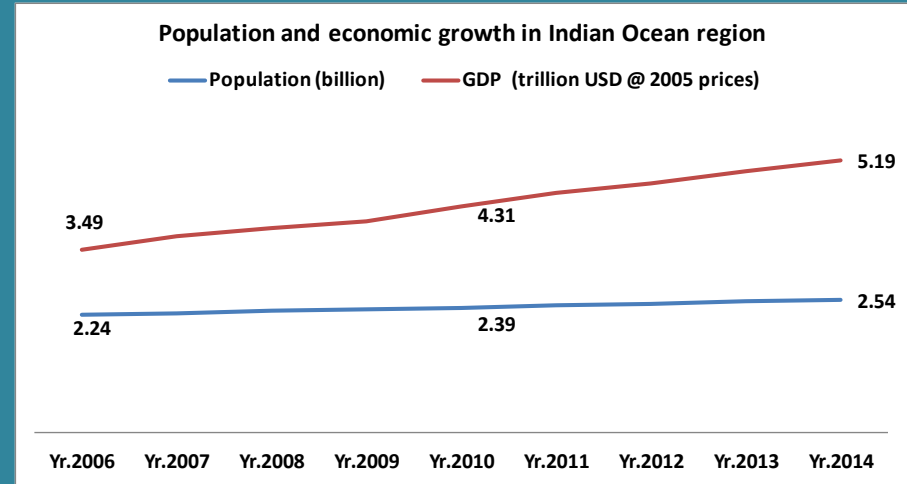


- **Area: 73 million sq. km**
- **Bounded by Asia on the north, Africa on the west, Australia on the east, and Southern Ocean/Antarctica in the south.**
- **Comprises 16 marginal seas, gulfs, bays and straits, including biodiversity hotspots like Madagascar and the Gulf of Mannar.**

IO is also a confluence of cultures

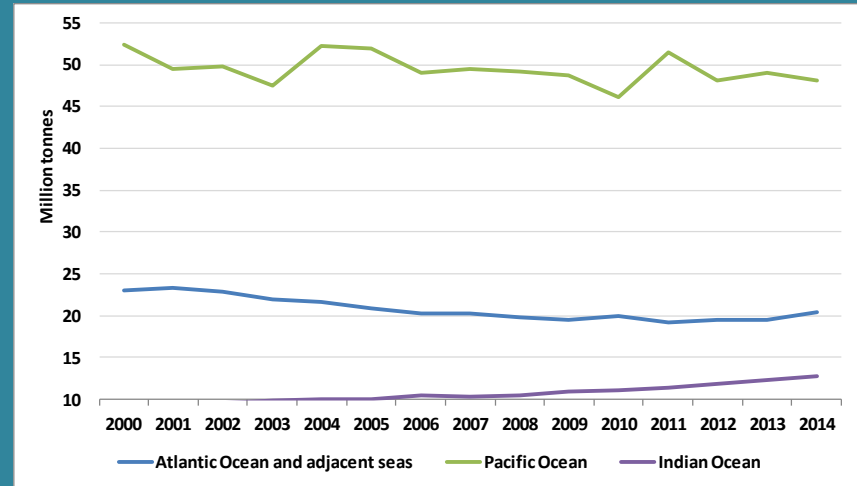
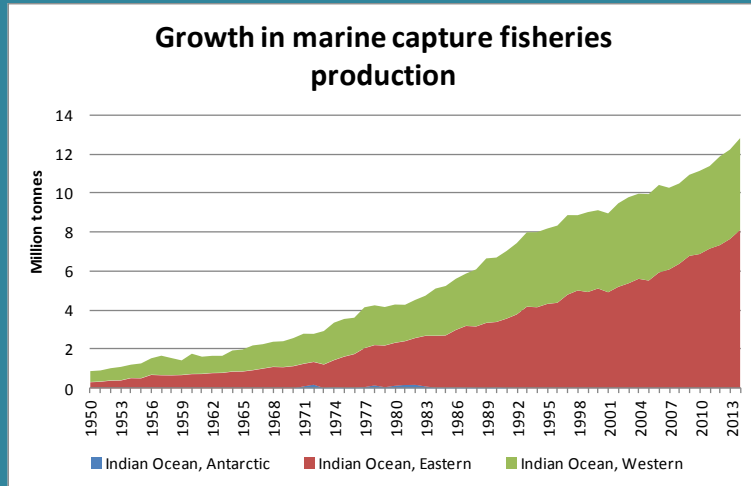
- About 46 countries, including coastal states, Islands and overseas territories.
- 2.54 billion people.
- Economy: 5 trillion USD (in 2014 @ 2005 prices) – about 1/3rd of US economy.

Source: World Development Indicator database, World Bank



Primary sector (agriculture, fisheries, etc.) employs about 40% people.

IO- Hotspot of marine fisheries as production in other Oceans is flattening.....



Production in other Oceans, though much higher, is flattening!
IO contributes about 15% of global capture fisheries production.
Production increased from 9 million tonnes in 2000 to 12.8 million tonnes in 2014.
Heightened activity in eastern part of the Ocean.

Marine capture fisheries is one of the major primary activities in the region...

- Asia employs about 22 million fishers (excluding China), most of whom operate in the IO.
- India (4 million) and Indonesia (3 million) have largest fisher population depending on the IO.
- The fishery is diverse. FAOSTAT reports 435 different fisheries (including seaweeds).
- Tuna (including tuna-like) fishery **THE** most important from production angle.

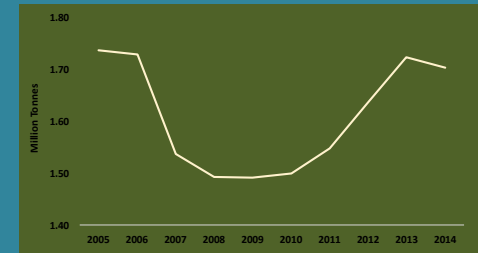
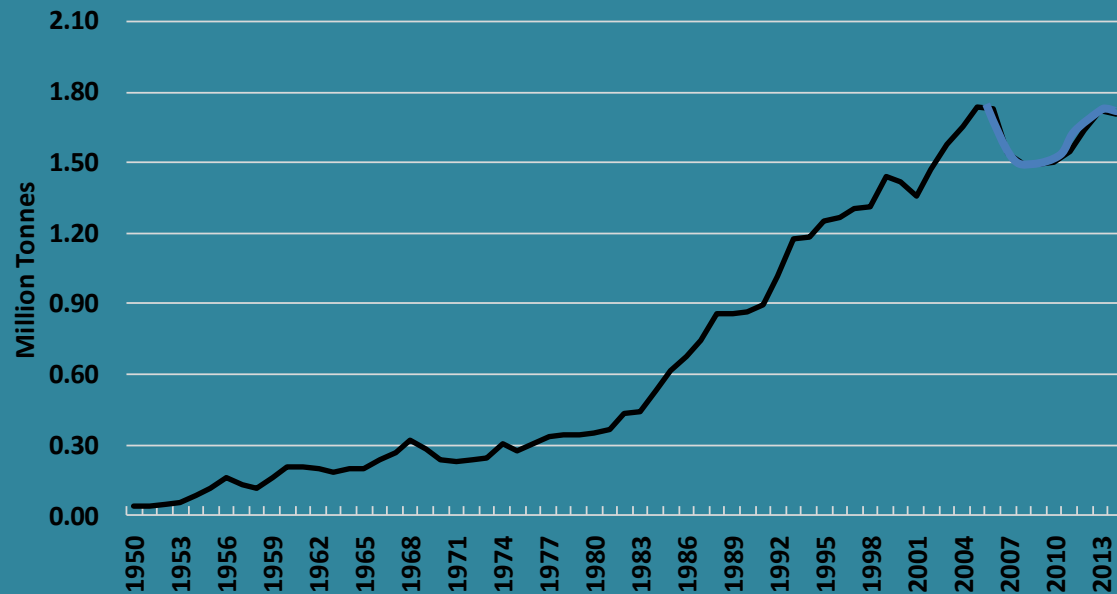
IO: Top 10 fisheries in terms of total production (2000-14)

Rank	Species	Share (%)
1	Marine fishes nei	50.75
2	Skipjack tuna	15.92
3	Indian oil sardine	2.15
4	Yellowfin tuna	1.95
5	Croakers, drums nei	1.81
6	Natantian decapods nei	1.46
7	Hilsa shad	1.15
8	Clupeoids nei	1.13
9	Bombay-duck	1.02
10	Giant tiger prawn	0.92
	Total	78.26

Tuna fisheries in IO

- The estimated *potential sustainable economic value of tuna stocks in the IO* is **USD 2.06 billion**.
- Capitalised asset value of the fish stocks capable of generating this annual 'income', @ 8% as a reasonable long-term return, for example, is **USD 26 billion**.
- Principal market species are **Yellowfin, Bigeye, Skipjack , Albacore** and **Southern Bluefin tuna**. Other tuna and tuna-like fishes include: **Neritic tunas, Billfishes**.

IO: Production of tuna (and tuna like species)



IO: Top 10 tuna harvesting countries (2005-14)

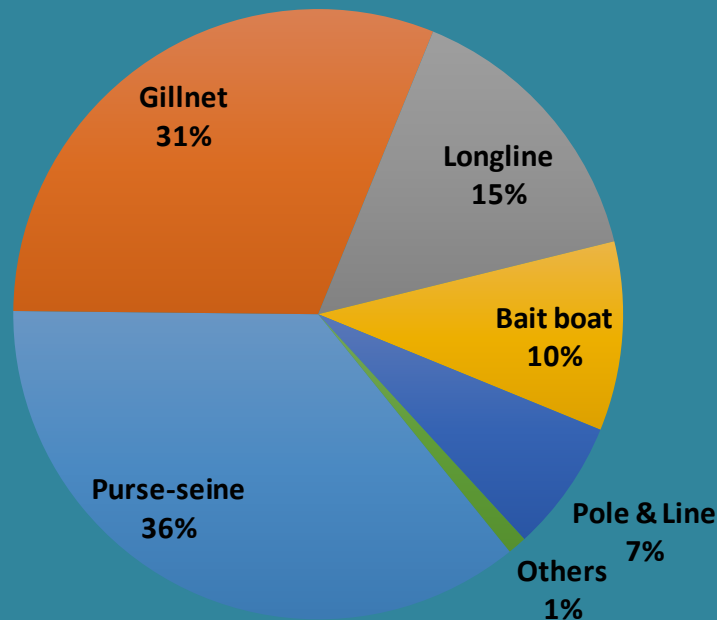
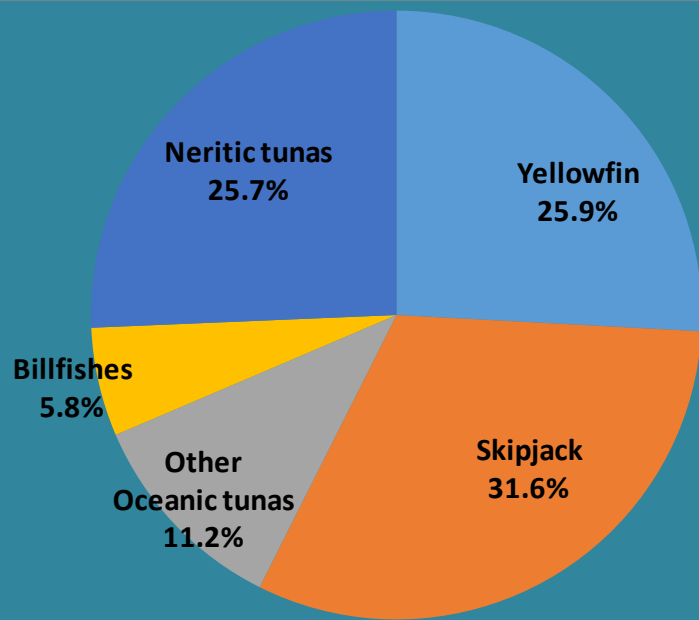
Country	Average catch (tonnes) during 2005-14	%
Indonesia	266,048	19.7
Iran	157,471	11.7
Spain	138,945	10.3
Maldives	121,145	9.0
Sri Lanka	117,984	8.7
India	100,243	7.4
France	79,276	5.9
Seychelles	72,925	5.4
Taiwan, China	65,442	4.8
Pakistan	36,971	2.7

47 countries

DWFN catch 20%

Source: IOTC

IO: Species & gear-wise tuna catch during 2005-2014 in quantity terms (%)



Source: IOTC

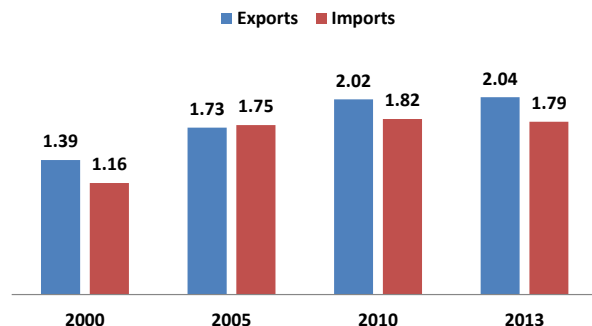
IO: Tuna stock status in 2015

Species	Overfished?				Recommendations
	Subject to	Not subject to	Yes	No	
Albacore, Bigeye, Skipjack, Swordfish		●		●	Immediate management measure not required. Monitoring essential.
Kawakawa		●		●	For sustainability, catch should be reduced by 20%.
Black marlin, Sailfish	●			●	Precautionary measures to reduce catch.
Longtail	●			●	For sustainability, catch to be reduced by 30%.
Blue marlin		●	●		Precautionary measures to reduce catch.
Yellowfin, Striped marlin	●		●		Catch should be reduced by 20 to 30%.

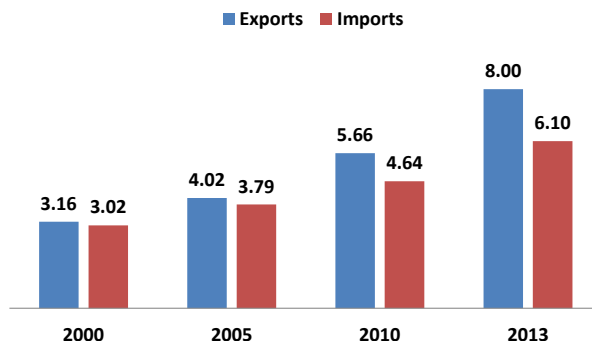
Source: IOTC

IO: Tuna trade is growing from the region...

Tuna trade from IOTC member-countries (in million tonnes)



Tuna trade from IOTC member-countries (in billion USD)



#	Major Tuna products	Total Export: 2000-13 (Billion USD)
1	Tunas prepared or preserved, not minced, in airtight containers.	17.95
2	Tunas prepared or preserved, not minced, nei.	11.73
3	Skipjack tuna, frozen.	6.51
4	Skipjack prepared or preserved, not minced, nei.	1.78
5	Yellowfin tuna, frozen, nei.	8.16
#	Major Tuna trading countries	Total trade value: 2000-13 (Billion USD)
1	Thailand	34.56 (26.6%)
2	Japan	28.04 (21.6%)
3	Taiwan, China	15.79 (12.1%)
4	France	10.43 (8.0%)
5	China	2.84 (2.2%)

IOTC member-countries exported 2.04 million tonnes of tuna products valued at USD 8 billion in 2013. The total share of IOTC in global tuna trade is 10-11%.

The tuna governance process in the IO region...

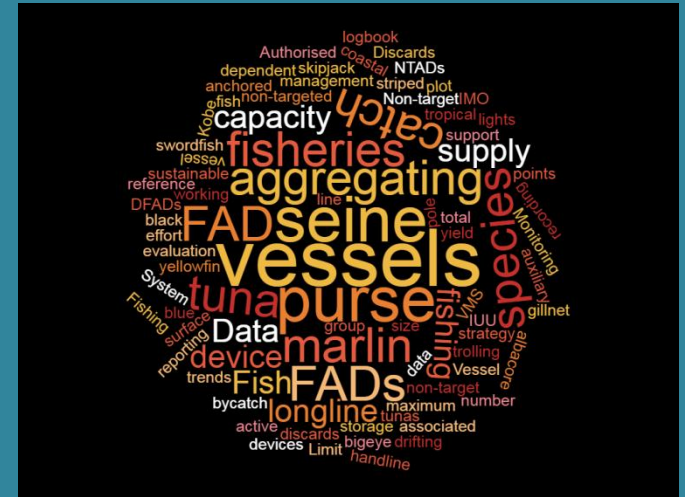
- **IOTC is the regional tuna governance body with mandate to:**
 - keep under review the condition and trend of the stocks;
 - encourage, recommend, and coordinate research and development activities;
 - adopt – based on scientific evidences – Conservation and Management Measures (CMM); and
 - keep under review the economic and social aspects of fisheries ... in particular, the interests of developing coastal States.

IOTC: Challenges in the regional governance process...

Objective	Challenge
Information base	Many member-countries do not have necessary mechanisms to collect and report data. Especially, sustained data collection process is missing.
Research & Development	In addition to an inadequate information base, national and regional research agenda are often not aligned.
Sustainable harvesting practices	The cumulative effect of the above two has resulted in design and implementation challenges.
Interests of developing countries	The cumulating effect of the above three in the long-run can hurt the interests of the developing countries who are now encouraging tuna fishery.

10: Efforts in harvest rule and effort control

- So far the major thrust is on information, reporting and creating a record of fishing vessels;
- In 2015, IOTC adopted Interim Target and Limit Reference Points (TRPs and LRPs) based on MSY;
- Time-to-time, measures have been adopted for vulnerable species such as sharks; and
- IOTC also discourages discards and emphasises on full utilization.



The 'Word Cloud' of keywords in IOTC Resolutions

IOTC: Allocation criterion

- Allocation/setting quota remains a major unsettled issue in IOTC.
- The process involves agreeing on a set of guiding principles, which can then be used for designing quotas.
- IOTC set up a Technical Committee on Allocation Criterion – which held its third meeting in February 2016.

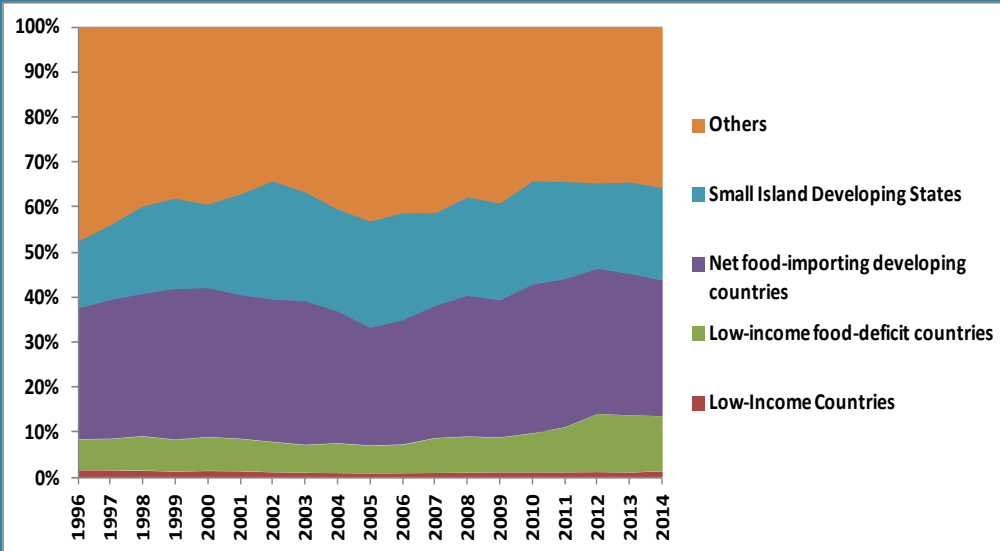
3rd TCAC Recommendations:

To continue with the development of an allocation mechanism;

CPCs are encouraged to ...working towards a consensus.

Limiting fishing capacity was also suggested ...but got little support.

Since its beginning in 1996, importance of tuna for IOTC members has changed...

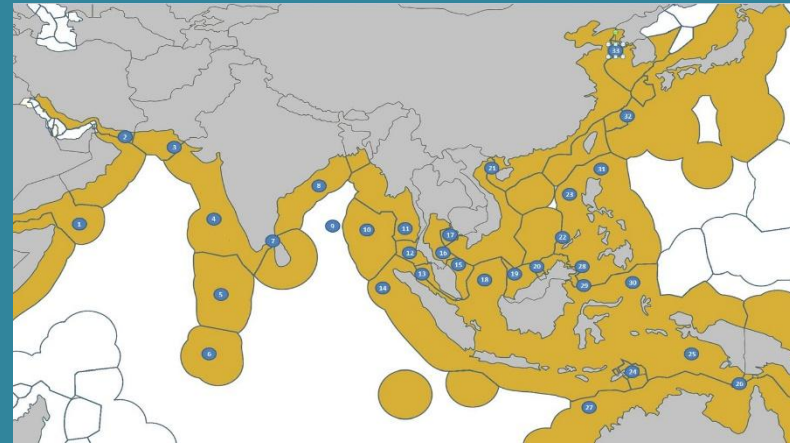


Most notably, developed countries (others) share has come down from 50% to 40% during these years.

Therefore, allocation needs to address various issues such as baseline data, exclusive rights, etc.

Extent and controlling of IUU Fishing also emerging as major challenge

- “Almost every country in the region has some sort of IUU issue with foreign or foreign beneficially owned vessels” (APFIC, 2016).
- The total tonnage and value of the estimated IUU catch is estimated as:
 - 2.06 to 2.51 million tonnes (for Asia-Pacific region)
 - USD 3.65 – 5.24 billion



IO: Management of bycatch and Neritic tunas

IOTC resolutions on by-catch

- Reporting;
- Technical and mitigation measures;
- Evolving measurable performance standards; and
- Market-based mechanisms.

Group	Species	E/NT species	Gear
Sharks	23	9	GN, LL, PS
Rays	11	1	GN, PS, LL
Turtles	4	1	GN, LL, PS
Birds	15	5	LL
Whales	3	1	GN, LL, PS
Dolphins	3	1	GN, LL

Neritic Tunas: Issues

- Insufficient data and high level of scientific uncertainty;
- Open access in many fisheries;
- Post harvest losses; and
- Market channels not well-developed.

Given the mandate of IOTC and the present status, there is good scope of regional cooperation, especially in...

- **Building information base;**
- **Capacity-enhancement; and**
- **Regional dialogue in allocation/other measures for sustainability.**

Fisheries management and advisory bodies in the region are IOTC, APFIC, SEAFDEC, INFOFISH and BOBP-IGO.

IUCN and WWF are larger environmental bodies with fisheries mandates.



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