

BOBP-IGO Regional Dialogue on Highly Migratory Fish Species in the Bay of Bengal
23 Nov 2017 at Kochi, Kerala (during 11thIFAF)
Presidential Address by Dr A Gopalakrishnan, Director, ICAR-CMFRI

Good Morning every one!

Respected Dr. J. K. Jena, DDG (Fisheries Sciences); Dr. Yugraj Yadava, Director, BoBP-IGO; Dr M Sudhakar, Director, CMLRE, Kochi; Dr P Pravin, ADG (Marine Fisheries – ICAR); Dr E Vivekanandan, BoBP-IGO; Dr Venkatesan, BoBP-IGO and all the esteemed delegates,

I am extremely happy to be here to preside over the very important symposium – a parallel international event – ***Regional dialogue on Management of Highly Migratory Fish Species (HMFS) in the Bay of Bengal (BoB)*** as a part of the (11th Indian Fisheries & Aquaculture Forum). I am happy to note that the symposium is attended by participants from 3 member nations of BoBP-IGO including India along with an fishery expert from SEAFDEC.

The Bay of Bengal is one the 66 very large and extraordinary marine ecosystems consisting of 8 different countries under its jurisdiction. It encompasses the continental shelves of Maldives, Sri Lanka and Indonesia, where tunas are abundant; nutrient rich upland river basins and unique Sunderban mangrove ecosystems of India & Bangladesh that supports a host of finfish and shellfish species of commercial significance and valuable coral reefs of Malaysia, Thailand & Myanmar.

More than 400 million people in the Bay of Bengal large Marine Ecosystem (BoBLME) region depend directly or indirectly upon this 6.2 million sq. km fragile marine ecosystem for their food and livelihood. Producing approximately 4% of the value of the world's catch (worth US \$ 4 billion), the annual fish production in BoB is about 6.0 million metric tonnes and the region provides fisheries livelihood directly to 4.5 million people.

Fisheries in the BoBLME are multi-gear and multi-species targeting a wide range of species including sardines, anchovies, mackerels, shark, grouper, snapper, eels, shrimps, bivalves, and highly migratory and straddling fish species such as tunas, tuna-like species, oceanic sharks, marlin, sword fish and dolphin fish.

The term highly migratory fish species (HMFS) has its origin in article 64 of the UNCLOS. It refers to the fish species which undertake ocean migrations and have wide geographic distribution in the high seas & EEZ of many nations and usually denotes tuna and tuna-like species, shark, marlin, sword fish and dolphin fish.

Coming to the status of these world's highly valuable resources in the BoB region, the top two species are yellow fin tuna (*Thunnus albacares*) and skipjack tuna (*Katsuwonus pelamis*). There are certain benefits for the tuna species in the BoB, when compared to the other tuna species such as blue fish tuna from other oceanic regions – the advantages include their fast growth rate being in tropical water, high fecundity, faster maturation, and wide geographic distribution.

As per the latest IOTC information, the fishing capacity for yellow fin tuna harvest has now substantially exceeded the requirements for sustainable and optimal extraction and the catch from the region needs to be reduced by 20-30%. Skip jack tuna though is moderately exploited in the BoB region, its catch cannot be increased as it leads to increased catch or undesirable species (by catch) mostly sharks in hook and line. Other tuna & tuna-like species such as kawakawa (*Euthynnus affinis*), frigate tuna (*Auxis thazard*) and bullet tuna (*Auxis rochei*) occur mostly in waters of continental shelves and these species are by and large optimally exploited.

Marlin, sail fish, sword fish and dolphin fish come under the data deficient category and concerted efforts are required to study their biology fisheries and optimum harvestable level in the BoB region. Though there has been some attempt to culture dolphin fish (mahi-mahi, *Coryphaena hippurus*) and to breed it under captive conditions, no major break-through has been reported from any countries.

Most of the sharks that exhibit high migration are over-exploited. Requiem sharks form almost 90% of the shark landing in the region and their characteristic features include slow growth, long life span and low fecundity and hence, they need altogether different management strategies. At international level – *International Plan of Action (IPOA) on Sharks* has been formulated and based on which, I am happy to say that CMFRI has brought out the *Guidance on National Plan of Action (NPoA) on Sharks*, and the Govt. of India is seriously considering to implement the recommendations given in the National Plan.

There has been some attempts to culture yellow fish tuna in different countries – the bottlenecks include requirement of large facilities - much larger tanks/cages – as they often collide with the tank walls in smaller facilities; and the second issue is their feeding. All these call for large oceanic / off-shore cage facilities to rear them and not the land-based re-circulatory systems. The economics of such operation also needs to be worked out to study whether such large culture facilities are advisable to countries such as India, Myanmar and Thailand etc.

Light fishing of tuna in the Philippines and Indonesian waters also is a cause of concern. As most of the tuna species are highly migratory, over-exploitation of these resources in another region can affect the stock size seriously in other parts of the world. Hence, concerted efforts are required at international level to monitor the light fishing of tuna in south-eastern and far-eastern countries. Shark by-catch (mostly the pelagic requiem sharks) in tuna hook and lines is also a cause of serious concern and awareness needs to be created among fishermen and steps to reduce the by catch of these valuable elasmobranch resources.

Pole and line, a predominant tuna fishing method in the region is comparatively more sustainable practice. However, sustainability of bait fisheries, a subsidiary fishery of the pole and line fishing is a cause of concern and therefore it needs a separate management plan as has been done in Indonesia recently in collaboration with the CEFAS, UK.

Highly migratory fish species of the Arabian Sea are totally neglected or unattended unlike BOBLME Region and there is an urgent need to create a fishery management organization for the Western Indian Ocean (Arabian Sea region) or expand the jurisdiction of BoBP / BOBLME to cater to the requirements of Arabian Sea as well.

Finally, I suggest, a joint stock assessment programme of HMFS in the BOBLME region involving all the countries and by incorporating biological & genetic principles of stock identification using advanced molecular genetic markers (such as SNPs and microsatellites) may be initiated on a war footing basis along with awareness campaign so that the resources are sustainably harvested in the BoB region.

I hope the Regional dialogue will address some of the major issues and come out with strong, implementable recommendations for better management of the world's most valuable fishery migratory resources.

I wish the regional dialogue a big success. I also thank the BoBP for inviting me for this very important meeting.

Thank you & Jai Hind!