AN OVERVIEW OF FISHERIES IN MAURITIUS

Presented by

Yajoshi Basant Rai (Mrs)

Divisional Scientific Officer

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Vision

Is an economic pillar with due regard to sustainability of aquatic resources and social development for the benefit of all stakeholders.

Mission

To provide an enabling environment for the promotion of sustainable development of the fisheries sector and to ensure continued economic growth, social development within the framework of good governance.
Policies and Strategies

- Ensure sustainability through an ecosystem approach to fisheries management
- Monitor marine ecosystems and seawater quality for conservation and management measures
- Increase production from aquaculture and ensure food security
- Facilitate growth and development of the industrial fisheries for processing and export
- Catalyse cooperation between countries of the Indian Ocean to focus effort on pressing regional concerns and enhancing capabilities at national and regional level
The Fisheries and Marine Resources Act 2007

- Marine Protected Area Regulations 2001/2007
- Toxic fish Regulations of 2004
- Vessel Monitoring System Regulations of 2005
- The Undersized Fish Regulations 2006
- Prohibition of removal of coral and sea-shell 2006
- Import of Fish and Fish Products Regulations 2012
- Export of fish and fish products Regulations of 2009
- Export of fish and fish products (Amendment) Regulations of 2012
- Fishing of Sea Cucumbers Regulations of 2009
Some instruments Mauritius has adhered to or is a member of and implements their conservation and management

- Agreement related to the Conservation and Management of Straddling and Highly Migratory Fish Stocks of the United Nations Law of the Sea (Fish Stocks Agreement) of 1995.
- Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR)
- Indian Ocean Tuna Commission (IOTC)
- South West Indian Ocean Fisheries Commission (SWIOFC)
- SADC Protocol
Fisheries is an important sector of the national economy, and is a renewable ocean resource and has to be managed sustainably. Hence, the need to monitor ecosystems, water quality, the effects of fishing, fishing effort and harvesting of species in its maritime zones.

It comprises the following sub-sectors:-

(i) the coastal or artisanal fishery
(ii) the semi-industrial fishery
(iii) banks fishery
(iv) tuna fishery /industrial fishery
(v) FAD fishery
(vi) Aquaculture
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Coastal/artisanal fishery (open access fishery)

- Around 2,160 registered fishers involved (2012)
- 1,400 wooden or FRP boats (pirogues)
- Total catch 705 tonnes
- No. of Fish Landing Stations – 60
- No. of Fish mongers – 1,012
- No. of Fisheries Posts - 15
- In addition, about 300 tonnes by amateur fishermen.
Deep-water demersal Fishery (Slopes of Nazareth and Saya de Malha) -

- Deep-water snappers (DWS) - slope of the Nazareth, Saya de Malha, Albatross, Sphyrna, North West and Soudan banks (depths 125m to 300m).
- Are relatively long-lived, slow growing and may attain sizes up to one (1) m in length and highly prized commercial species and mostly marketed chilled.
- An Acoustic survey on the slopes of St Brandon and Nazareth banks (Nov 2006, jointly with FAO) indicated potential for exploitation of DWS.
- Consequently, a semi-industrial fleet producing chilled fish for the market was developed.
- Ten (10) fishing vessels were active in the fishery on the dropoffs of the Banks with a total of 193 tonnes of chilled fish and 157.1 tonnes of frozen fish (2012).
Semi-industrial chilled fish fishery

- Semi-industrial chilled fish fishing boats (13 - 23.9 m LOA) started to fish in the shallow waters of the Saya de Malha, Saint Brandon, Albatross, Nazareth and the northern banks from 2003.

- 16 Fishing vessels operated in the fishery where some 150 fishermen were involved in the fishery (2012) and some 234 tonnes of fresh/chilled fish were caught.
Banks Fishery

- Banks regularly exploited by Mauritian Fishing vessels since 1960.
- Shallow water demersal fish species constitute the exploited fishery resources, ~ 90% of catch is *Lethrinus mahsena*. The other part of the catch is composed mostly of serranids and lutjanids with smaller quantities of tuna.
- Total landings from the banks 1 171 tonnes (2012)
- 5 boats were involved in banks fishery employing around 208 fishermen (2012)
Sub sector

Tuna fishery

- 102,728 tonnes fish and fish products exported (2012).
- Other processing facilities based on tuna and tuna products (fish meal, fish oil & livestock feeds).
- Mauritius jointly with its sister island (Reunion) has embarked on a project "SAPMER" for the operation of purse seiners to carry out fishing activities with Mauritian Flag.
- The SAPMER project besides production of preserved tuna also includes high valued sashimi products and associated cold room facilities.
Outer-reef Fishery Development - Fish Aggregating Devices (FAD) Fishery

FADs introduced in 1985 to facilitate fishing of migratory pelagic fish resources

- around 305 registered fishermen around FADs.
- CPFD - ~25kg around a FAD compared to ~ 5 kg in the lagoon.
- Presently, the FAD fishery yields nearly 400 tons, main species caught - tunas, dolphin fish, wahoo and billfishes
- 21 active FADs around the island out of 28 identified sites
Management Tool

- Limited entry system (from 1992) – Licensing for fishing vessels fishing on banks
- Total Allowable Catch and a system of quotas to vessels operating on the banks (from 1994)
- Management plan for the shallow water demersal fish species of the Saya de Malha and Nazareth Banks developed.
- An interim management plan in place in the deep-water snapper fishery (slopes of the banks) where only 15 vessels are allowed to fish for a total catch of 360 tonnes.
- Collecting and processing of data, analyse logbooks and length frequency data and produce information for management.
Management Tool

- Marine Protected Areas (MPAs)
- Closed seasons (for large nets and gillnets)
- Gear size and gear type restrictions
- Minimum size restrictions (of common commercial fishes)
- Limitation on number of nets licences.
- Not registering new lagoon fishers
- Registration of boats
- Enforcement of legislations
- Fish Aggregating Device (FAD) programme.
Marine Aquaculture
Aquaculture - One Marine Farm (Ferme Marine de Mahebourg)
Species cultured to date: Red drum, *Sciaenops ocellatus*
Silver sea bream, *Rhabdosargus sarba*
Seabass - *Dicentrarchus labrax*
- One Fresh water Farm (Val Farm Ltd.)

Aquaculture Master Plan (2007) - Development (fresh and Marine)

- 20 sites will be available for marine aquaculture, including the proclaimed 8 fish farming zones on the South East Coast
- Evaluated production potential from aquaculture in the medium-term to long term to be between 23,000 and 39,000 tonnes, all species combined,

- 8 fish floating platforms placed at sea for the fishermen who have grouped into cooperatives period 2012-2013

- One million fingerlings released at sea under the marine ranching programme in 2013
Long-term monitoring of coral reefs (12 sites), coastal water quality (23 sites for physico-chemical parameters, 13 sites for coliform bacteria at Public Beaches, 3 sites at outfalls, and 4 sites for harmful algae) to reflect overall health of the coastal waters for implementation of appropriate management measures

- Detect occurrences of coral bleaching, recovery/resilience
- Coral farming to rehabilitate degraded coral reefs
- Monitoring of ex-sand mining sites for re-colonization
- Mangrove Propagation providing technical knowhow to private and government organisations for propagation of mangroves.
- Accreditation procedures for laboratories underway and progressing
In Mauritius, coral bleaching observed in 1998, 2004 and in 2009 is one of the causes for decrease in coral cover. (In 2009, the SST recorded was 29.5°C). No coral bleaching was observed from 2010 to date.

Might observe coral bleaching episodes in 2014, with prediction of Met. Services that temperatures will occasionally exceed the monthly average by more than 2°C and max. temperatures may reach 35°C along coastal areas.
Training of fishermen - FAD Fishery, semi-industrial longline fishery, basic oceanography, safety/seamanship/maintenance of outboard, inboard engine and handling/preservation and marketing

Fisheries Protection Service - controls coastal and lagoon IUU fishing and collaborates with NCG in joint surveillance activities
Port State Control Unit

A Port State Unit operational since June 2004 and offers a One Stop Shop service to facilitate the administrative and operational clearances in respect of fish transhipment, loading/unloading/export of fish and fish products, sanitary control, health certification, customs and immigration clearances.

Officers of different departments work in close collaboration under the same roof. The personnel operating in the Unit comprises:

- M/Fisheries
- Health and Quality of Life
- Customs and Excise Department
- Passport and Immigration Office
- Competent Authority – Seafood
Mauritius has since June 2005, set up a Vessel Monitoring System (VMS) and promulgated the Marine Resources (Vessel Monitoring System) Regulations 2005, whereby it requires that all vessels and boats licensed to fish within Mauritius waters to be equipped with a satellite-tracking device.

National Plan of Action - NPOA to implement effective MCS
The Economic impact of fisheries (2012)

- Turn-over in the fisheries sector – EUR 557M
- Export of fish and fish products around 102,728 tonnes estimated at EUR 318 M accounting for around 18.7% of national exports
- Imports of fish and fish products were estimated at MUR 10.94 billion.
- Trade balance was positive and stood at some EUR 45 M
- Local production attained 4,393 tonnes with 3,906 tonnes from capture fisheries and 487 tonnes from aquaculture
- A total of 851 fishing vessels called in the port generating some MUR 8.5 billion.
- Re-export of fish and fish products in the Freeport totalled EUR 63M
- Total indirect and direct employment in the sector was around 22,000.
- Per capita consumption of fish was 21.7 kg
Concluding remarks

- Effect of climate change - may affect distribution patterns, species composition, fish productivity in the artisanal and banks sectors in the future

- Tuna fish resources may be affected due to increase in of seawater temperature their geographical extent will increase or decrease, and temperate tunas will migrate more to higher or lower latitudes.

- Hence, the need to continuously monitor the oceanic parameters: temperature, currents, upwelling areas to build up data base for predictions on ocean environment

- This is where programs like IOGOOS can make major contributions.
Thank You For Your Attention