

## PELAGIC FIN FISHERY RESOURCES OF INDIA

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### Introduction

India is endowed with a long coastline of 8129 km. Being tropical country, the marine ecosystem bordering Indian sub-continent contain large number of species adapted to wide range of habitats, from mangrove swamps, estuaries, saline lagoons, sea grass meadows, sandy/ muddy/rocky coasts, coral reefs, oceanic islands to deep oceanic realms. These resources are supporting the marine fishery of the country. The water spread of continental shelf is 0.5 million sq. km and of EEZ is 2.02 million sq. km. The annual catchable marine fishery potential of the EEZ is 4.42 million tonnes. India is one of the leading nation of the world in marine fish production and export.

### Growth in Marine Fisheries

Coastal marine fishery made remarkable growth since mechanisation started in early sixties. The marine fish production increased steadily from 0.68 million t in 1961 to 3.94 million t in 2012. This increase may be attributed mainly to the increase in fishing intensity coupled with introduction of mechanised fishing vessels, motorisation of the country crafts, modernisation of harvesting techniques coupled and extension of fishing to deeper waters. Mechanisation and diversification of fishing have slowly extended fishing activity beyond the continental shelf. Adoption of advanced techniques to detect resources and to identify productive ground and use of fish aggregating devices added to the efficiency of fishing operation. Yield of pelagic resources also registered similar growth as of total marine production from 0.44 to 2.1 million t by 2011. Fishery registered marginal decline thereafter.

### Marine Finfish Resources

Fishery resources are classified broadly as pelagic and demersal based on their distribution in the water column. Pelagics are diverse group of small to large fishes which occupy mainly the surface and column layers of the water mass. Most of them are characterised by their



shoaling behaviour. Large numbers of species which are either bottom dwelling or inhabiting mainly along the lower layers of water column are termed as demersal resources. Assessment of the stocks of major exploited resources from the coastal waters have revealed the present level of fishing pressure, which each resource is experiencing.

### **Oil sardine**

The resource is represented by a single species, *Sardinella longiceps* and distributed widely along the Indo-Pacific region. They form the mainstay of pelagic fishery of India. They occur all along the Indian coast. Till recently their abundance was largely restricted to the coastal waters between Quilon and Ratnagiri with 90% of the reported fishery from this area alone. However, in recent years, they emerged as the major resource along the entire east coast up to Orissa waters towards north.

### **Lesser sardines**

Nearly 13 species constituted the resource and fishery. They occur along the entire Indian coast but their abundance and fishery confined largely to the inshore waters of Kerala, Tamilnadu and Andhrapradesh. It include 10 species under the genus *Sardinella*, two species under *Dussumieria* and *Esculosa thoracat*. Dominant species are *Sardinella gibbosa*, *S.albell*, *a S.fimbriata* *S.dayii* and *S.sirm*. Species show discontinuous distribution.

### **Dorabs**

They are non-shoaling fishes, abundant along both east and west coast with large abundance along the southeast coast. Two species namely, *Chirocentrus dorab* and *C.nudus* supported the resource and fishery. Large abundance in shallow waters between 10 –30 m depth. They migrate to deeper waters for spawning. They usually form fishery along with other resources. Their average annual landing is 18,403 t during the last decade, forming 0.6% of the total marine production. 50% of the total landing is from the Tamilnadu coast between Palkbay and Gulf of Mannar.

### **Anchovies**

Resources and fishery are supported by species belonging to the genera *Stolephores*, *Thryssa*, *Thryssina*, *Coilia* and *Setipinna*. White bait belonging to the genus *Stolephores* constitute nearly 70% of the catch. They are abundant in coastal waters of 5-20 m depth. 90% of the resource was concentrated in area between Ratnagiri and Gulf of Mannar. Abundance of other anchovies are relatively large along the coastal waters of Andhra, Tamilnadu, Kerala, Karnataka and Maharashtra.



### **Other Clupeids**

Several species belonging to different genera, *Pellona*, *Hilsa*, *Ilisha*, *Elops*, *Megalops*, *Anadontosoma* etc. support the fishery. They are widely distributed along the east and west coast, with large abundance along the east coast.

### **Mackerel**

Resource is represented by three species in Indian waters. However more than 98% of the stock and fishery was supported by Indian mackerel, *Rastrelliger kanagurta* alone. *R.brachisoma* and *R.faugni* form sporadic fishery respectively in Andaman Madras waters. Mackerel is abundant in coastal waters within 25 m depth. Nearly 80-90% of the total mackerel catch is from west coast. However in recent years, their abundance and fishery is on the increase along east coast. The present average production was 176,103 t during the last decade and constitute nearly 5.7% of the marine fish production during this period.

### **Tunas**

These are typical oceanic fast swimming and highly migratory pelagic fishes and most of them have cosmopolitan distribution. Resource is represented by nine species belonging to the genus *Auxis*, *Euthynnus*, *Thunnus* *Katsuonus* *Sarda* and *Gymnosarda*. These are typical shoaling fishes and aggregate in large numbers around any floating objects in open sea.

### **Billfishes**

Bill fishes form by-catch in oceanic tuna and shark fishery. They are represented by *Istiophores*, *Makyras* and *Xiphias* Spp. Their average production was 6,372 t during last decade. They constitute only 0.3% of the marine fish production during this period.

### **Seerfishes**

They are the most relished fishes with very high market demand. Five species namely *Scomberomores commerson*, *S.guttatus*, *S.lineolatus*, *S.koreanus* and *Acanthocybium solandri* supported the resource and fishery. They are abundant in the neretic and oceanic waters of both coasts. But undertake long term inshore migration and form fishery in shallow waters. *S.guttatus* is available in less saline turbid waters of coastal belt. Average production was 50,450 t during the last decade and constitute nearly 1.6 % of the marine fish production.

### **Carangids**

Carangids are a diverse group of fishes having different body shapes. They are widely distributed along the entire coastal waters of India, Their major abundance confined to shallow waters up to 60 m depth. More than 35 species constituted the resource, with many species showing discontinuous distribution. However, commercial fishery was supported by few species. Horse mackerel and scads dominated the fishery. Average production was 200,324 t during the last decade constitute nearly 6.5% of the marine fish production.



### **Ribbonfishes**

They are abundant along east and west coast with large abundance along the peninsular region. Resource was supported by six species dominated by *Trichiurus lepturus*. Their maximum abundance was reported in deeper waters between 25-75 m depth. They being carnivores, used to follow shoals of small pelagics and Acetes and were fished in large quantities by shrimp trawls. Average production was 168,853 t during last decade and constitute nearly 5.5% of the marine fish production.

### **Bombay duck**

Fishery was supported by three coastal water species dominated by *Harpodon neherius*. Resource distribution was discontinuous confined to northern sector of east and west coast. Major share of the resource and fishery is confined to north west coast ie. Gujarat and Maharashtra coast and the rest from coast of Orissa, Andhrapradesh and Tamilnadu. They are fished mainly by fixed Dolnetat 15-50m depth zone. Sizeable quantities were also landed by trawls. Average production was 114,576 t during last decade and constitute nearly 3.7% of the marine fish production.

### **Flying Fishes**

They inhabit off shore waters of 30-40 km away from the shore. Several species belonging to *Parexocoetus*, *Cypselurus* and *Exocoetus* supported the fishery. Good fishery occur along the Coramandal and Gulf of Mannar coast of Tamilnadu and small quantities from Andhra coast. Average production was 1,825 t during last decade.

### **Belonids and Hemirhamphids**

Good resource of garfishes and half- beaks were available in the Gulf of Mannar and Palk Bay and support a potential local fishery. Average production was 4,140 t during last decade.

### **Other pelagic**

Other resources which contribute considerably to pelagic fishery are barracudas, king fishes (cobias), barramundi, mullets, milkfish, tarpons, lady fishes, glossy perclelets, fusiliers etc. They form commercial fishery at varying levels at certain areas.

