Distribution Pattern Of Marine Fishery Resources Of India

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The rich marine fishery resources of India include several groups or individual species of fishes which support major or minor fisheries; the crustaceans represented by prawns, crabs and lobsters; the molluscs including mussels, oysters, pearl oysters, clams, gastropods and cephalopods; and several ancillary resources like corals, sponges, holothurians, turtles, stomatopods and sea-weeds. In this account, the important regions for their availability and exploitation are indicated.

FISHES

I. The Indian oil sardine (*Sardinella longiceps*) :

Very wide fluctuations in the annual catches are characteristic of this species, which forms a single species fishery, especially along the west-coast of India off the Kerala and Mysore States. Its occurrence along the eastcoast is insignificant from the fishery point of view.

2. The Indian mackerel (*Rastrelliger kanagurta*) :

It supports a single species fishery along the west-coast of India in the region from Cape Comorin in the south to Ratnagiri in the north. As in the case of the oil sardine, wide fluctuations in the annual catches are also characteristic of the mackerel fishery which is unimportant along the east-coast of India.

3. The Bombay duck (*Harpodon nehereus*) :

The Bombay duck, like the above two species, forms a single species fishery of utmost importance in the States of Gujarat and Maharashtra. It exhibits a peculiar discontinuous distribution along

the Indian coast. Along the east-coast, fairly large quantitities are caught off the coasts of Andhra Pradesh, Orissa and West Bengal States. Long term and annual variations in the catches were noticed but not to such a marked degree as in the case of the oil sardine and the mackerel.

4. **Ribbon-fishes :**

The group comprises four species, of which *Trichiurus lepturus* is the dominant species. The ribbon-fishes are found all along the Indian coast but are of fishery value in the States of Andhra Pradesh, Tamil Nadu and Kerala.

5. **Silver-bellies :**

A total of 17 species belonging to three genera, *Leiognathus*, *Secutor* and *Gazza* constitute this group. At most of the places, a few species occur togather and contribute to the catches which are significant in the States of Tamil Nadu and Kerala. They are of minor importance in other regions, though they occur almost throughout the Indian coast.

6. **Elasmobranchs :**

Comprising the sharks, rays and skates, the group is more important along the east-coast than along the west-coast. Among the sharks, species of *Carcharhinus*, *Scoliodon* and *Sphyrna*; of the rays, *Himantura*, *Dasyatis*, *Rhinoptera* and *Gymnura*; and among the skates, *Pristis*, *Rhynchabatus* and *Rhinobatus* are of importance from the fishery point of view.

7. **Cat fishes :**

This group, embracing at least six important species of the genus *Tachysurus*, is equally important on both the east and west-coasts of India and forms an important component of trawl fish catches at several places.

8. White-bait (*Stolephorus* spp) :

These are small fishes of considerable importance especially along

the east-coast (Orissa, Andhra Pradesh, Tamil Nadu) and the south-west-coast (Kerala) of India.

9. Sciaenids :

The important genera to which these fishes belong to are *Otolithoides*, *Pseudosciaena*, *Otolithus*, *Johnius* and *Sciaena* which are widely distributed along the entire Indian coast. They constitute an important part of the trawl fish catches and are captured in large quantities along the north-west, north-east, south-west and south-east coasts.

10. Lactarius :

The fish is distributed widely along the Indian coast, the States important for its occurrence being Andhra Pradesh, Tamil Nadu, Kerala and Mysore.

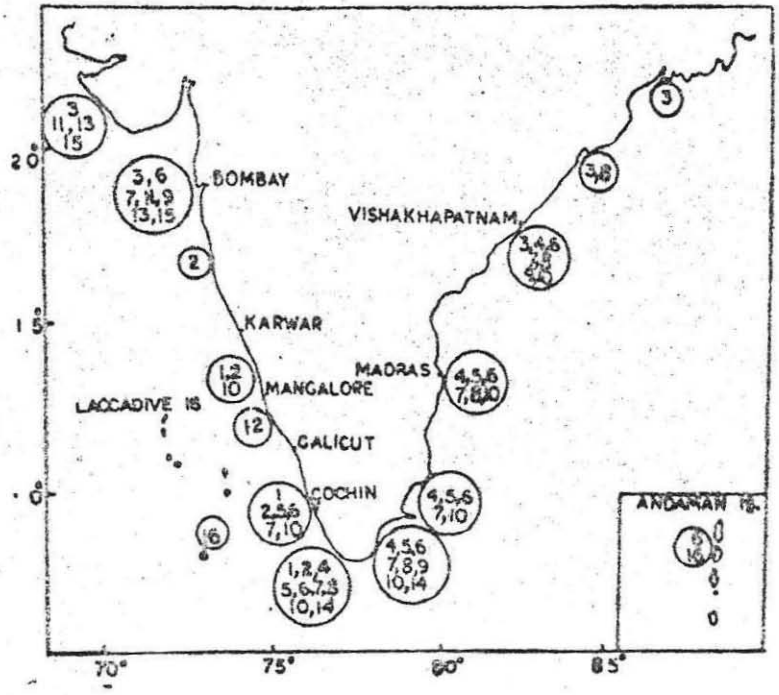

Fig. 1 :

Distribution pattern of the fisheries for some important marine fishes of India.—1. The Indian oil sardine. 2. The Indian mackeral. 3. The Bombay duck. 4. Ribbon-fishes. 5. Silver-bellies. 6. Elasmobranchs. 7. Cat fishes. 8. White-bait 9. Sciaenids. 10 Lactarius. 11. Pomfrets, 12. Soles. 13. Polynemids. 14. Perches, 15. Eels. 16. Tunas.

11. **Pomfrets :**

These fishes, belonging to the genus *Stromateus* are widely distributed along the Indian coast and form an important constituent of trawl fish catches, especially in the north-western region.

12. **Soles :**

The soles are found all along the Indian coast, of which the Malabar sole (*Cynoglossus macrostomus*) is of considerable fishery importance along the coasts of Kerala and Mysore states.

13. **Polynemids :**

Represented by the genera *Polynemus* and *Eleutheronema*, these fishes are landed in large quantities along the north-western region (Maharashtra and Gujarat), though minor quantities are landed at other places along both coasts of India. They form an important component in the trawl fish catches.

14. **Perches :**

Typical spiny-finned fishes like *Lethrinus*, *Lutjanus*, *Epinephelus*, *Plectorhynchus* and *Pomadasys* and several others are caught along both the east and west coast of India but appear to be more common along the rocky regions of the coast, especially the south-western regions.

15. **Belo :**

The important species is *Muraenesox talabonoides* which is landed in large quantities in the north-western region, Maharashtra State ranking first and Gujarat State second.

16. **Tunas :**

An established tuna fishery is found at the Minicoy Island in the Laccadives where a few species like *Katsuwonus pelamis*, *Kishinoella tonggol*, and *Thunnus albacares* are caught in some quantities. Tunas are also caught in smaller quantities along the south-west and south-east coasts and in the Andaman and Nicobar Islands.

In addition to the above important groups or species of fishes, there are certain others forming localised fisheries, their quantities not being high. Of these, mention should be made of carangids (prominent along east-coast) flying fishes (coromandel coast), red mullets or goat fishes (south-east and south-west coasts), lizard fishes, seer fishes, barracudas and mullets (both coasts.)

CRUSTACEANS

1. Prawns :

The major prawn fishing grounds are confined to the west-coast of India. The species attaining large size (penaeid prawns) are comparatively more abundant off the south-west coast of India. Smaller varieties of prawns (non-penaeids) are landed in large quantities along the Maharashtra coast. At present, on the east-coast, the prawn catches are low and are obtained mostly from areas close to the river mouths and off the deltaic regions. Recent studies indicated fairly dense concentrations of deep sea prawns off the south-west coast. Exploratory surveys along the east-coast have also indicated availability of prawns off the Andhra Pradesh and Orissa coasts, in greater quantities.

2. Crabs :

The crabs of commercial value are mainly three species, viz. *Portunus pelagicus*, *P. sanguinolentus* and *Scylla serrata*. Crab fisheries are more important along the east-coast of India than along the west-coast, though the crabs are caught along both the coasts. While the first two species are landed from the sea, the last one is mainly caught from the brackish water lakes and estuaries.

3. Lobsters :

The lobsters belonging to the genus *Panulirus* are important from the fishery point of view along the south-east and south-west coasts of India. The deep sea spiny-lobster, *Puerulus sewelli* reported recently to be available in large quantities off the south-west-coast of India is an important new resource.

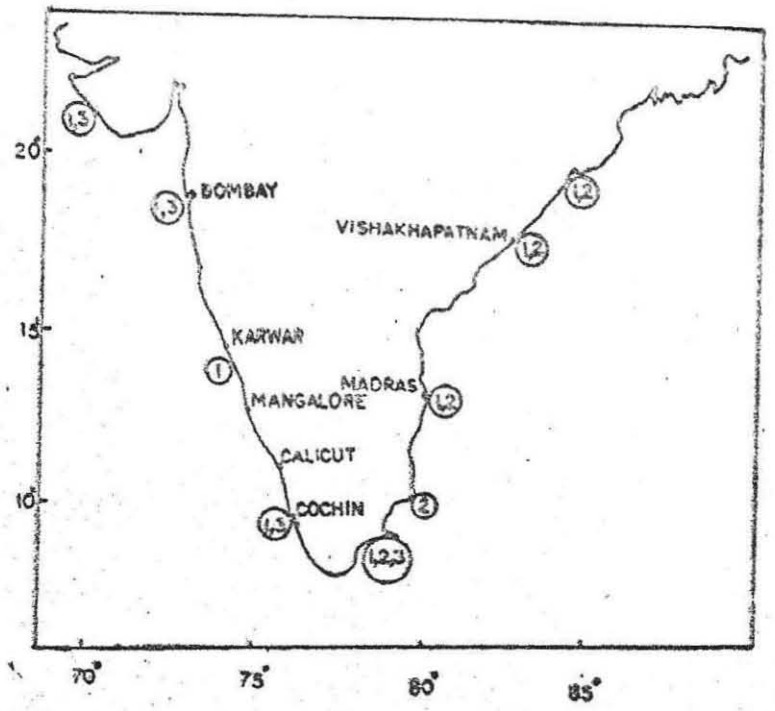

Fig. 2 : Distribution pattern of the fisheries for marine Prawns, Crabs and Lobsters of India.—1. Prawns. 2. Crabs. 3. Lobsters.

MOLLUSCS

1. Mussels :

The green mussel, *Mytilus viridis* though distributed all along the east and west-coasts, is abundant along the Kerala and southern Mysore coasts. On the east coast, it occurs at Madras and in the back waters of Orissa. The brown mussel, *Mytilus* sp. is distributed along the south-east and south-west coasts.

2. Oysters :

The Indian backwater oyster, *Crassostrea madrasensis* is widely distributed in all the estuaries and back waters of the east-coast, but rather restricted to the southern region only on the west-coast. It is abundant in Kerala (Vembanad lake), Tamil Nadu (Pulicat lake, and back waters of Ennore) Andhra Pradesh and Orissa States. Few other species of the genus also occur on both the coasts.

3. Pearl Oysters :

The species, *Pinctada fucata* supports the pearl fisheries of the Gulf of Mannar, Palk Bay and the Gulf Kutch. The most productive central zone is near Tuticorin in the major region extending from Cape Comorin to Kilakarai along the Gulf of Mannar coast. The window-pane oyster, *Placenta placenta* found in the muddy regions of the Gulf of Kutch, Bombay harbour and in Andhra Pradesh also produces large quantities of dull, small-sized seed pearls.

4. Clams and other bivalves :

These are available along both coasts in bays, creeks, estuaries, back waters and the surf beaten sandy shores. Important genera are *Meretrix*, *Katelysia*, *Paphia*, *Arca*, *Donax*, *Villorita* and *Solen*. Along some regions of the west coast, especially the southern Mysore coast, large quantities of clams are regularly fished round the year and used as food.

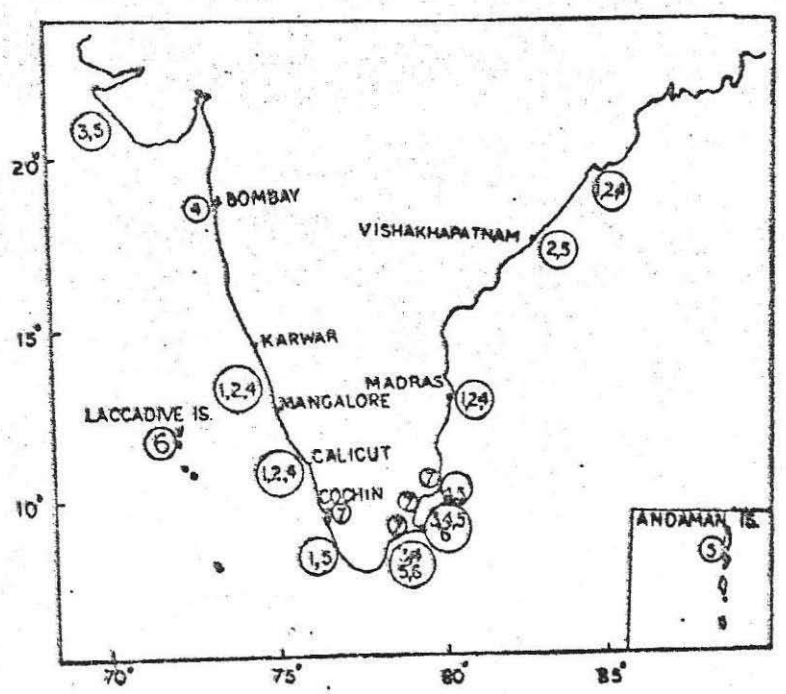

Fig. 3 : Distribution pattern of the fisheries for some important molluscs of India—1. Mussels. 2. Oysters. 3. Pearl oysters. 4. Clams and other bivalves. 5. Gastropods. 7. Subfossil deposits of molluscan shells.

5. Gastropods :

The important genera are *Trochus, Turbo,* and *Xancus* of which, the first two reported abundant in the Andaman and Nicobar islands, are mostly used for ornamental purposes while the last, widely distributed along both the coasts, is extensively fished by diving along the coasts of Tamil Nadu, Andhra Pradesh, Kerala and Gujarat and is put to a variety of uses.

6. Cephalopods :

The group including the cuttle fishes (genus *Sepia*) and squids (genus *Sepeioteuthis*) are caught along both the coasts, the latter forming a fishery along the south-eastern region. The occurrence of large quantities of commercially important oceanic squids, especially off the west coast of India and in the Laccadive Sea was recently reported.

7. Subfossil deposits of molluscan shells :

Areas of importance for these deposits are the coasts and brackish water lakes of Tamil Nadu and Kerala States.

ANCILLARY RESOURCES

1. Corals :

Within the seas around India, corals which form a major source of calcium carbonate and used in the preparation of calcium carbide, lime and cement besides their use as house and road building materials, are found extensively in the Palk Bay and Gulf of Mannar, in Andaman and Nicobar Islands and in the Laccadive Archipelago.

2. Sponges :

Of the several species of sponges reported from the seas around India, *Spongia officinalis* var. *ceylonensis* appears to be of commercial value. It is widely distributed in the shallow water areas of the Gulf of Mannar, Palk Bay and the Laccadive Archipelago.

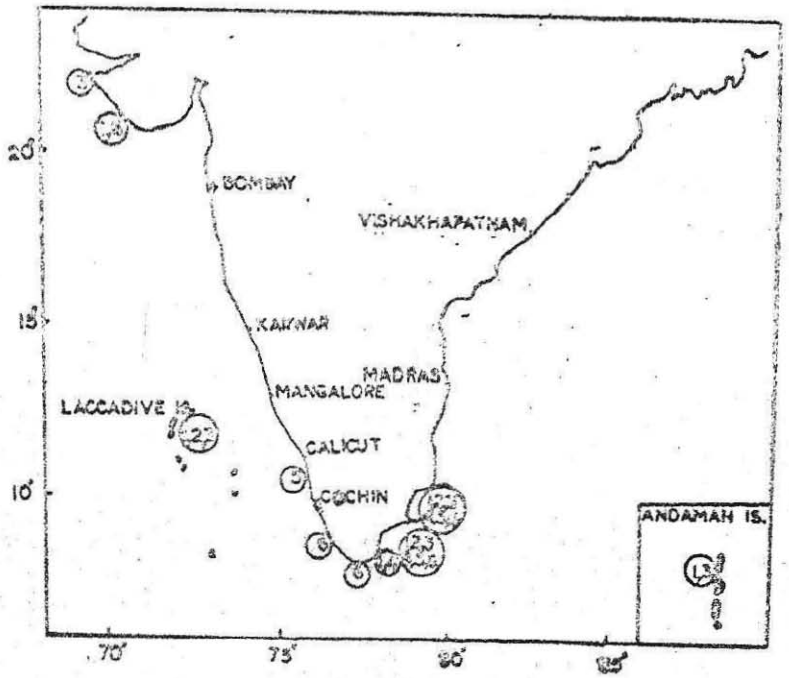

Fig. 4 :

Distribution pattern of some marine ancilliary resources along the Indian coast.— 1. Corals. 2. Sponges. 3. Holothurians. 4. Turtles. 5. Stomatopods. 6. Sea weeds.

3. Holothurians :

Baeche-de-mer is the commercial name given to the cured holothurians. The product is considered a delicacy in some south-east Asian countries. The industry is restricted to coastal villages along the Gulf of Mannar and Palk Bay coasts, where the species, *Holothuria scabra* is extensively collected for this purpose. Holothurians are also found in the Gulf of Kutch, Laccadives and Andaman group of Islands.

4. Turtles :

Turtles are caught along the entire coastline of India but are of fishery value only in the Palk Bay and Gulf of Mannar regions, where on an average about 5,000 numbers of the green turtle, *Chelonia mydas* are landed every year.

5. Stomatopods :

The commercial catches of this group are formed by a single species, *Oratosquilla nepa* which is landed in considerable quantities along the south-west coast and to some extent along the south-east also. At present they are used only as manure.

6. Sea weeds :

In India, several areas along the coast offer suitable environment for luxuriant growth of seaweeds of commercial value as food, fodder and fertilizer. The States of Tamil Nadu, Andhra Pradesh (Visakhapatnam), Orissa (Chilka lake), Kerala, Mysore (Karwar area), Maharashtra (Bombay & Ratnagiri), and Gujarat (Okha, Dwarka, and Veraval) are some of the potential areas along the Indian coast. Of these, the south-east, south-west and north-western regions are rich in the resources.