Fishery system in India

India, the third largest fish- producing country and second largest aquacultural fish producer in the world, contributes about 7.96% to the global fish production. India, a home to more than 10% of the global fish biodiversity, has 2,80,11,649 fishermen. India exports more than 50 different types of fish and shellfish products to 75 countries.
This is around 10% of the total exports and nearly 20% of the agricultural exports, and contributes to about 1.07% of the GDP and 5.23% to the Agricultural GVA of the country.

Fish production has increased from 41.57 lakh in 1991-92 to 137.58 lakh tonnes (inland fishery-95.82 lakh tonnes; marine -41.76 lakh tonnes) in 2018-19. Fisheries play an important role in the economy of India. The Indian budget for the fishery sector for 2020-21 was 4766.23 crore.

Fisheries, an economic activity that requires harvesting fish or any aquatic organism from the wild (Capture Fisheries) or raising them in confinement (Culture Fisheries/ Aquaculture).

Andhra Pradesh is the largest fish producer in the country followed by West Bengal and Gujarat.
In excess of six million fisheries and fish farmers, a majority of whom reside in 3937 coastal villages, earn their livelihood through aquaculture and fisheries.
Rs. 334.41 billion is generated through exports according to the national fisheries board.

Boasting of about 8118 kms of coastal length with some of the most productive fishing grounds in the world, India is blessed with an Exclusive Economic Zone (EEZ) extending to 20.2 lakh sq. kms with a continental shelf area of about 5.2 lakh sq. kms.

India's fresh water resources comprise 195,210 kilometres of rivers and canals, 2.9 million hectares of minor and major reservoirs, 2.4 million hectares of

ponds and lakes, and about 0.8 million hectares of flood plain wetlands and water bodies.

Types of Fisheries:

The commercially significant varieties of sea fish have been classified into 15 groups and fresh water fish into 8 groups.

The sea fish group (comprising marine and estuarine fisheries) incorporates anchovies, Mumbai duck, mackerels, perches, silverbellies, flat fishes, mullets, Indian salmon, jew fish, crustaceans, etc.

The fresh water fishes are included under prawns, murrels, feather backs, loaches, perches, eels, etc.

India boasting of large potential fishery resources has a coastline of about **6,100 kms.** into which innumerable mammoth and perennial rivers discharge their silt-laden water and a continental shelf of more than **0.16 m. hectares** in the form of a narrow belt from shore to about 200 metres line, the two arms of the Indian Ocean and a large number of gulfs and bays, creeks along with the extensive backwaters, estuaries, lagoons, and swamps along with the entire coastline.

The four categories of fishery resources are (1) Marine; (2) Freshwater; (3) Estuarine; and (4) Pearl fisheries.

(1) Marine Fisheries:

Marine fish production level has risen from 35.69 lakh tons in 2014-15 to 41.76 lakh tons in 2018-19. Marine fisheries incorporating the coastal fisheries and off-shore and deep-sea fisheries account for about 55% of the total annual production.

(a) Coastal Fisheries:

Approximately 69% of marine fish is bred along the West Coast in Kerala, Maharashtra, Karnataka, Gujarat, Goa and Daman and Diu.

The most intensive fishing zone of India is the coastal zone which is up to 25 metres deep and stretches for a few kms from the shore.

Technical, financial and extension support are lent to shrimp farmers in the brackish water zone in all the coastal states by Brackish water Fish Farmers Development Agency (BFDA).

28 minor fishing harbours and 113 fish landing centres have been set up to provide landing and berthing facilities to fishing craft despite the existence of six major fishing harbours, i.e., Cochin, Sassoon Dock (Mumbai), Chennai, Visakhapatnam, Roy chock (Calcutta) and Paradip.

Fish are trapped from Ratnagiri to Kanya Kumari along the west coast, accounting for more than 75 per cent of the total sea fish landings in the **country**.

b) Off Shore and Deep-Sea Fisheries:
Fishing in offshore and distant parts of the high seas implies deep sea fishing.

The governments of Japan, Norway and the United States support deep Sea fishing stations in Mumbai, Kolkata, Cochin, Tuticorine and Vishakapatnam. Power-propelled vessels and highly sophisticated gears such as trawls are employed to tap these resources.

Ghol (Jew fish), koth, warn (sea eel), perches, shark, karkara, pomfrets, catfishes, rays, silver- bellies, curangids, shende and dhoma are the most significant commercial fishes.

A colossal research-cum-fishing vessel of 46.3 m length has been acquired by The UNDP/FAO Pelagic Fisheries Project. An airborne survey has also been accomplished besides regular ship based inspections using acoustic equipment.

(3) Inland or Fresh Water Fisheries:
Inland fisheries comprising the fresh water fisheries like tanks and ponds, rivers, irrigation canals, reservoirs and freshwater lakes; and the estuarine fisheries like estuaries, delta channels, back waters, lagoons and coastal lakes account for approximately 45% of the country’s total fish production.

Out of 20.2 lakh hectares area of tanks and ponds in India, only 8 lakh hectares or 37.50% is utilised for pisciculture. The country boasts of 1,

45,928 kms. length of irrigation canals, 27,359 kms. length of rivers, 21 lakh ha of reservoirs and small lakes, and 26 lakh ha of brackish waters near the sea **coasts.**

The satellite remote sensing and sea truth data for assessing the resource distribution are employed . A number of vessels under joint ventures were operationalised from 1993 under the Deep Sea Fishing Policy of 1991.

The fishermen select fast growing species with non-predaceous feeding habits for cultivation in ponds, tanks and reservoirs.

The Fishery Survey of India (Mumbai) surveys and evaluates marine fishery resources of the Indian Exclusive Economic Zone (EEZ). It possesses 12 ocean- going- survey vessels presently operating from bases at Porbandar, Mumbai, Mormugao, Cochin, Chennai, Visakhapatnam and Port Blair. It is now carrying out the survey of demersal resources along both the coasts and around the Andaman and Nicobar Islands.

Fresh water fisheries are divided into two categories: the pond fisheries and the riverine fisheries.

(a) The Pond Fisheries:
Pond culture is popular in U.P., M.P., Andhra Pradesh and Tamil Nadu. The species widespread in ponds are catla, rohita, kalabasu, bata, mringal, mullets, milk-fish, pearlshot, carp, etc.

(b) Riverine fisheries:
The Inland Fisheries resources in the country consist of 30 lakh hectares of reservoirs , 29 thousand kms. of rivers and their tributaries, 15 lakh hectares of tanks and ponds and 14 lakh hectares of brackish water swamps.

Rivers account for about one-third of the total fish production in India. The principal fresh water fish are: catla, kalabasu, tor, mringal, vacha, amabas, mullets, feather backs, herring, hilsa, eels and anchovies.

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(4) Estuarine Fisheries:
Estuarine fisheries are prevalent in estuarine areas of the rivers of the Godavari, the Krishna, the Cauvery, the Ganga, the Mahanadi, , the Narmada, and the Tapti; the brackish water lakes of Chilka and Pulicate; and the backwaters of Kerala.

The Chilka Lake is an open shallow brackish water lake. The Sunderbans with numerous ponds, marshy land, perennial canals, ox-bow lakes and rivers provide sufficient scope for estuarine fisheries in an area of about 5,800 sq. miles

These fisheries are restricted to the tidal estuaries, lagoon estuaries, backwaters, inundated areas and swamps along the entire coast.

.**(5) Pearl Fisheries:**

The State Governments control and supervise the pearl beds. Divers harvest pearl-oysters in South India, but they are visible at low-water spring tides in Kutch and Saurashtra and harvesters collect them manually.

The Gulf of Manaar, Gulf of Kutch, and Palk Bay are the hubs of pearl fisheries in India.

State-Wise Distribution:

Gujarat, Maharashtra, Kerala and Tamil Nadu account for 70% of the country's total catch of marine fish and West Bengal, Andhra Pradesh and Bihar account for 55% of inland water fish **catch**.

Gujarat:
Apart from numerous fishing villages dotted along the coast of Gujarat contributing about 13-14% of India's total annual fish production, it has 46 important fishing ports. Kandla, Porbandar, Dwarka, Navabandar, Jafferabad and Umbergaon are the leading centres of production.

There are 22 cold storages and 3 shark liver oil extracting centres. Through the 350 cooperative societies established in the state, huge amount of production is distributed.

Maharashtra:

Maharashtra contributes more than 6 lakh tonnes to the annual total national output of fish. About 5 lakh persons are occupied in fishing activities using 9,000 traditional fishing tool and 7,665 mechanised boats.

We find cold storage and canning facilities in Mumbai.

Goa:
The state makes a contribution of about 2% to the national production. Almost every village is engaged in fishing along the coast and around the creeks of the Zuari, Mandovi, Sal and Arachol rivers in Goa. The largest hub of fish production in Goa is Mormugao.

Karnataka:
The state accounts for approximately 6% of India's annual total production of fish.

To tap off shore and deep- Sea fishing resources under the Indo Norwegian Project, Landing, processing and canning facilities are established at **Mangalore.**

Kerala:
Kerala has 264 fishing villages along the 590 km-long coastline.

Producers' cooperatives, credit societies and regional marketing societies, and marketing federations, among which the Kerala Fisheries Corporation is the largest deal with most of the fish trade. About 50% of the country's total processing capacity and a liver oil extraction plant are located in Kerala.

60% of the total production is utilised by the state, 22% is dispatched to other states and 18% is exported. Fish are conveyed from Cochin to Chennai by refrigerated railway wagons.

Causes of Backwardness of Indian Fishing Industry:

(i) Excessive fishing to the state of near exhaustion point has devoid many areas of fish, especially in West Bengal, as witnessed by the decline in the catch.

(ii) A consistent shrinkage in fish production has been effectuated by the silting of rivers and ponds, take-over of jhils and other fishery resources by the inhabitants and the neglect of tanks and other sources of water supply.

(iii) Hazards to fish and a threat to lives of fishermen from storms and gales on the sea is considerably higher than in other professions.

(iv)Most of the fish are trapped from October to February/March. But weather or other factors effectuate wide fluctuations in the catch, causing erratic price oscillation.

(v) Modern fishing tools are expensive. The tools are so outdated that they are not suitable for deep-sea fishing. Hence, persons exploit fish resources farther away than 16 km. or in deeper water to a very-limited extent.

(vi) Small fishermen are bereft of money to buy or replace gear nets and boats. They are heavily under debt to the middlemen.

(vii) Many people fish in the same area, leading to the cut-throat competition. It adversely impacts the viability of the fishing industry, leading to the scarcity of ample raw materials, which results in colossal financial losses.

(viii) Fish, one of the most decayable products, are trapped in the sub-tropical climate. So, most of the catch is consumed in areas located in proximity to the coast or in the neighbourhood of the landing places. This restricts the market for fresh fish.

Fisheries Development Programmes:

Fisheries development programmes under the plans have three main objectives, viz.,

(i) Rise in fish production to meet protein requirements,

(ii) enhancement of export potential of fish and fish products, and

(iii) amelioration in the economy of fishermen.

Fisheries development programmes fall into two parts:

(a) Marine fisheries and (b) Inland fisheries.

(a) Marine Fisheries Development:
Schemes of marine fisheries incorporate automation of fishing equipment, exploratory and experimental fishing to discover new realms, modernisation of fishing methods and activities increasing the supply of fishery resources, and furnishing of ample facilities for landing, preservation, conveyance and distribution of fish.

The Government is subsidising the poor fishermen for mechanising their ancient craft which expands the fishing realms and frequency of operation with a resultant surge in catch and income of fishermen.

Small mechanised fishing boat operators with fishing vessels below 20 m length are compensated for their operational expenses by the govt. which reimburses the central excise duty on HSD oil.

Fish Farmers Development Agencies (FFDAs) provide a package of technical, financial and extension support to fish farmers.