

Fisheries Sector

India is the second largest producer of fish in the world contributing to 5.43% of global fish production. India is also a major producer of fish through aquaculture and ranks second in the world after China. The total fish production during 2010-11 (provisional) is at 8.42 million metric tonnes with a contribution of 5.20 million metric tonnes from inland sector and 3.22 million metric tonnes from marine sector respectively. Fisheries being one of the promising sectors of agriculture and allied activities in India, a growth target rate of 6 per cent was fixed by the Union Government so as to achieve the overall growth rate of 4.1 per cent for Agriculture during the 11th Five year Plan. Though there is marginal variation in growth rate of marine fish production the growth rate of inland fish production registered an impressive 5.52 percent during 2009-10. During 2010-11 the volume of fish and fish products exported was 8,13,091 tonnes worth ₹12901.47 crores. As per the estimates of Central Statistical Organization (CSO), the values of GDP from fisheries sector at current price during 2009-10 was ₹52,363 crores which is 4.85 per cent of the total GDP of Agriculture and allied sectors.

Fisheries sector occupies a very important place in the socio-economic development of the country. It has been recognized as a powerful income and employment generator as it stimulates growth of a number of subsidiary industries, and is a source of cheap and nutritious food besides being a foreign exchange earner. Most importantly, it is the source of livelihood for a large section of economically backward population of the country. The main challenges facing fisheries development in the country includes accurate data on assessment of fishery resources and their potential in terms of fish production, development of sustainable technologies for fin and shell fish culture, yield optimization, harvest and post-harvest operations, landing and berthing facilities for fishing vessels and welfare of fishermen.

Aspirations

- Enhancement of fish production – at an annual growth rate of 6%.
- Increasing the per capita consumption of fish to 10-11 kg/annum.
- Empowerment and welfare of fishers.
- Capacity building of fishers, fish farmers and fishery professionals and strengthening of infrastructure.

- Creation of marketing facilities with forward and backward linkages.
- Sustainable management of fishery resources.
- Adequate infrastructure in the form of fishing harbours and fish landing centres.
- Increasing employment generating ability of fisheries sector.
- Strengthening of infrastructure including transport, storage and processing.

Inland fisheries and aquaculture

Aquaculture is the fastest growing food producing sector in the world with an annual growth of around 7 per cent. India is the second largest producer of fish both in total and from aquaculture. Increasing the demand for fish and fishery products would be mostly sourced from aquaculture and culture based capture fisheries in reservoirs as capture fisheries growth world over is stagnant. Issues that need to be addressed for enhancing aquaculture production on a sustainable basis are:

- Intensification of aquaculture in ponds and tanks.
- Increase of the productivity of ponds and reservoirs.
- Usage of derelict water bodies.
- Construction of new ponds and tanks.
- Introduction of culture based capture fisheries in reservoirs.
- Species diversification and introduction of high value commercial species.
- Development of breeding and farming technologies for new indigenous species that have potential for farming and market demand.
- Assess the potential impact of already introduced alien species and if found environment friendly, develop suitable management practices for their farming as is being done in the case of *Litopenaeus vannamei* and *Pangasius sutchi*.
- Small-scale fish farming through cage culture in reservoirs, rivers and irrigation canals.
- Establishment and expansion of fish hatcheries for production of quality fish seed.
- Development and availability of low cost fish feed for different species and farming systems.
- Research on aquatic health management and development of disease resistant strains of fish.
- Production improvement through genetics and biotechnology.
- Encourage fish consumption through awareness on the health benefits of fish and its nutritional security.
- Aquaculture needs to be treated at par with agriculture in terms of water, power tariff, tax benefits, subsidy, insurance and credit.

Marine Fisheries

Harvesting of marine fisheries resources in the country warrants stronger emphasis on invoking technological innovations as well as management paradigms that reconcile livelihood issues with concerns on resource conservation. Global production of fish from marine capture fisheries in the last decade has stagnated gradually and many stocks have been either overexploited or have reached their maximum sustainable yields. Issues that need to be addressed for enhancement of marine fish production are:

- Open sea cage culture of high value fin fishes and shell fishes involving fisher folk as an innovative system that aims to fulfill not only the fascination to farm the seas as a profitable aqua-venture but also as a potential tool for conservation and mariculture.
- Diversification of fishing towards the under exploited deep sea and oceanic resources like tuna, shark, sail fish and allied species.
- Exploitation of perch resources in and around Island waters of Andaman & Nicobar.
- Need to reorient the fisheries management regime for a long-term sustainability of the resources and enhancing the economic efficiency of fishing operations.
- Reduction of fish discards at sea and utilization of such discards for production of value added byproducts.

Important initiatives

- An exclusive body for fisheries development called 'National Fisheries Development Board (NFDB)' was established during September 2006.
- Focused attention on reservoir fisheries through stocking of fingerlings in 3052 reservoirs covering about 15.57 lakhs hectares with an investment of ` 104.45 crore It has been reported that fish production in these reservoirs has significantly increased. High value species like *L. vannamei*, *Pangasius sutchi*, Tilapia etc were introduced as a part of diversification.
- Established Coastal Aquaculture Authority (CAA) for regulation of coastal aquaculture activities.
- Aquatic Quarantine facilities for screening of Specific Pathogen Free (SPF) brood stocks of *L. vannamei*.
- Under the Centrally Sponsored Scheme on Inland Fisheries & Aquaculture 8,04,753 Ha of water area has been developed for pisciculture; 9,44,727 number of fish farmers were trained and 13,49,930 number of fish farmers have been

given financial incentives under Fish Farmers Development Agency (FFDA) for aquaculture.

- In addition assistance was provided for development of 8000 hectares of ponds and tanks for undertaking intensive aquaculture through National Fisheries Development Board (NFDB).
- 41,221 ha area has been brought under shrimp culture and 33,999 shrimp farmers have been trained on shrimp farming.
- Established 40 new fish seed hatcheries and 33 hatcheries have been renovated/ upgraded.
- *In-situ* pen and cage rearing of fish seed has been taken up in all the States including UTs under recently launched scheme of National Mission for Protein Supplements (NMPS).
- Open sea Cage culture of Marine Fin fish piloted through the Central Marine Fisheries Research Institute and various high value species like Sea bass, Cobia, Etroplus etc are being cultured.
- Commercial demonstrations on culture of sea bass and lobsters in 50 cages along Karnataka and Tamil Nadu coasts is proposed.
- With a view to promote production of Sashimi grade Tuna, Fish processing facility of National Institute of Fish Post Harvest Technology and Training (NIFPHATT), a subordinate office of Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture at Kochi and Vishakhapatnam has been modernized at an investment of ₹. 2.40 crores and ₹. 1.85 crores respectively.
- Under the Centrally Sponsored Scheme (CSS) on Marine Fisheries seven major fishing harbours (FH), 45 minor fishing harbours and 180 fish landing centers have been constructed and commissioned. Besides, another 25 minor FHs and 16 FLCs are under construction.
- 24 fishing harbors/fish landing centres are being modernized in Karnataka, Kerala, Andhra Pradesh, Tamil Nadu, Orissa and Gujarat at a cost of ₹. 48.92 crores.
- Modernization of 80 Wholesale fish markets and 44 retails markets and 45 retail fish outlets and 20 Kiosks with investment of ₹ 95.86 crores
- A fish net making plant has been constructed by Matsyafed, Kerala through financial support from National Fisheries Development Board (NFDB).
- 1813 Ornamental fishes unit have been established in Kerala, Andhra Pradesh and Maharashtra with an investment of ₹ 10.89 crores.
- Under the Central Sector scheme on Strengthening of Data Base, Marine census, mapping of water bodies and publication of E-Atlas have been undertaken in 12 States.
- Development of Coastal Fisheries through improved design of craft, motorization of traditional craft and promoting safety at sea.

- The Expert group on Revalidation of Marine Fishery Resource (2011) has revalidated marine resource as 4.41 million metric tonnes.
- Marine fishery census has been completed.

Strategic initiatives and schemes required:

- a. Enhancement of Fish production and productivity for ensuring sustainability limited to aquaculture sector taking into consideration of major inputs like quality and healthy fish seeds, feed.etc and promising species.
- b. Adoption of culture based capture fisheries in reservoirs and under- utilized larger water bodies.
- c. Diversification of marine fishing activities to tap the deep sea and under utilized resources, multiday fishing, species-specific fisheries, utilization of by catch etc.
- d. Networking of all line Departments/organizations dealing with fisheries under a single agency.
- e. Comprehensive policies for treating Aquaculture at par with Agriculture, and enactment of Marine and Inland Bills.
- f. Revamping of FFDA's and involvement of Cooperative Societies and Self Help Groups (SHGs) and ensuring the Socio economic welfare of fisher folk.
- g. Post harvest, value addition and marketing infrastructure.

Key priority areas

1. Enhance production and productivity of the existing water bodies by developing technologies for intensive culture, integrated aquaculture, broodbank development, creating new hatcheries, nurseries, feed mills, diagnostic laboratories etc.
2. Tap the marine resources in the Exclusive Economic Zone (EEZ) and high seas in a sustainable manner.
3. Create adequate post harvest infrastructure.
4. To treat aquaculture at par with agriculture.
5. Establish schemes for processing of fish hygienically to produce consumer friendly fish/ fish products.
6. All organizations dealing with fish and fisheries should be brought under a single umbrella.

Fishery Resources

| Marine | |
|---|-----------|
| Length of coast line (Km) | 8118 |
| Exclusive Economic Zone (EEZ) million Sq Km | 2.02 |
| Continental Shelf ('000 sq km) | 530 |
| Number of Fish Landing Centres | 1,376 |
| No of Fishing villages | 3,322 |
| No of fishermen families | 7,64,868 |
| Fisher-folk population | 35,74,704 |
| Inland | |
| Total inland water bodies (lakh Ha) | 73.59 |
| Rivers & canals (Km) | 1,95,210 |
| Reservoirs (Lakh ha) | 29.07 |
| Tanks & ponds (lakh Ha) | 24.14 |
| Flood plain lakes/derelict waters (lakh Ha) | 7.98 |
| Brackish water (lakh Ha) | 12.40 |

FFDAs & BFDAs. (cumulative achievement since inception)

| | |
|---|-----------|
| No of Fish Farmers Development Agencies (FFDAs) | 429 |
| Water area covered under FFDA (Ha) | 8,04,753 |
| No of Fish farmers trained under FFDA | 9,44,727 |
| No of beneficiaries under FFDA | 13,49,930 |
| Average productivity reported (Kg/Ha/year)-FFDA | 2,900 |
| No of Brackishwater Fish Farmers Development Agencies (BFDAs) | 39 |
| Water area covered under BFDA (Ha) | 41,221 |
| No of Fish farmers trained under BFDA | 33,999 |
| No of beneficiaries under BFDA | 32,524 |
| Average productivity reported (Kg/Ha/year)-BFDA | 1,380 |

Fish Production

(lakh tonnes)

| Year | Marine | Inland | Total |
|-----------------|--------|--------|-------|
| 1991-92 | 24.47 | 17.10 | 41.57 |
| 1992-93 | 25.76 | 17.89 | 43.65 |
| 1993-94 | 26.49 | 19.95 | 46.44 |
| 1994-95 | 26.92 | 20.97 | 47.89 |
| 1995-96 | 27.07 | 22.42 | 49.49 |
| 1996-97 | 29.67 | 23.81 | 53.48 |
| 1997-98 | 29.50 | 24.38 | 53.88 |
| 1998-99 | 26.96 | 26.02 | 52.98 |
| 1999-00 | 28.52 | 28.23 | 56.75 |
| 2000-01 | 28.11 | 28.45 | 56.56 |
| 2001-02 | 28.30 | 31.26 | 59.56 |
| 2002-03 | 29.90 | 32.10 | 62.00 |
| 2003-04 | 29.41 | 34.58 | 63.99 |
| 2004-05 | 27.78 | 35.26 | 63.04 |
| 2005-06 | 28.16 | 37.55 | 65.71 |
| 2006-07 | 30.24 | 38.45 | 68.69 |
| 2007-08 | 29.29 | 42.07 | 71.26 |
| 2008-09 | 29.78 | 46.38 | 76.16 |
| 2009-10 | 31.04 | 48.94 | 79.98 |
| 2010-11(p) | 32.25 | 51.98 | 84.23 |
| (p) Provisional | | | |