

## CHAPTER 5 FISHING

### Coverage

5.1 The activities covered in the fishing sector are (i) commercial fishing in (a) ocean, coastal and offshore waters and (b) inland waters, that include catching, tackling and gathering of fish from rivers, irrigation and other canals, lakes, tanks, fields inundated tracts etc., (ii) subsistence fishing in land waters and artificial ponds, (iii) gathering of sea weeds, sea shells, pearls, sponges and other ocean and coastal water products and (iv) fish curing viz., salting and sundrying of fish.

### Methodology and Source material

5.2 The GVA from this sector is estimated by using the production approach. This involves the estimation of the total value of output at factor cost and deducting therefrom the various inputs at purchasers' prices which are used in the process of production. The data on production, prices and disposition of fish are supplied by the State Fisheries Departments (SFDs).

### Estimates at Current Prices

#### Value of output

5.3 **Marine fish:** Data on estimated landings of marine fish, prices and value of fish catch are directly obtained from the SFDs of maritime states/union territories. For the estimation of marine fish production almost all maritime states are following some kind of statistical sampling design except the state of Karnataka, where complete enumeration method is followed. The states of Tamil Nadu and Maharashtra are following multistage stratified sampling designs involving stratification in space and time viz., landing centres and days respectively. Gujarat is following a stratified systematic sampling procedure. Kerala has adopted a stratified two stage sampling design with marine districts as the strata.

5.4 **Inland fish:** The data on inland fish production are also supplied by the SFDs except in the case of Assam & West Bengal where production estimates are prepared by the respective DESs. As in the case of marine fish production, various approaches are adopted by the states for the estimation of inland fish production. By and large the estimates are prepared on the basis of market arrivals of fish or on the basis of surveys conducted in selected landing centres. However, some states like Karnataka, Madhya Pradesh, Tamil Nadu and Uttar Pradesh have taken up surveys under a centrally sponsored scheme for standardising the methodology of estimation of inland fish production. In West Bengal and Assam the inland fish production estimates are based on consumption data. For example in Assam the estimates are based on the consumption norms and the estimated fish consuming population available through 38th round Jan.-Dec. 1983 of NSSO. The per-capita monthly consumption norms of dry as well as fresh fish as available from the NSSO for rural and urban areas have been used for estimating the annual consumption. These consumption estimates are adjusted for imports/exports for arriving at the state production. The bench mark estimates are projected for the subsequent years using the annual estimated population.

5.5 **Subsistence fishing:** Direct estimates of production from subsistence fishing i.e., fish caught by non-professional fishermen are available from a few states only viz., Himachal Pradesh, Kerala, West Bengal, Andaman & Nicobar, Madhya Pradesh, Manipur and Mizoram. However, the inland fish production estimates supplied by Haryana, Punjab, Orissa, Tripura, Goa, and Gujarat are inclusive of subsistence fishing. Some of the SFDs have attempted to estimate the subsistence fish production through some ad-hoc enquiries. Data collected through local enquiries by SFD Karnataka, show that value of

subsistence fish forms 12.5 per cent of the value of output of inland fish in the state. In the case of Tamil Nadu and Uttar Pradesh, the corresponding percentages suggested by the DESs in consultation with the SFDs are 2.5 and 8.7 respectively. The percentage of 12.5 being at the average level, is presently adopted for the remaining states for which no independent information is available.

5.6 For working out the value of output, the average annual auction prices of marine fish (species wise) collected by the SFDs at the landing centres alongwith production are made use of. The inland fish prices reported by the SFDs are generally the assembling centre prices. These are duly adjusted for TTMs so as to conform to producer prices. The subsistence fish is evaluated at the inland fish price, unless otherwise provided.

5.7 **Fish curing:** Most of the maritime states are resorting to the allied activities of fish curing, which include salting and sun-drying. The quantities and prices of fish let-in and let-out for fish curing and the value of salt used are by and large available on an annual basis from the SFDs.

### Value of input

5.8 In the absence of any data based on scientific studies, it has been assumed after consultation with the Joint Commissioner of Fisheries, that in the case of marine fish and inland fish, the operational costs and repairs and maintenance form 10 per cent and 6 per cent respectively of the corresponding value of output. Operational costs broadly include expenditure on boats (mechanised and non-mechanised), trawlers, liners, fishing gears, gillnets, trawlnets, castnets, traps, other bagnets, consumption of diesel oil etc. In the case of subsistence fishing, an allowance of 1 per cent of value of output is made (arbitrarily) for operational costs and repairs and maintenance.

5.9 **Other products:** Data on producer prices and value of output in respect of gathering of pearls, chanks, oysters, sea-weeds, lime-shells, sea-shells etc., are not available. However, estimates of GVA by these activities are available for a few states like Kerala, Tamil Nadu, Gujarat, Andaman & Nicobar Islands and Pondicherry on annual basis. For the remaining states the estimates are arrived at, by multiplying the estimated number of persons engaged in these activities with the corresponding value added per person. The estimated number of persons is arrived by moving the 1981 census working force data using the compound growth rate observed between 1971 and 1981 censuses. As regards the value added per person, the estimate of Kerala is used for other maritime states. For the land-bound states, the value added per person is arbitrarily taken as one third of that in Kerala.

5.10 The value of output of fishing is worked out at state level. However, the details of estimates of value added for 1980-81 at all India level are given in Table 5.1.

### Estimates at Constant Prices

5.11 The current catch of marine fish, inland fish and subsistence fish are valued at 1980-81 prices for the estimation of the output at constant prices. Similar treatment is given to data on fish curing also. The value of pearls, chanks etc., at current prices is deflated by the ratio of output of marine fish at constant prices over current prices to arrive at the value at constant prices. The same proportions of expenditure on operational costs and repairs & maintenance to total output as for estimates at current prices have been used to obtain corresponding estimates of value added at constant prices.

### Quality and limitations of Data base

5.12 State-wise annual estimates of production of fish are available from the various SFDs. As already mentioned, most of the states are following scientific procedures for the estimation of marine fish production. However, due to differences in procedures of sampling, the estimates of various states are at different levels of efficiency. It is high

time for the SFDs to adopt a uniform procedure for the estimation of marine fish production. The sampling design developed by the Central Marine Fisheries Research Institute should serve as a standard for this purpose. Unlike marine fish production estimates, the inland fish production estimates prepared by the SFDs are based on very crude methodologies. As regards subsistence fishing, no reliable data are available and the methods followed for the estimation at state level are very tentative.

5.13 The data on collection of pearls, chanks, weeds etc., on a regular basis are available only for a few states. The estimates of this activity for other states are prepared on the basis of working force and approximate measure of per person value added.

5.14 No appropriate official mechanism exists in the states for collecting reliable data on the activity of fish curing. Maharashtra is carrying out some enquiries on sample basis for estimating the utilisation of fish for various purposes. Gujarat through its SFD is collecting utilisation data from district offices and quantity of fish cured from the manufacturers of fish meal etc. Kerala SFD collects data on quantity and value of fish cured/dried in the state periodically through their field staff. Tamil Nadu is resorting to the application of fixed ratios for arriving at the quantities of fish let-in and let-out.

5.15 The proportion used for preparing estimates of operational costs and expenditure on repairs and maintenance is not based on any scientific enquiries. Some information on expenditure on repairs, maintenance of boats and nets by types, average cost of boats, number of boats etc., available with the states have been analysed. The results show wide variations amongst states and a meaningful ratio at national level could not be arrived at for adoption.

**TABLE 5.1: Value added from Fishing, 1980-81**

	Item	Production (00' mt)	Value (Rs.crores)
1	Value of output		992
1.1	Inland fish	9477	516
1.2	Marine fish	15091*	437@
1.3	Subsistence fish		39
2	Less repairs, maintenance and other operational costs		75
3	Gross value added from fishing operations		917
4	Gross value added from gathering of pearls, chanks & other products		4
5	Gross value added (items 3 & 4)		921
6	less consumption of fixed capital		115
7	Net value added		806

\* - Includes quantity let-in for fish curing.

@ - Includes value of cured fish.