

CHAPTER III FISHING

Coverage

3.1. The activities included in this sector are commercial fishing in (i) ocean, coastal and off-shore waters, and (ii) inland waters, which include catching, tackling and gathering of fish from rivers, irrigation and other canals, lakes, tanks, inundated tracts etc. Also included are gathering of sea-weeds, sea shells, pearls, sponges and other ocean and coastal water products and subsistence fishing and exploitation of uncultivated plant life in inland waters and artificial ponds. Fish curing, viz., salting and sundrying of fish is also taken as falling within this sector.

Methodology and Source Material

Estimates at current prices

3.2. The production approach is followed to estimate the gross/net value added.

Value of output

3.3. *Commercial fishing.*—The estimates of value of output of fish are worked out separately for marine and inland fish at the state level. The data on estimated landings of marine fish by states/union territories are directly obtained from the Central Marine Fisheries Research Institute, (CMFRI), Cochin except for Maharashtra, Kerala, Gujarat, Pondicherry and Goa, Daman and Diu. For the latter, the estimates published by the State Fisheries Departments (SFDs) are adopted due to their better coverage. Data on annual production of inland fish are obtained directly from the respective SFDs except for Assam, W.B. and Bihar for which production estimates are made by the respective SSBs.

3.4. *Subsistence fishing.*—No objective enquiry has so far been conducted for preparation of the estimates of subsistence fishing and the estimates are based on scanty material available for different States. Thus data collected through local enquiries by SFD, Karnataka, shows that this forms 12.5 p.c. of the value of output of inland fish in the State. In the case of M.P., T.N., U.P. and Kerala, the percentages used are 2.5, 2.5, 8.7 and 25.0 respectively, which are based on details provided by the SSBs in consultation with their SFDs. The production estimates supplied by Haryana, H.P., Punjab, W.B., Tripura and Goa, Daman and Diu are inclusive of subsistence fishing. SSB, Manipur supplies separate data on production and price of subsistence fish catch. For the present estimates the percentage available for Karnataka is adopted for

all those States for which no independent information is available.

Value of inputs

3.5. In the absence of any data through sample survey, after consultation with the Joint Commissioner of Fisheries it has been assumed that in the case of marine fish (i) operational costs and repairs and maintenance and (ii) consumption of fixed capital, each forms 10 p.c. of the value of output. For inland water fish, it is assumed that operational costs and repairs and maintenance form 6 p.c. and consumption of fixed capital forms 4 p.c. of the value of output. In the case of subsistence fishing no allowance is made for consumption of fixed capital, while an allowance of 1 p.c. of the value of output is made (arbitrarily) for operational costs and repairs and maintenance.

3.6. *Value added from fish curing.*—Unpublished data on value added per tonne of fish cured received directly from the SFDs of all the maritime states are used in preparing the estimates for fish curing. Consumption of fixed capital is assumed to be nil.

3.7. *Value added from other products.*—Current data on net value added from gathering of pearls, chanks, oysters, sea-weeds, lime-shells, sea-shells etc., are available for Kerala, TN, and Pondicherry only. For the remaining states, the estimates of net value added are arrived at by multiplying the estimated number of persons engaged in such activities by the net value added per person. The annual number of persons engaged in gathering of pearls and other sea products, are estimated using the compound growth rate observed between 1951 and 1961 censuses, to the 1961 census working force engaged in these activities of the fishing sector²⁶. As regards net value added per worker engaged in such activities the estimate of Kerala is used for other maritime states. For the land bound states, the net value added per person from this activity is arbitrarily taken as the one-third of that in Kerala. Consumption of fixed capital is assumed to be nil.

3.8. There are a number of minor inland water products which should also be taken into account. In the absence of any information on the production of water-nuts, lotus stalks, lotus seeds and other types of plants, frogs, lobsters, tortoise meat, tortoise shell, etc., no attempt is made to estimate the values involved.

²⁶ The statewise comparable estimates of workers by industry group for 1961 and 1971 censuses are under preparation and on the basis of geometric growth rates observed between these two censuses, the estimates of value added from gathering of pearls, etc. in case of these States will be revised.

Estimates at constant prices

3.9. For estimates of the value of output at constant prices, the current catch of marine fish, inland fish and fish for subsistence are valued at the 1970-71 prices. The same proportions of expenditure on operational costs, repairs and maintenance and consumption of fixed capital to total value of output as for estimates of current prices have been used to obtain corresponding estimates of values added.

3.10. The value added by fish curing in the base year is projected to later years in proportion to the changes in the quantity of fish cured in the current year relative to the base year. Value added from the collection of sea weeds, shells, pearls and chanks for Pondicherry, W.B., Kerala and T.N. is estimated by evaluating the different products at 1970-71 prices. For the remaining states, the estimates at constant prices are obtained using the working force for the current year engaged in these activities and their average earnings in the base year.

Reliability, Objectivity and Current Status of Data

Output

3.11. Statewise annual estimates of production and salting and sun drying of fish are available from CMFRI, SFDs and SSBs in the States of Kerala, Karnataka, T.N., Maharashtra, Gujarat, A.P., W.B. and Orissa. Production estimates of CMFRI are based on observations distributed over space and time reasonably. For the purpose the entire coastal area is divided into a number of zones containing geographically contiguous landing centres and actual observations are recorded over a period of ten days. Different estimation techniques are adopted by SFDs. The estimates prepared by T.N. and Maharashtra are based on annual sample surveys on coastal areas and those of Karnataka and A.P. are prepared on the basis of information collected from important landing centres. The estimates of SFD Gujarat are largely based on royalty on export of fish after making adjustment for local consumption. In Orissa, the SFD estimates are based on fish sales transacted in municipal markets and the data collected on fish crafts, number of fishermen, average landing etc., available from 'Techno-Economic Survey of Orissa, 1962' by the National Council of Applied Economic Research (NCAER). The estimates for W.B. are based on consumption of fish as available from the 'Family Budget Enquiry in 26 Towns of West Bengal including Calcutta, 1959-60 & 1960-61' (Bureau of Economics & Statistics.

West Bengal, 1969) and the 'Consumption and Housing Survey, 1968' (Bureau of Economics & Statistics, West Bengal). In the case of Assam, the estimates are based on consumption data provided by NSS (25th round) and family budget survey.

3.12. The estimates of production of inland fish in all the states except W.B. and Assam are prepared on the basis of market arrivals of fish. In W.B. and Assam these estimates are based on consumption data. The estimates of catch of inland fish are unsatisfactory as these are generally not based on any objective method. Studies to evolve a proper estimation technique have been conducted in the states of W.B., A.P., T.N. and Orissa by the Indian Statistical Institute (ISI) and NSS but no satisfactory approach has as yet been evolved. As regards subsistence fishing no reliable data are available and the method followed for preparation of the estimates is very approximate.

3.13. The data on collection of pearls, chanks, weeds etc., are not available for any State except Kerala. The estimates for this activity for other states are prepared on the basis of working force and approximate measure of per person output. As such, the estimates have no satisfactory basis.

Prices

3.14. Data on average wholesale prices of fish are available for the important centres in respect of most of the States. These prices, however, cover very few varieties of fish. As such, the average prices worked out at present are not fully representative.

3.15. The annual data on production and prices relating to marine and inland fish and data on pearls, chanks etc., are normally made available by the authorities concerned with a time lag of about 6-12 months after the close of the financial year and as such, these may be considered to be reasonably up to date.

Inputs

3.16. The proportions used for preparing estimates of operational costs, expenditure on repairs and maintenance and consumption of fixed capital are not based on any scientific enquiry. Some information on expenditure on repairs, maintenance of boats and nets by types, average cost of boats, number of boats etc., as available with the states have been analysed. These results show wide variations amongst States and as such have been used only after overall adjustments.