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**Don't give a man a fish. But, teach him fishing- a Chinese Proverb**

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**c. Fisheries**

**xii. Fisheries in beels, fresh water prawns, ornamental fisheries**

Despite high potential for production of fish, Assam is deficient in fish production and presently fish is imported from other States like AP, UP, West Bengal and Bihar. The hypsographic profile and the river systems of Assam reveal rich repository of aquatic resources that have great potential for development. The fisheries resource of Assam comprises three important river basins viz., Brahmaputra, Barak and their tributaries. There is potential for producing both the cold and warm water fisheries. The water resources of Assam can be further classified into lakes and beels [over one lakh ha], tanks and ponds [about 26000 ha]. The state with two major river systems, several beels, lakes, tanks/ ponds and swamps is endowed with valuable fishery resources. Comprehensive development of these water resources calls for identification of potential, proper planning and phasing.

Beels are major fishery resources contributing to about 25 % of the fish production in Assam. However, major portions have been rendered unproductive due to excessive siltation and growth of weeds and only about 33 % of the potential is being utilised for fisheries.

Though nearly 62% of the tank/pond area is being utilized for fish culture, the productivity levels are very low [1200 kg/ha/year as against 3000 to 4000 kg/ ha/ year]. Barring a limited area in the hill districts, the entire state offers suitable climate for composite fish culture. About 15000 ha out of existing tank/pond and low lying areas could be brought under semi-intensive aquaculture. Paddy cum fish culture **is yet another area where considerable potential exists for development in Assam.**

Ornamental fish breeding and culture is increasingly catching attention of fish farmer entrepreneurs in other states. This has great export potential. Assam also offers considerable potential for development of ornamental fisheries for export market. The major markets are USA, Europe and Japan. Singapore is the hub centre of ornamental fish export trade. However, in Assam, presently the production is mainly from wild collection and very little culture operations are undertaken.

Monoculture of fresh water prawn or polyculture with fish is highly profitable, and is compatible with the State's agro climatic conditions. Fresh water prawn has good domestic as well as overseas market.

Development of beels could be achieved by desiltation, deepening of connecting canals, dewatering and suitable changes in leasing policies. The production potential of beels could be increased to 1000 to 1500 kg/ ha through scientific management. Therefore, suitable developmental initiatives through ecological aquaculture would need to be adopted for development of beels for fisheries. Identification and survey of potential of beels from the point of view of biomass potential, flood effects, free from pollutants,

ownership arrangements, etc., would be the first step in development of fisheries in Assam. The private entrepreneurs should be encouraged to take up fisheries in beels by providing long term lease. Perhaps, SHGs/JLGs/FMCs could be encouraged to take up beel fisheries development with certain incentives. A chart indicating the broad areas in developing beels for development of fisheries in Assam is given in Exhibit-13.

In addition to the existing water bodies, low lying/ water logged lands and brick klin areas under private ownership can be developed into fish ponds with less investments for scientific fish culture. Semi- intensive to intensive culture systems can be practised in such newly created water bodies by the private entrepreneurs. Location specific projects are required to be prepared in such cases where prospective entrepreneurs come forward with suitable proposals. A chart indicating the broad areas in developing ponds for development of fisheries in Assam is given in Exhibit-14.

Development of ornamental fisheries requires measures involving sustainable exploitation of the existing natural resources and breeding of native and exotic varieties under controlled conditions. The ultimate aim is to develop quality ornamental fishes both for the export and indigenous market from Assam. Stocking of large varieties of ornamental fish in adequate quantities throughout the year is a pre-requisite for exporting directly to the potential destination markets. It is estimated that atleast 50 varieties of fish should be available to start an effective export business and to realise competitive prices. In order to take advantage of the availability of a large number of varieties, a strong supply chain needs to be established starting from fish collectors, agents, dealers and exporters. Further, suitable breeding facilities for exotic and indigenous ornamental fish may be created in areas having favourable climatic conditions and adequate availability of unpolluted water.

I. Awareness creation of the fishermen is of prime importance in order to prevent precious native ornamental fishes being sold as food fish at throwaway prices. The SHG concept of NABARD is a potent tool for organising fishermen and fish collectors at the grassroots level for creation of awareness on the potential of the sector. Such a forum would help in imparting training on the potential native ornamental fishes and methods of catching, packaging and transporting without damage and injury. It is also ideal for organising people involved in collection of fish from wild, so that they can be imparted knowledge on the different varieties of ornamental fish. Fish collected can be stocked in holding tanks managed by a Group and can be either directly transported to exporters or to local ornamental fish traders.

II. A chart indicating the broad areas in developing ornamental fisheries in Assam is given in Exhibit-15.

Culture of fresh water prawn has been successfully taken up in Tripura and can be introduced in Assam. For this purpose, steps should be initiated for import of prawn seed from neighbouring states for culture in government farms for the purpose of demonstration. Private entrepreneurs should be encouraged for undertaking polyculture of prawn with fish. A chart indicating the broad areas in developing fresh water prawn under fisheries sector in Assam is given in Exhibit-16.

The extension arrangements are inadequate for dissemination of scientific technology to the field level. In order to bridge the gap between the requirement of extension services at the ground level and the services presently rendered by the Government, there is a need to develop suitable extension mechanism through the NGOs who possess the required expertise for motivating the technically qualified youth.