

Technology Transfer Programmes for the Upliftment of Fisherfolk in Andhra Pradesh

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Extension plays a substantial role in the process of innovation dissemination. The Research Centre of Central Institute of Fisheries Technology at Visakhapatnam has been involved in the conduct of several technology transfer programmes for the traditional fisherfolk along the east coast of India, especially in Andhra Pradesh. The extension methods include, conducting training programmes, demonstrations, arranging exhibitions, observing national days, issue of technical pamphlets, field visits, answering technical queries, undertaking technical consultancies, arranging press releases, radio talks, etc. This paper deals with the technology transfer efforts undertaken by the Visakhapatnam Research Centre, for the socio-economic upliftment of marine fisherfolk, especially the programmes covered under the village adoption scheme at Pedajalaripeta in Visakhapatnam district and the operational experiences gained in terms of extent of participation of fisherfolk in the programmes, impact of technology transfer efforts, linkages developed with other research and development agencies and some of the areas of concern in the innovation dissemination process. The general profile of the fisherfolk in Andhra Pradesh, their socio-economic status, felt and unmet needs and the technological, socio-economic and institutional constraints as expressed by the fisherfolk have also been presented in this paper.

Key words: Fisheries development, technology transfer, Andhra Pradesh

Fisheries development efforts in the context of new economic policy have to face great challenges to meet the resource sustainability and quality standards

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for both foreign and domestic markets (Srinath, 2004). In order to improve the quality of fish and fish products, right type of fishing as well as hygiene and sanitation in fish handling at grass root levels have to be improved and fisherfolk need to be equipped with the required knowledge and skills for value addition and product diversification. The technology to be transferred successfully and adopted by the people, needs to be economically superior to the existing practice, feasible in terms of natural resources, raw materials and infrastructure. It is not the lack of technology but the method of implementation, which hinders development activities, particularly in the rural areas.

Extension is the effective use of developmental mechanism as educational means for changing the mind and action of people in such a way that they 'help themselves' to attain economic and social improvements. The Research Centre of Central Institute of Fisheries Technology at Visakhapatnam has been involved in the conduct of several technology transfer programmes for the traditional fisherfolk along the east coast, especially in Andhra Pradesh, the adoption of which can help in additional income generation, creation of employment opportunities for rural youth and women, optimum utilization of catches, better and speedy harvesting and minimization of post harvest losses.

General profile of fisherfolk in Andhra Pradesh

Andhra Pradesh has a total geographical area of 2,75,000 sq. km, with 23 districts, 78 revenue divisions, 1123 mandals/blocks. As per 1993 livestock census, the total fishermen population is 8,71,709 (Anon, 1999). There are 9 coastal districts with 508 marine fishing villages. The various fishing communities found in the state are *agnikula kshatriya*, *jalari*, *vadabalija*, *besta*, *vaddi*, *neyyala*, *gundla* and others. Out of the total fishermen population, only 62.8% are engaged in fishing and other related activities. Among the working fishermen, 36.75% are engaged in full time fishing, 19.05% part time fishing, 22.3% market fish, 10.3% are engaged in boat carving, net making, etc., 5.9% are engaged in processing, drying, curing of fish and 5.85% participate in other fish based avocations (Rao, 2001).

In Andhra Pradesh, Visakhapatnam occupies a prominent place in fisheries sector with 134 km long coastline with 61 coastal fishing villages and 58 fish landing centres, with a total fishermen population of 0.101 million. There are about 22,464 active fishermen engaged in marine fishing activities and nearly 32,500 fishermen engaged in allied fishing activities such as fish vending, net mending, transportation, etc. (Source : Office of the Asst. Director of Fisheries, Visakhapatnam).

Technological, socio-economic and institutional constraints

The technological constraints were the lack of awareness of the available technologies and lack of actual adoption. The socio-economic constraints were the low level of literacy, lack of gainful subsidiary occupation, low income, lack of financial assistance and distress sale of fish to moneylenders (Muralidharan, 2004). The institutional constraints included lack of access to institutional finance, low level of participation in social organizations, lack of contact with extension agency, lack of group activity and lack of organised market structure.

Technology transfer programmes through village adoption

Village adoption is an effective instrument for fisherfolk empowerment. The front line extension approach of ICAR aims at technology assessment, refinement and transfer in selected localities. Following this approach, CIFT adopts villages through its headquarters and research centres for a period of one or two years and organizes training and demonstration programmes (Srinath, 2004). CIFT has covered Azheekkal, Chellanam and Kandakkadavu in Cochin, Kasaba in Kasaragod, Kurumkel in Burla, Sutrapada in Veraval and Pedajalaripeta in Visakhapatnam under village adoption programme.

The programmes at Pedajalaripeta were inaugurated on 18th October 2001 focussing on imparting training and technical know-how in fishing, fish processing and hygienic handling of fish. In order to improve the quality of fish and fish products, hygiene and sanitation in fish handling at grass root levels have to be improved, and the fisherfolk need to be equipped with the required knowledge and skills. The programme primarily focussed on women, who have important role in fish handling and marketing. Major emphasis was given on training women in fish handling and marketing by focussing on factors like hygiene, rack drying, icing and other preservation methods, preparation of value-added products, eco-friendly waste disposal and environmental improvement.

General profile of the village, Pedajalaripeta

The coastal village Pedajalaripeta is located within the urban limit of Visakhapatnam. It has a total population of 8128, with 3184 male, 2691 female and 2253 children. The fishermen population is 6459, which is about 80% of the total population of the village. About 85% of the working population is actively engaged in artisanal fishing. The rest of the working population is engaged in fishery based activities such as crew in mechanized fishing vessels, loading and unloading workers in fishing harbour, fish vending, construction of

FRP canoes and non-fishery activities. There are in total 1136 households, majority of which are concrete houses. There is a Fishermen Welfare Association with a membership of 20, engaged in social activities and organizing literacy programmes through 'night schools' for the literally backward fisherfolk. Eight women self help groups (SHGs) with a membership strength of 16 each, are functioning in the village, imparting training on tailoring, embroidery and other employment generation activities. The infrastructural facilities like approach roads, electricity, community hall, school, transportation and communication facilities are available.

The types of crafts included non-motorized FRP canoes, motorized FRP canoes, and wooden catamarans. Types of fishing gears included, hooks and lines, trammel nets and gill nets. The major catch comprised of tunas, seerfishes, sharks and sailfishes. Processing and rack drying facilities were not available. The general hygiene and sanitation conditions and post harvest handling were very poor. There was no shelter, landing platform, source of potable water and ice at the landing centre. The infrastructural facilities very much needed in the village are shelter, raised platform and source of ice at the landing centre, rack drying structures, solar driers and cold storage facilities.

The felt needs as expressed by the fisherfolk were the monetary needs for investment in income generation activities, basic amenities and employment opportunities for their wards. The technological and training needs on fishery technologies, viz., maintenance of fishing crafts, post harvest fish handling and preservation methods, hygienic drying, packaging and product diversification, are mostly unfelt.

Technology transfer efforts undertaken at Pedajalaripeta

Training programmes on preparation of value added fish products like fish wafers, fish and prawn pickle were conducted at regular intervals to create awareness on the importance of value addition and product diversification. Selected fisherwomen and youth from this village were trained under the Department of Food Processing Industries-sponsored training programmes on the subjects Post-harvest Fish Handling and Preservation Techniques, and Production of Value-added Fish Products. An amount of Rs.720 per participant was paid as stipend for the training period of six days.

Field days, lectures and demonstrations on hygienic handling, icing and other preservation methods were conducted at frequent intervals. Palm Impression Technique, a simple participatory technique was demonstrated at beach landing

centre to create awareness on hygiene and sanitation among fish handlers. Women in Agriculture Day is observed on 4th December every year, at this village. Ice boxes and drying mats were distributed to the selected fisherfolk from this village for demonstration purpose and to make them realize the significance of the use of such inputs. Educationally qualified fisher youth from this village were provided employment opportunities as data entry operators and as field level helper for data collection under the NATP and ICAR sponsored research projects. All the programmes conducted at this village were given wide coverage through print and electronic media.

Impact of technology transfer efforts

Positive attitudinal change among the primary fish handlers, especially towards hygiene and sanitation through the demonstration of palm impression technique, increased level of awareness on the availability of technologies for value addition, improved skill, change of unfelt need into felt need, increased level of social participation and the linkages developed with other institutions, are some of the impacts which could be realized during the technology transfer efforts.

Linkages developed

In addition to the technology transfer programmes conducted exclusively by the Research Centre, most of the programmes were conducted in coordination with other departments. During the course of technology transfer programmes, linkages were developed with institutions, viz., State Departments of Fisheries (Governments of Andhra Pradesh, Orissa and West Bengal), Department of Food Processing Industries, District Rural Development Agency, Marine Products Export Development Authority, other Research and Development Institutes, Non Governmental Organizations and Fishermen Associations.

Areas of concern in the innovation dissemination process

Some of the areas of concern in the innovation dissemination process were low level of literacy, lack of access to information sources, lack of mass media exposure, lack of input supply to support adoption, lack of marketing facilities, lack of awareness on available development schemes and technologies, etc.

Expansion of non-formal education, empowerment of women through promotion of rural women entrepreneurship, increased involvement of NGOs, market promotion through co-operatives and NGOs, selection of technology

transfer programmes by taking into consideration the availability of local resources, integrated approach, formation of women demand groups and the need of DWCRA self help groups to take initiative in utilizing the technologies particularly for fisherwomen, are some of the immediate requirements.

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