

## **Importance of Inland Fisheries Promotion for Sustainable Livelihoods in Rainfed Regions of India<sup>1</sup>**

### **Introduction**

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.

According to estimates of the Central Statistical Organization (CSO), the value of output from livestock and fisheries sectors together at current prices was about Rs.2, 82,779 crore during 2007-08 (Rs.2, 40,601 crore for livestock sector and Rs.42, 178 crore for fisheries) which is about 31.6 per cent of the value of the output of Rs.8, 94,420 crore from Agriculture & allied Sector. The contribution of these sectors in the total GDP during 2007-08 was 5.21 %.( DAHD, 2009). India is now the third largest producer of fish and the second largest producer of fresh water fish in the world. Fish production has increased from 4.16 million tonnes (2.45 million tonnes for marine and 1.71 million tonnes for inland fisheries) in 1991- 92 to 7.12 million tonnes (2.92 million tonnes for marine and 4.20 million tonnes for inland fisheries) in 2007-08. Fish production during the year 2008-09 was 76.2 lakh tonnes comprising 29.8 lakh tonnes of marine fish and 46.4 lakh tonnes of inland fish. Fisheries sector contributes significantly to the national economy while providing livelihood to approximately 14.49 million people in the country.

India is known for its inland fishery resources and once with rich indigenous fishery resources with great biodiversity. The poor inland fishers and rural community depended for their livelihood and food security on these indigenous species. India has vast inland fishery resources in the form of rivers and canals (195210 km),reservoirs (2-94 million ha), tanks and ponds (2.41 million ha), floodplain.lakes and derelict waters(0.79 million ha), offering tremendous scope for fish production.(DAHD&F, Ministry of agriculture Govt. of India, 2009). The capture fisheries in the rivers, lakes, channels, flood plain water bodies , tanks and ponds, were always the rural livelihoods and food security base. The developments in composite fish culture in the past few decades shifted the importance to producing Indian major carps and selected exotic carps. Simultaneously the degradation of different water bodies due to various reasons had affected the biodiversity, the quality and quantity of fish obtained from the water bodies. But the overall inland fish production now highly dependent on aquaculture of Indian major carps . Carps constitute 87% of the inland aquaculture production. Fish seed production during 2007-08 was 24143.57 million fry.

Even if we look at contribution of fishery in revenue generation in smaller states, data suggest fishery has wide potential in rainfed agriculture system. E.g. In Jharkhand state in 2008-09 Rs. 960.00 lakhs revenue is collected from all sources.

### **Fishery statistics doesn't count local breeds:**

This invisibility in statistics could account for their poor recognition in fisheries and aquaculture development policies. Considering the extent to which small indigenous species of freshwater fish play a role in providing nutrition to the rural poor and in maintaining biodiversity, it is

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important to consider promoting sustainable use of small indigenous species in both capture and culture fishery systems.

Significant production of small indigenous fish species of freshwater origin, from culture and capture fisheries, is reported from several water bodies. That these species tend to be sold and consumed locally could be one of the reasons why they remain invisible in national statistics—such statistics are largely based on catches reported at large/major landing centres (Halwart, 2008; Roos, 2007).

Though the Indian major carps and other exotic carps would have gone up in production and found its way to distant markets, the indigenous variety remained the income source of traditional fishers in the rural area mainly catering to subsistence, or local markets. In Bundelkand area of Madhya Pradesh, when fish is harvested from the village tanks, the smaller fishes are taken by the women of the traditional community, *Dhimar* to sell it in the local markets after slightly roasting it (Mathur and Pacholi, 2006). Another study done by Neena Koshy (2009) in Orissa with selected fish farmers show that many farmers prefer to culture indigenous species such as mola with the major carps realising its medicinal and nutritional value, local preference for domestic consumption and local market demand, often harvested by family members themselves. The other supporting factors are local preference, local availability, self recruitment, low cost maintenance and high market preference. The best example of the degradation of the indigenous species can be found in Kolleru lake area in Andhra Pradesh where the lake encroachment and pollution has eliminated most of the indigenous species and the lake itself. Within the tanks, which follow intensive carp culture there is very little scope for any other species. The capture fisheries in the lake and the livelihoods based on them have all but collapsed. About 18 species of fish are said to have been disappeared from the lake. (Muralidharan, 2003).

It is, however, important to locate these efforts within specific cultural and socioeconomic contexts, looking also at critical issues of ownership and access rights over water bodies, and to formulate relevant strategies, as appropriate. If such factors are taken into consideration, the objectives of nutritional security, promotion of employment and conservation of biodiversity can be better met especially in some of the most disadvantaged areas of rainfed agriculture area, showing poor human development indicators. While there has been considerable Institutional financing of activities in marine fisheries and fish processing over the last four decades, that in inland fisheries and aquaculture has been largely through middlemen, merchants and traditional money lenders. This is also a major concern for achieving the projected growth rates. Enhancement of credit flow is the need of the hour. For this purpose, suitable mechanisms need to be developed. For example, most fishers and aqua-farmers cannot provide security in terms of land/water holdings and several banks do not have the requisite manpower to evaluate the proposals.

There is, therefore, need to throw light on sustainable use of small indigenous fish species, their role in food security, employment, income, poverty alleviation and conservation of biodiversity.

### **State policy looks fishery only as source of revenue:**

Fishery is a State subject and as such the primary responsibility for development rests with the State Governments. The major thrust in fisheries development has been focused on optimizing production and productivity, augmenting export of fishery products, generating employment and improving welfare of fishermen and their socio-economic status. In Indian context fishery is considered as state subject and most of the central assistance is provided towards marine fishery and for managing central institutes. Even the subsidy portion towards inland fishery has sharing of 75% from center and 25% from state govt. but even the central assistance part is very minimal that doesn't fulfill needs of this sector. E.g. the DAHD, India govt has released sum of Rs.12.84 crore during the financial year 2007-08 and Rs.13.60 crore during 2008-09 to the various states and UTs for achieving the target of covering 40,000 ha water area under fish culture & training of 27,000 fish farmers.

In the year 2007-08, Rs.86.45 crore was provided for various research and central institutes like CIFNET, CICEF, NIFPHATT, FSI, NFDB, Rs.41.49 crore for marine fishery whereas only 12.84 crore was earmarked for inland fishery sector. The situation doesn't look healthy if we look at state level budgetary allocations. Jharkhand state has utilized only Rs.4.19 crore against budget outlay of 22 crore by the end of Nov.2009. In Andhra Pradesh (which ranks first in fish production and revenue generation), The Fisheries sector has contributed 2.31% to the Gross State Domestic Product during year 2008-09. But, program towards development of inland fishery and aquaculture has Budget Estimate of Rs.85.00 Lakhs for Year 2009-10, that Rs 75.00 Lakhs as Central Share and Rs10.00 Lakhs as State Share. The inland fishery development program at state level is mostly dependent on central share. Nearly all the state looks at fishery sector as source of revenue but investment and subsidy for the fishfarming is not promoted as policy directives.

Madhya Pradesh Govt has enacted fishery policy in year 2008 that incorporates subsidy and support to fishfarmer and fishery was given equal status as agriculture. But the field level implementation of policy statement is again a question mark. Because, central assistance is not sufficient to meet out needs of fish farmers.

### **Access to production system and resources:**

The fisheries being a state subject in India, the most relevant policies are the respective inland fisheries acts or leasing and licensing policies of water bodies. The origin of all the acts have the base in the historical Indian Fisheries Act 1897 which proposes the states for prohibiting destructive fishing by use of dynamite or poison. Further the state can prohibit or regulate fishing by certain fixed gears or the size or type of nets to be used, construction of weir etc. It also gives authority to Governments to close a particular area of the water body or a particular season for fishing. These regulations help in the conservation of fishes and their habitats. Licensing and leasing rules for inland water bodies for capture and culture forms the core area of most inland fisheries policies. The Tamil Nadu Inland Fisheries lease and licensing rule 1972 frames separate regulations for each major river, reservoir and tank. In most other states its only specified for different types or size of water bodies

Most state policies gives first priority to fishermen cooperatives for lease and licence. Unfortunately many of the so called cooperatives are defunct. For example in Assam there is reported to be about 200 registered cooperatives of which 7 are operational (Upare, 2007). In

most of the states, in the absence of the capable fisher cooperatives, the water bodies get leased out to others, more on commercial lines. This alienates the water resources and fisheries from the local community especially the traditional fishers.

The now well known intensive fish culture practices in and around the famous Kolleru lake in Andhra Pradesh is the best example of how the local communities get gradually alienated from the local resources. Not capable of investing in aquaculture, the locals started leasing out the area to entrepreneurs from outside. Now the entire aquaculture operation is taken up by the outsiders and the locals live on the annual lease amount. The encroachments of the tanks to the lake bed and the pollution had cut off the any limited access of the local fishers had to the indigenous species.

The West Bengal leasing policy looks into the financial capacity of the fisher cooperatives before leasing out. Though important to ensure economic utilisation of the water body for fish culture, the fisher cooperatives lose an opportunity to get access for want of financial resources.

Maybe the recent Inland Fisheries policy (2008) of Madhya Pradesh is unique in that the first preference is given to traditional fishing communities followed by scheduled tribes, scheduled caste, backward class. It has also come out clear definition for fishers. The MP policy allocates ponds 1-1000ha to registered fisher cooperatives or groups which will get registered soon. They insist on 33% women members in new fisher cooperatives formed.

The lease amount could be another hindrance for local fishers to go for lease. The MP policy had made the lease amounts very reasonable and made constant for 10 year lease period.

In licences issued for fishing in reservoirs in Tamil Nadu, fishers are to share the catch of bigger fishes between fishers and government in 1:2 ratio while it is 1:1 for smaller fishes. This gives a better share of SIS to fishers involved.

### **Increasing production and productivity**

The development plans of different states give top priority for increasing production and productivity from culture fisheries and stocking in reservoirs, beels and other water bodies by supplementary stocking. Though not specified in each case the Indian major carps and the 3 exotic carps are preferred. There is very little mention of conserving and enhancing other indigenous species. But none of the policy recommends to look at inland fishery sector from point of socio economic and environmental development of local community members. That is why, the input and investment by govt. is not been taken up properly. Even, the market facilitation and market development from inland fishery sector is directly controlled by middle man and traders. The control entire value chain of fish market i.e., seed supply upto transportation and market consumption. None of the state govt or centre govt discusses how fish production system can be liberated from clutches of cooperative dept and

### **Is the policy working?**

The policy provisions are very old in most states and there has not been a comprehensive updating of the policy. There are positive elements that support conservation of indigenous species or socioeconomic justice scattered in different state policies though each specific state policies are not comprehensive enough. Most of the provisions in the policy are hardly enforced for want of community participation in management. The current policy and development plans give priority to increasing production and productivity and lesser importance to conserving the indigenous species and promoting the socio-economic benefits derived out of it. Fisheries and aquaculture are multi-stakeholder enterprises. Existing laws and regulations with regard to water, environment and natural resource management have high implications on the activities. Further, the country is also a signatory to several international agreements, mostly in marine fisheries. While fisheries is a State subject like agriculture, it is necessary to develop a broad framework for harmonising the various acts under which fisheries is administered. This would enable addressing international issues such as WTO matters on fisheries, Illegal Unregulated and Unreported fishing, quality control of fisheries products, land leasing, seed availability, insurance, inter-state fisheries management, treating fisheries and aquaculture at par with agriculture in tariff rates for electricity and water, freight rates for fish transport, regular monitoring of patterns of subsidy and related aspects. Also, the measures to deal with issues like minimum wages, long working hours, illiteracy, exposure to high risk without protection, etc. could be incorporated in the national level policy document.

### **Recommendations for comprehensive policy that protects resource base and resources in Rainfed area for promotion of fishery sector**

- Develop national inland fishery policy for resource sustenance and promotion of fishery related livelihood
- Update the Inland fishery policy of each state through a stake holder based approach. There is also scope for learning from each other state's policy. At present the legislations are ad hoc and piece meal. There is a need of a comprehensive policy.
- Shift priority to bringing more water resources under fish production with equal importance to indigenous species, from just increasing production and productivity of major carps and exotic carps. Emphasis should be given to ecosystem protection, biodiversity and above all socio economic benefit. Equal importance to be given to capture, capture cum culture and culture fisheries.
- Research to look into promoting more multi species composite culture shifting from the 3 species or 6 species system to 10-16 species system as in China or Bangladesh and

review the relevance of strict eradication of “weed” and predatory fishes. Maybe stocking of advanced fingerlings may take care of the problem to some extent. Importance of SIS in local food security and nutrition to be recognised and the concept promoted just not through the department of fisheries, but also through departments of health, women and child welfare.

- More research and extension work on small and indigenous species(SIS) culture and its role in nutrition livelihoods to be strengthened including its auto stocking possibility of hatchery production.
- As in the Madhya Pradesh policy, the traditional fishing communities and their cooperatives to be given all priority for leasing and licensing in inland capture and culture fisheries. Increase lease period of water bodies for culture to 10 years as in Madhya Pradesh so that the lease holders feel more responsible to maintain the resources sustainably.
- Environmental flow requirement of all river systems to be worked out and the enact policy that ensure minimum environmental flow. The irrigation departments will have a major role to play in coordination with the departments of fisheries and environment.
- Measures to be taken to ensure to symmetrically collect and manage inland fish production data, including capture and culture of all species including SIS. This will help take better policy decisions.
- Genuine inland fisher cooperative societies to be promoted, strengthened and necessary financial support given for taking up culture and capture fisheries.
- Women role in inland fisheries and fish marketing to be recognised and to insist 33% membership of women in newly formed cooperatives.
- Create an enabling situation and promote fisheries co management in capture and capture cum culture fisheries.
- Increase budgetary allocation for inland fishery program, and fishery dept should be made independent of cooperative and other dept. periphery.
- Proper market development support, financial support and value chain development support needs to be provided.