Blog 7: April 2013

aesa Sharing, learning and networking for innovation Blog

WHY FISHERIES SECTOR NEEDS AN EXTENSION FRAMEWORK?

Though a large percentage of rural population in South Asia depend on capture fisheries and aquaculture, lack of an appropriate extension framework constrains this sector from optimizing its performance, argues, Dr S N Ojha.

Both aquaculture and capture fisheries provide employment and nutrition to a large proportion of rural communities in South Asia. Aquaculture has expanded steadily in recent years, now contributing 40% of total fishery production in South Asia (World Fish, 2009). However this sector faces a number of challenges. For instance, the introduction of mechanized trawlers, use of purse seine nets and adoption of dynamite fishing have all contributed to over exploitation of fisheries resources. The other challenges include: habitat destruction, climate change, ultra-violet radiation, ocean acidification, and water pollution through nutrients, chemicals, human pathogens, and marine debris. In the case of small scale aquaculture, lack of community approach continues to discourage input suppliers and marketing agents to service this sector effectively. Limited access to information and lack of adequate training programmes further constrain those dependent on the fisheries sector (Geethalakshmi et al, 2012).

In India, several organizations exist to support fisheries sector. The overall responsibilities to manage this sector at the national level lies with the Department of Animal Husbandry and Dairying (DAH&D), now renamed as the Department of Animal Husbandry Dairying & Fisheries (DADF). The Fisheries Division under DADF supervises 6 centres involved in coastal engineering, survey and aquaculture. It also implements several development schemes for development of inland and marine fisheries, fishermen

welfare, strengthening database and application of Geographical Information System. The National Federation of Fishermen`s Cooperatives Ltd., (FISHCOPFED) educate, guide and assist fishers in their efforts to build up and expand the fishery cooperatives. At the state level, the Department of Fisheries organizes training programmes and schemes on freshwater fish farming, use of modern fishing gears and methods and maintenance of marine diesel engines.

Despite having many departments and institutions working on fisheries, this sector needs a very high level of coordination as it deals with common resources to address the community needs whose livelihood is dependent on such common water bodies. Though the National Fisheries Development Board (NFDB) was set up in 2006 mainly to bring about better coordination among the different actors in the fisheries sector, "responsibilities are still not clearly defined between NFDB and the Department of Animal Husbandry, Dairying and Fisheries"(Planning Commission, 2012).Lack of coordination between Central and State Government agencies involved in research, education and training, NGOs and community organizations also constrain addressing the the training needs of fishers, fish farmers and development agencies.

While there are several ongoing efforts to address the issues of the fisheries sector and the training needs of fishers and fish farmers, there are several gaps in the field of knowledge management in this sector at the field level, the change agent level and the planning level. (Box1).

Box 1: Training and Information needs

Fishermen mostly need training and information on, fishing methods, navigation and safety, fishing gear design and construction, gas and diesel maintenance, vessel repairs and maintenance, coastal zone planning and management and exports. They also need training in fish handling, value addition and marketing. Mostly the fishers are dependent on credit to run their fish business. This may be because of the uncertainty of fish catch, high cost of fishing, and lack of trading activities and infrastructural facilities (Ulman et al, 2008).

Both fishers and fish farmers need training on, project management to improve their credit worthiness. Pollution is a major menace in common water bodies. While bringing awareness on marine pollution it was found that first priority should be given to a basic legal understanding of the regulatory framework (Kwak, 2012). Under this they may be made aware about how the pollution control boards work, levels of the courts and authorities related to pollution, and court terminologies. In addition to above fishers and fish farmers also need know-how on alternative livelihood options to sustain their rising population as mechanized harvest of fish lowered fish population though modern living amenities has been increasing fishers' population.

Gawde, et al, 2006, has reported that large fish farmers engaged in aquaculture may need training on, site selection, pond construction, testing of water parameters, proper bottom slope for drainage of water, formation of bloom in colour range of brownish to yellowish before stocking, PCR testing of seed for presence of WSSV, checking healthiness of seed before packing for transportation, acclimatization of seed, frequent checking of water parameter, use of feed probiotics, use of check trays and adjustment of feed accordingly, maintenance of bloom for initial two months, etc.

Moreover there are not enough programmes on alternative livelihood options, aqua tourism, fish marketing, fish processing and value added product development and community management of water resources, etc. Finally, there is very little recognition of the role of fisheries and aquaculture extension.

Without addressing this gap, other interventions are unlikely to result in sustainable and long term improvements in the livelihoods of fishermen and fish farmers.

Ways forward

Need Assessment

Before deciding on the techno-organisational interventions to empower fishers and fish farmers, it is essential to conduct a need assessment at three levels.

- Situational analysis (sectoral needs in an area),
- Task/occupational analysis (expectations from the fishers, fish farmers, marketing agents and input suppliers by the development agencies) and
- Individual analysis (expectations of the fishers and fish farmers from the development agencies).

Establishing Fisheries Innovation Platforms at state level

Platforms comprising all the stakeholders in a given "aqua-eco-zone" involved in fisheries innovation should be constituted to plan and review needed interventions and also to draw lessons to guide future interventions. The platforms may be composed of fisheries research centers, fisheries colleges, fisheries training units, fisheries development agencies, NGOs and community organizations. The platform should analyze existing livelihoods and environmental changes and should review marketing strategies and develop a "Livelihood-Environmental-Governance (LEG) Security" for the fishers and fish farmers of the zone. This should form the basis for capacity development of fishers, fish farmers and development agencies in that region.

Convergent Fisheries and Aquacultural Extension Framework

The development agencies in the fisheries sector, especially the staff of the state department of fisheries needs to be first sensitized on emerging issues such as the Code of Conduct for Responsible Fisheries, Community Management of Water Resources, Alternative Livelihood Options like, Aqua Tourism, Ornamental Fishery, Fish Processing and Product Development, Further, they should be supported to implement concepts like, Participatory Planning, Mentoring, Monitoring and Evaluation Process; and also public, private and community participation in fisheries development. The sector needs a convergent extension framework to deal with the existing challenges (Table 1).

Table 1: Convergent Fisheries and Aquacultural Extension Framework

Levels	Capture Fisheries	Aquaculture
Field Level	• Fishing methods, navigation and safety • Fishing gear design and construction • Gas and diesel maintenance • Vessel repairs and maintenance • Fish handling and Processing • Coastal zone planning and management • Biodiversity and habitat management • Value added product skills • Alternative Livelihood, etc.	• Site selection • Pond construction • Testing of water parameters • Testing of seed • Acclimatization of seed • Feeding and use of feed probiotics • Seed packing for transportation, etc.
	• Marketing and exports • Project management • Environmental impact assessment, etc.	
Change Agent Level	• Project formulation on sustainable fisheries and aquaculture incorporating fishers' friends and fishers –field –school methods. • Community Management of Water Resources • Alternative Livelihood Options like, Aqua tourism, Ornamental Fishery, Fish Processing and Product Development, etc.	
Planning Level	• Participatory Planning, Mentoring, Monitoring and Evaluation Process • Public, Private and Community Participation	

Reference

Gawde, M. M., Chandge, M. S, Shirdhankar M. M (2006). Adoption of Improved Aquaculture Practices by Shrimp Farmers in South Konkan Region Maharashtra, India, Journal of Agriculture and Social Research (JASR) Vol. 6, No.2, 2006, pp 1-8 (available at: http://www.ajol.info/index.php/jasr/article/view/47010/33395)

Geethalakshmi, V., Charles, J.J., Balasubramaniam, S., Parvathy, R., Nasser, M. (2012). Information and Training Needs of Coastal Fisherfolk of Ernakulam District in Kerala, *Journal of Global Communication*, 5 (1), 2012, 9-15. (available at:

http://www.indianjournals.com/ijor.aspx?target=ijor:jgc&volume=5&issue=1&article=002)

Kwak, Gerrit Werner (2012). Developing *marine pollution awareness among new recruits at the SAS Saldanha Naval Gymnasium: a training needs analysis.* Master's thesis, Rhodes University, 2012 (available at: http://eprints.ru.ac.za/3002/1/KWAK-MBA-TR12-96.pdf)

Planning Commission (2012). Twelfth Five Year Plan (2012–2017), Economic Sectors, Volume II, p12. Government of India

Ulman, Y.N., Talathi J.M., Naik, V.G (2008). Socioeconomic status, income and expenditure pattern of fishermen in Konkan region of Maharashtra, *Agriculture Update,*Vol. 3 No. 3&4 : 251-254 (Aug. & Nov. 2008) (available at: http://www.connectjournals.com/file_html_pdf/555503H_251-254a.pdf)

World Fish Centre, (2009). Fish Supply and Food Security in South Asia (available at http://www.worldfishcenter.org/resource_centre/WF_2467.pdf)

Dr S N Ojha is Principal Scientist at the Central Institute of Fisheries Education, Mumbai, India (Email: **snojha@cife.edu.in**)