



National Fisheries Development Board

Guidelines for Human Resource Development Programmes in Fisheries Sector

1.0 Introduction

Historically, extension has been the weakest link in the development and modernization of the fisheries sector in India. Unlike agriculture sector, no dedicated extension support was ever available to the fisheries sector. The availability of technical personnel in the Department of Fisheries (DoF), the line department in the States/ Union Territories (UTs), to support the vital extension functions at the grassroots level has been negligible, resulting in poor Transfer of Technology (TOT), lack of coordination with other link departments and poor research linkages. Even sector-specific agencies such as the Fish Farmers Development Agency (FFDA) or the Brackish water Fish Farmers Development Agency (BFDAs), set up to popularize aquaculture on scientific lines, lacked the necessary mechanisms to support the extension needs of the growing fish/ shrimp farmers in the country.

Due to lack of focus on extension, the resultant training need assessment and the human resource development (HRD) at all levels in the DoF, as also at the field and farmers level, has remained neglected. It is well recognized that technical, financial and management skills are vital for the development of any food production sector and unfortunately this aspect has received the least attention in the fisheries sector. Further, management skills are also essential to forge linkages, develop skills and capacities and provide technical backstopping at the cutting edge level. Improving the efficiency of the existing field-level institutions such as the FFDA and the BFDAs is also a priority, if these agencies are to become the vehicles for promoting inland and coastal aquaculture development in the country. Lack of HRD opportunities has also resulted in dearth of technological and livelihood options with these agencies, often resulting in their sub-optimal performance.

Therefore, there is an urgent need to strengthen HRD in the fisheries sector and also consider promoting alternatives mechanisms of delivery through innovative methodologies, which meet the growing needs of the sector. With the conventional top down approaches showing limited success in extension services, there is a need to promote bottom up participatory approach with effective coordination and convergence at the appropriate levels. Such efforts should primarily aim at empowering the marginalized and poorest of the poor in the fisheries sector, besides disseminating technologies and information on diversified opportunities, improved post-harvest practices, sustainable utilization of the resources, marketing of the produce, use of science in day to day activities, etc for the benefit of the existing and new cadres of fishers and fish farmers in the country.

The National Fisheries Development Board (NFDB) has laid adequate focus on the HRD and extension aspects. The objectives of the Board *inter alia* emphasize on bringing major activities relating to fisheries and aquaculture for focused attention and professional management, achieving sustainable management and conservation of natural resources including the fish stocks, applying modern tools of research and development including biotechnology for optimizing production and productivity from fisheries and training and empowering women in the fisheries sector. These objectives of the Board clearly highlight the need for improving the existing HRD levels in the fisheries sector. Therefore, to achieve the above-stated objectives of the NFDB, the following guidelines have been prepared, which are intended to serve as benchmark for the Board to initiate its activities in the field of HRD and extension services in the country.

2.0 HRD strategy

The existing Institutional mechanisms in the fisheries sector are less oriented towards management functions, resulting in a cadre of fisheries personnel largely devoid of management skills. One of the most popular HRD courses conducted by the Central Institute of Fisheries Education (CIFE), Mumbai also focused on imparting technical skills to the lower and middle-level technical officers of the DoF. However, with the discontinuation of the said programme, there is no formal HRD activity at the national level. Presently, many DoFs do have training institutions/ centers, but they do not seem to be conducting HRD programmes for their technical staff on a regular basis. Most of them also lack the necessary wherewithal, especially in terms of faculty.

With a view to mainstreaming the HRD interventions within the existing fisheries institutional set up in the country, there is need to adopt a systematic approach in terms of target groups and their training requirements, identification of training institutions and development of training modules and contents. The identified training programs have to cater not only to the needs of the fisheries personnel at the entry/ induction level but also to those arising from time to time at their different career levels. Given the emerging scenario in the context of market driven development initiatives, the fisheries personnel have to be kept abreast of not only the latest technologies but also the management and marketing aspects as well. This calls for the extensive utilization of the available training/ HRD resources at the state and national levels, with appropriate strengthening, etc.

As the target group for the HRD in the fisheries sector is considerably large in number, there would be a need to augment the capacity of the States/ UTs to realize the training needs. Thus, creating a cadre of trainers in different institutions assumes special significance. The modules for training have to be worked out keeping in view the specific needs of different target groups with focus on the job and performance requirements. Secondly, the modules will have to provide for practical orientation to the contents so that the trainees will utilize the learning in the 'back home' situation. In order to ensure these, the need for provision of necessary resources can hardly be over emphasized. In other words, the financial allocations for HRD will have to provide for strengthening the capacities of the institutions to undertake training, etc and also to meet the logistics of the trainees so that the training capacity and opportunities are optimally utilized.

3.0 Target groups for HRD

The target groups for training will include the functionaries of the DoF and of all the quasi-government organizations such as fisheries corporations, FFDAs, BFDAs, etc. Besides, the functionaries at the cutting edge level, the senior officials of the DoF at the managerial level will also need exposure to the emerging trends in policy and program management and to the success stories in different parts of the country. Over the years, the HRD levels in FFDAs/ BFDAs have deteriorated and their capacity to deliver the goods has vastly diminished. It is, therefore, essential to empower them through well-designed HRD programmes, which *inter alia* could include scientific developments in farming practices, emerging environmental issues in fisheries and aquaculture, business approaches in processing, marketing, etc. The HRD programmes may also focus on empowerment of these agencies using the public-private partnership (PPP) mode. It can be visualized that both FFDAs/ BFDAs can provide vital organic linkages with the NFDB as its potential field arms. The FFDAs/ BFDAs can also be valuable links with other field-level agencies/ stakeholders such as the Krishi Vigyan Kendras (KVKs) and the ATMAs. As these agencies will be operating at the cutting – edge, their capacity building will be a continuous activity. A categorization of the fisheries personnel at various levels in the States/ UTs is provided in Table 1.

4.0. Modules and contents of training

It is generally recognized that successful HRD and or extension initiatives incorporate combination of skills for various categories of personnel serving the technical, administrative, financial and support services of the organization. Such initiative have inbuilt mechanisms for follow up with critical reviews, etc to see the efficacy of the training and the delivery of skills and knowledge at the different levels. The reviews also provide the opportunity for mid-term corrections, if any. Therefore, in view of the above, it is essential to build up capsules of training curriculum to meet the HRD and extension requirements of the fisheries sector.

4.1 Induction Training

The induction training is proposed to be carried out through identified modules and contents, which are detailed in Tables 2-5. The total induction training could be for six months duration split into three modules comprising technical/ managerial/ delivery aspects. Each module could be for one month followed by field application at his/ her parent office for another one month. Each module would be undertaken at the identified institution having specialization in the areas indicated. The Board will bear the entire training cost. The financial implications would cover full TA/ DA for the period of his/ her training at the specified institution. For the remaining three months, the NFDB would provide the TA/ DA only during his/ her local travels and a small allowance for fieldwork facilitation. During the three months when the trainee returns to his/ her parent office, he/ she would undertake the application of the learnings. The trainees would include officers at the induction level such as Fisheries Officers, Assistant Directors (wherever recruited directly) and middle-level functionaries of Fisheries Corporations and any other Public Sector Unit concerned with fisheries development in the States/ UTs.

4.2 Training of Master Trainers

It is essential to build a cadre of master trainers for carrying forward the task of HRD in fisheries sector. Such master trainers would be picked up from the DoF of the States/ UTs/ Fisheries Corporations/ State Agriculture Universities/ KVKs/ NGOs and the Indian Council of Agricultural Research (ICAR) Fisheries Institutions. The master trainers will be selected on the basis of competitive selection/ handpicking through regional assessment adopting the following criteria:

- Relevant technical background,
- Training aptitude,
- Adequate communication skills,
- Team work and leadership qualities,
- Age group of 35 - 45 years, and
- Minimum 10 years of experience in Teaching/ Training/ Research.

The above process could be handled by expert institutions such as MANAGE, Hyderabad. A total of about 120 master trainers could be trained (an average of about 4 - 6 master trainers per State/ UT) in a span of two years to meet the requirements of the fisheries sector.

5.0 Proposed HRD institutions and their strengths (including selection criteria, etc.)

Keeping in view the broad spectrum of the training needs, a range of institutions within and outside the fisheries discipline will be required to meet the growing needs of the sector. Besides institutions dealing exclusively with fisheries and aquaculture related subjects, there are a large number agencies/ institutions dealing with agriculture management and extension, agriculture marketing, agriculture finance, etc which need to be utilized for providing training to various levels of functionaries in the fisheries sector. Examples in this regard can be cited of SAMETIs (State Agriculture Management & Extension Training Institute), which have been set up in all the States/ UTs under the ongoing extension reforms programme. These Institutes also address the management interventions besides focus on extension and communication aspects. ATMAs have been set up in 268 districts and they are also funded through a centrally sponsored scheme (90:10 sharing basis between the Centre and the States). The ATMAs can capture both technical & management issues in fisheries sector through Strategic Research and Extension Plans (SREPs). Institutions like MANAGE can provide specialized support, especially at the management level with a range of services, such as:

- Identification of training institutions regionally relevant.
- Identification and capacity building of master trainers.
- Development of selected management modules.
- Organization of regional/ national consultation workshops on HRD.
- Monitoring and evaluation of HRD activities.
- Organization of orientation workshops for senior level functionaries.
- Networking with technical and management training institutions at national and international levels.

The ICAR has eight institutions dealing exclusively with fisheries and aquaculture. Together, these institutions cover the entire range of subject-matter specializations and will be handy for upgradation of technical skills/ capacities of the personnel of the DoF and related agencies. Over the years, these institutions have developed number of location specific technologies and there is need to extend these to the field through updating the competencies of the functionaries from time to time.

5.1 Proposed institutions for HRD

The institutions where the training will take place can be broadly placed under the following groups:

- Subject - Matter Institutions
- Management Institutions
- Financial Institutions
- Multipurpose Institutions
- Extension and Transfer of Technology Institutions.

A comprehensive list of the identified subject matter, management and extension institutions with their location and relative strengths is given in Table 6.

5.2 Criteria for selection of HRD institutions/ agencies

The following criteria can be used in selection of an appropriate Institution/ agency for providing HRD support to the sector:

- Faculty strength & availability of relevant expertise.
- Capability of the institute to outsource the expertise.
- Track record of the institute in conducting similar training programmes.
- Capacity for handholding.
- Networking with other institutions.
- Capacity to undertake action research/ operational policy interventions.
- Level of recognition by the concerned State/ UT.
- Status of physical facilities available like training halls, syndicate rooms, library, Internet, hostel facilities, etc.
- Availability of teaching aids like computers, LCD projector, etc.
- Accessibility and connectivity of the training institute.
- Training cost proposed by the institute, which might include institutional charges, tuition fees, course material, honorarium to resource persons, transport for field visits and other logistics.

6.0 Assigning the HRD responsibilities

6.1 National Level

The NFDB will canvas among the identified institutions in the country by circulating the (i) Selection criteria, (ii) Training modules and (iii) Proposed clientele to be trained and seek proposals inviting technical competence in handling the programmes along with costs, etc. A committee headed by the Chief Executive Officer, NFDB would screen the proposals and assign the responsibility of conducting the training programmes identified at different levels.

6.2 State Level

In the event of assigning the responsibilities to the State/ UT Governments, the Secretary/ Commissioner (Fisheries) of the concerned State/ UT Governments will canvas among the State-level training institutions by adopting the procedure as detailed in paragraph 6.1 above. In this case a committee headed by Secretary/ Commissioner (Fisheries) would screen the proposals and forward the same with their recommendations to the NFDB for consideration of funding.

7.0 Other useful considerations in designing/ refining HRD strategies in Fisheries Sector

Besides the above, the following points would also be useful in designing/ refining the HRD strategy for the fisheries sector by the NFDB:

- Development of trainers' bank
- Development of training material (different modes such as print form, e-learning, (C- DAC) model.
- Networking with international HRD organizations.
- Action research in HRD for continuous feedback.
- SREP reflected priorities should be made mandatory for HRD interventions at district-level and below and KVK interventions should be sought accordingly.
- Continuous up dating of master trainers by providing opportunities for specialization.
- Performance-based incentives to the master trainers may be in the form of increments/ appropriate placement.
- A minimum of 6 weeks per year training assignment by Master Trainers anywhere in the country through NFDB by signing MOU with sponsoring organization.
- Recognition of master trainers through certification by appropriate State/ Government of India agencies. ICAR Fisheries Research Institutions/ SAMETI/ MANAGE may be considered for certification.
- Training manpower of the DoF should have inbuilt linkages with other development functionaries to understand the farming systems perspective.

- Empowering fisher groups in coastal areas with appropriate credit linkages and need for specially designed HRD interventions (re-orientation of credit institutions). NABARD should be taken on board for credit support besides their support in HRD also.
- Strengthening of training infrastructure of the training institutes of the DoF to upgrade at least one in each state by providing greater functional autonomy.
- Potential-linked HRD support (example: tapping up of aquaculture potential in the Ganga – Brahmaputra basin).
- HRD in critical areas like seed, feed, health, post-harvest, etc should adequately focus at the needs of the local level.
- Mainstreaming gender issues while formulating HRD Strategy.
- HRD intervention sharing workshop may be organized at regional basis by NFDB in collaboration with SAMETIs/ EEIs.

8.0 Expected outputs of the HRD Programme

The overall benefits of sound HRD programmes for any developmental sector are enormous and contribute to the sustainable utilization of the resources, improved livelihoods and larger benefits to the society as a whole. Some of the most visible outputs that can be conceived from the HRD programmes in fisheries sector are as follows:

- Knowledge and skill up-gradation at various levels.
- Improved delivery of extension services.
- Timely and effective input/ credit support.
- Promotion of fisher groups and their empowerment.
- Increased market intelligence.
- Increased appreciation of inter-departmental linkages and coordination.
- Better management and information system.
- Better impact assessment for mid-course corrections through monitoring and evaluation.
- Revitalizing the training and extension components of fisheries sector.
- Increased income and livelihood options of various fisher groups.

Table 1: Categorization of personnel of the Department of Fisheries and related Agencies

Senior - Level	Middle - level	Field - level	Other Stakeholders
Secretaries in-charge of Fisheries	Joint Directors (State/Regional-level)	Fisheries Officers	Middle and small-level processors
Commissioners/ Directors of Fisheries	Deputy Directors (State/ Regional-level)	Inspectors	Fish traders and marketing agents
Managing Director of State-Level Fisheries Corporations	Senior & Middle-level Management of State-level Fisheries Corporations	Demonstrators	Fish seed and feed suppliers
Additional Directors	Assistant Directors District Fisheries Officers/ Chief Executive Officers of Fish Farmers Development Agencies/ Brackish water Fish Farmers Development Agencies	Fieldmen Fishermen Field Staff of Corporations	Gear and craft manufactures Other input suppliers (e.g. ice, aqua medicines, packaging material, etc.)

Table 2: Modules/ contents of HRD programmes for different levels of personnel of the Department of Fisheries and related Agencies

Sl. No	Topics	Senior-Level	Middle-Level	Field-Level
1	Credit and Risk Management		*	*
2	Human Resource Management	*	*	
3	Input Management		*	*
4	Linkages and Coordination	*	*	
5	Extension Management		*	*
6	Team Building and Leadership Development	*	*	*
7	Institutional Finance and Resource Management	*	*	
8	Market Intelligence	*	*	*
9	Information and Communication Management	*	*	*
10	Management of Public- Private Partnership	*	*	
11	Field Interventions and Logistics Management		*	*
12	Project Management and Monitoring & Evaluation	*	*	
13	Empowerment Management			*
14	Agri-business and Entrepreneurship Development (at Group/ Individual Level)	*	*	*
15	Training Management		*	
16	Documentation, Project Writing & Reporting	*	*	
17	Technology Management and Skill Up gradation		*	*
18	Management of Policy Interventions	*		

Table 3: Modules/ contents of HRD programmes for senior-level officials of the Department of Fisheries and related Agencies

Sl. No	Topics
1.0	Management of Policy Interventions
2.0	Linkages and Coordination
3.0	Human Resource Management
4.0	Institutional Finance and Resource Management
5.0	Agri-business and Entrepreneurship Development
6.0	Documentation, Project writing & Reporting
7.0	Project Management and Monitoring & Evaluation
8.0	Information and Communication Technology Management
9.0	Market Intelligence, Linkages and Management
10.0	Team Building and Leadership Development
11.0	Management of Public- Private Partnership

Table 4: Modules/ contents of HRD programmes for middle- level officials of the Department of Fisheries and related Agencies

Sl. No	Topics
1.0	Linkages and Coordination
2.0	Human Resource Management
3.0	Project Management and Monitoring & Evaluation
4.0	Management of Public- Private Partnership
5.0	Extension Management
6.0	Training Management
7.0	Market Intelligence, Linkages and Management
8.0	Input Management
9.0	Credit and Risk Management
10.0	Institutional Finance and Resource Management
11.0	Team Building and Leadership Development
12.0	Information and Communication Technology Management
13.0	Field Interventions and Logistics Management
14.0	Agri-business and Entrepreneurship Development (at Group/ Individual Level)
15.0	Technology Management and Skill Up-gradation
16.0	Documentation, Project Writing & Reporting

Table 5: Modules/ contents of HRD programmes for field- level officials of the Department of Fisheries and related Agencies

Sl. No	Topics
1.0	Field Interventions and Logistics Management
2.0	Extension Management
3.0	Market Intelligence, Linkages and Management
4.0	Empowerment Management
5.0	Technology Management and Skill Up-gradation
6.0	Agri-business and Entrepreneurship Development (at Group/ Individual - Level)
7.0	Information and Communication Technology Management
8.0	Team Building and Leadership Development
9.0	Input Management
10.0	Credit and Risk Management

Table 6: Subject Matter/ Management /Extension Institutions identified for the proposed HRD interventions

Name	Location	Strengths
A. Subject-matter Institutions		
1.0 ICAR Fisheries Institutes		
(i) Central Institute of Fisheries Education (CIFE)	Mumbai	Graduate and Post-Graduate courses in several disciplines of fisheries and aquaculture. Short-term training programmes on specialized topics, etc.
(ii) Central Marine Fisheries Research Institute (CMFRI)	Kochi	Fish stocks investigation, mariculture, catch estimation, stock assessment, etc.
(iii) Central Institute of Fisheries Technology (CIFT)	Kochi	Gear and craft technology, fish processing, HACCP, analytical procedures, etc.
(iv) Central Institute of Brackish Water Aquaculture (CIBA)	Chennai	Coastal aquaculture, Environment Impact Assessment, analytical procedures, etc.
(v) Central Inland Fisheries Research Institute (CIFRI)	Barrackpore	Inland fisheries (rivers, lakes, floodplains, reservoirs), Environment Impact Assessment, analytical procedures, etc.
(vi) Central Institute of Freshwater Aquaculture (CIFA)	Bhubaneswar	Freshwater aquaculture (carps, scampi, etc.), Environment Impact Assessment, analytical procedures, etc.
(vii) National Bureau of Fish Genetic Resources (NBFGR)	Lucknow	Fish genetics, cryo-preservation, conservation of fish stocks, etc.
(viii) National Research Center on Cold-water Fisheries (NRCCWF)	Bhimtal	Cold-water fisheries and aquaculture, Environment Impact Assessment, analytical procedures, etc.
2.0 College of Fisheries under the State Agriculture Universities	In eleven States	Graduate and Post-Graduate courses in several disciplines of fisheries and aquaculture. Short-term training programmes, extension of technology, etc.

Name	Location	Strengths
3.0 Institutions under the Ministry of Agriculture (Department of Animal Husbandry, Dairying & Fisheries)		
(i) <i>Fishery Survey of India</i>	Mumbai	Survey of resources, stock estimation, biological studies, monitoring, control and surveillance, etc.
(ii) <i>Central Institute of Fisheries Nautical Engineering and Training</i>	Kochi	Fishing craft and gear technology, nautical engineering, etc.
(iii) <i>Central Institute of Coastal Engineering for Fishery</i>	Bangalore	Harbour and coastal aquaculture engineering, economic evaluation of harbour infrastructure, etc.
(iv) <i>Integrated Fishery Project</i>	Kochi	Fish processing, value addition, post-harvest, etc.
B. Management Institutions		
1.0 MANAGE	Hyderabad	Extension-Management training, consultancy, action research, etc.
2.0 NAARM	Hyderabad	Extension-Management training, consultancy, action research, etc.
2.0 National Institute of Agricultural Marketing	Jaipur	Marketing management
3.0 Vaikunth Mehta Institute of Co-operative Management	Pune	Cooperative development
4.0 Institute of Rural Management	Anand	Co-operative management
5.0 Centre for Management in Agriculture, Indian Institute of Management	Ahmedabad & Lucknow	Agriculture management
6.0 SAMETIS	State HQs	Management training, extension and communication
7.0 State-Level Development and Administration (HRD) Institutions	State HQs	Management training, development administration, etc.
8.0 Extension Education Institutions (EEIs)	Regional	Extension and communication, etc.

Name		Location	Strengths
C. Financial Institutions			
1.0	National/ State-level Banking Institutions	National/ State HQs	Financial management, credit investments, etc.
2.0	BIRD	Lucknow	Financial management, training, etc.
3.0	College of Agriculture Banking	Pune	Agriculture banking
4.0	Micro – Finance Institutions	District/ Blocks	Micro-financing
D. Multipurpose Institutions			
1.0	BASIX	National and State HQ	Venture capital support
2.0	M S Swaminathan Research Foundation	Chennai	Multipurpose
3.0	Small Farmers Agri-business Consortium	New Delhi	Multipurpose
4.0	Bay of Bengal Programme Inter-Governmental Organisation	Chennai	Multipurpose
E. Extension and Transfer of Technology Institutions			
1.0	Krishi Vigyan Kendras	Districts	Technology assessment, Farmers training, etc
2.0	College of Fisheries under State Agriculture Universities	In eleven States	As listed under A (2.0)
3.0	ICAR Fisheries Institutions	Eight Institutions	As listed under A (1.0)