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CIFE
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DoF, Govt. of Assam
Guwahati

1st Zonal Workshop on

Policy Issues and HRD in Fisheries and Aquaculture for North Eastern States

Assam, Meghalaya, Nagaland, Manipur, Mizoram,
Tripura, Arunachal Pradesh and Sikkim

Guwahati

7 - 8, December 2006

Proceedings



Central Institute of Fisheries Education

(Deemed University-ICAR)

Fisheries University Road, Versova, Mumbai - 400 061

<http://cife.edu.in>

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Preparation and Editing

Dr. Dilip Kumar
Dr. Ananthan, P.S.
Dr. Shyam S. Salim
Dr. Arpita Sharma
Dr. R. S. Biradar
Dr. A. Vennila
Dr. Rama Sharma

External Expert Committee

Dr. P.V. Dehadrai
Dr. S.C. Pathak
Dr. Sriramachandramurthy
Prof. K. K. Ghosh
Dr. Bharat Sontakki

Workshop Coordinators

Dr. R. S. Biradar
Dr. Ananthan, P.S.
Dr. Shyam S. Salim
Dr. A. Vennila

Layout & Design

Dr. Ananthan, P.S.
Mr. D. Bhoomaiah

Published by

Director, CIFE, Mumbai

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PREPARATION OF THE DOCUMENT

This document is an outcome of a stakeholder consultation process conducted across the country as part of the research cum advocacy project on 'Developing a Policy Framework for Fisheries and Aquaculture Development'. This is the proceeding of the first Zonal Workshop on 'Policy Issues and HRD in Fisheries and Aquaculture for North Eastern States' held in Guwahati during 7-8 December 2006. After the five workshops, a series of participatory review cum expert consultation including a synthesising workshop was conducted at CIFE to extract specific policy inputs and prepare a draft policy framework for different sub sectors of fisheries and aquaculture. In the process the quality of each of these proceedings document got considerably improved. It is our hope that the document would be of use to all the stakeholders particularly the policy makers and development planners. Suggestions on the content of the document or on issues related to fisheries policy are welcome. The same may be addressed to Director, CIFE or emailed to director@cife.edu.in

Project Team**Principal Investigator:****Co-PIs:**

Dr. Dilip Kumar
Dr. R. S. Biradar
Dr. Ananthan, P.S.
Dr. Shyam S. Salim
Dr. S. N. Ojha
Dr. Latha Shenoy
Dr. Arpita Sharma
Dr. A. Vennila
Dr. R. P. Raman
Dr. B. B. Nayak

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Acronyms and Abbreviations

ASRB	Agricultural Scientist Recruitment Board	IMC	Indian Major Carps
CCRF	Code of Conduct for Responsible Fisheries	ITK	Indigenous Technical Knowledge
CIFE	Central Institute of Fisheries Education	KVK	Krishi Vigyan Kendra
CIFT	Central Institute of Fisheries Technology	MoEF	Ministry of Environment and Forest
CMZ	Coastal Management Zone	MPEDA	Marine Products Exports Development Agency
CRZ	Coastal Regulation Zone	NABARD	National Bank for Agricultural and Rural Development
D.F.Sc	Diploma in Fisheries	NCDC	National Co-operative Development Corporation
DDG	Deputy Director General	NE	North Eastern
DoF	Department of Fisheries	NECC	National Egg Coordination Council
EIA	Environment Impact Assessment	NGO	Non Governmental Organization
ETP	Effluent Treatment Plant	PG	Post Graduate
FAO	Food and Agricultural Organization	PPP	Public Private Partnership
FFDA	Freshwater Farmers Development agency	PPCP	Public Private Community Partnership
FISHCOFED	Fisheries Co-operatives Marketing Federation	PRI	Panchayati Raj Institution
FTC	Fisheries Training centres	R&D	Research and Development
GDP	Gross Domestic Product	RS	Remote Sensing
GIS	Geographic Information System	SHG	Self Help Group
HDI	Human Development Index	SPF	Specific Pathogen Free
HR	Human Resources	SPR	Specific Pathogen Resistant
HRD	Human Resource Development	TDS	Trickle Down System
ICAR	Indian Council of Agricultural Research	UG	Under Graduate
ILO	International Labour Organization	UGC	University Grants Commission
		WTO	World Trade Organization

Executive Summary

Fisheries and aquaculture are vibrant economic activities, and have been the fastest growing food production systems during the last three decades. Their significance and contribution towards agricultural and national economies, livelihood and nutritional security, employment generation and foreign exchange earnings have been enormous, though understated so far. It has been recognised that the huge but untapped coastal and inland resources, if developed effectively, could act as a powerful tool for poverty reduction through ensuring nutritional security and creating sustainable rural livelihoods. However, the realization of potential development is limited by absence of comprehensive policy environment.

To facilitate the process of developing fisheries and aquaculture policy, CIFE has organised consultative zonal workshops involving all stakeholders. This executive summary is based on the proceedings of the first Zonal Workshop on 'Policy Issues and HRD in Fisheries and Aquaculture for North Eastern States' consisting of States of Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Arunachal Pradesh and Sikkim. The workshop was organised by CIFE, Mumbai and DoF Assam in partnership with other Fisheries Departments of the region during 7-8

December 2006 in Guwahati. The policy issues that emanated from the workshop after interactive deliberations and intense dialogue among different stakeholders are given below:

1. Long term (5 years or more) fishing rights is necessary for open water bodies, ponds and tanks since due to short term leasing, the lease holders do not derive any incentive to undertake conservation measures, rather they harvest as much as possible for obtaining maximum benefits. The basic mechanism for developing and managing fishery resources in inland open-waters need allocation of long term fishing rights to maximize production and for sustainable development of ecosystem. In addition, Govt. should provide adequate training, administrative and financial support. Resource poor and women should be given priority in leasing. Similar leasing policy may be adopted for ponds and tanks.
2. As public private community partnership (PPCP) ensures participation of stakeholders, States should encourage it in building up adequate stock of quality stocking material for reservoirs and *beels*.
3. Decision making about zone wise closed fishing season in all natural

inland water bodies should be done at national level but the period of closed season, be left to the state agencies which may be finalized in consultation with stakeholders. Those affected by this closed season need to be adequately compensated by alternative livelihood options.

4. Biodiversity conservation to be initiated with active participation of local communities. It was also decided that special conservation programs be undertaken for rivers, lakes and beels by undertaking fish seed ranching programs. In addition to efforts of public sector, conservation measures be encouraged through act/incentives from all parties. As regards to conservation and sustainable uses of the bio-resources, biotechnological interventions are needed wherein breeding and stocking of seed of unconventional fishes be encouraged for maintaining biodiversity.
5. Conservation of wetland water bodies and their conversion into *patta* lands should not be permitted at all and developmental activities on any river systems and adjoining catchments areas should include conservational measures of fish habitat. Each state shall also identify and adopt an endangered /threatened fish species and project it as the "State fish". Protection and breeding of unconventional fishes be encouraged and use of poisons and explosives must be prohibited. Indiscriminate killing by fish poison, dynamite and electricity be made a cognizable offence and be severely punished as these are highly destructive practices. The laws regarding these issues have to be strictly implemented.
6. The diversity of native ichthyofauna has been a major determining factor in guiding the policies on introduction of exotic species. Quarantine facilities should be established to minimize the risk of exotic pests and diseases entering inside the state.
7. In North East there is a need to have a strategy and coordinating mechanism for common waters shared by different States. Different States should develop a coordinating mechanism to develop fishery resources of such waters conserved in co-ordination with the concerned participating States. Interstate coordination for issues related to conservation, environmental protection and marketing be encouraged by shared resources.
8. Decentralized production approach for seed production may be adopted with focus on quality and creation of facilities to ensure quality fish seed for which state government should

- provide the necessary framework for seed certification. As seed has become an interstate commodity, uniform guidelines need to be put in place like registration /accreditation of hatcheries and farms. 'Marketing Information System' be created for fish seeds as well as food fish.
9. With growing demand for fish; infrastructure support has to be given importance with awareness on fish handling and hygiene. Value addition of fish products be encouraged. Necessary capacity development programs with aggressive promotion of value added products are needed. Govt. should promote building feasible and viable value addition processing units.
10. Credit, saving, insurance, pension and medicare facilities need to be extended to fishers and their families. Fishers to be issued credit cards to meet their short term needs on the lines of kisan credit cards. Microfinance products need to be extended to fishers, fish farmers, SHGs and women. Formation of SHGs and micro enterprises need to be encouraged. Adequate insurance cover for fishers and their families, their craft & gears are to provided as fishing communities are a vulnerable group. Efforts are to be made to organize the fishing communities including revival of fisheries' cooperative societies. Co-ordination between the banking system and fishers is to be developed.
11. Gender equity should be ensured in all development programs. Women's role and their occupational problems should be documented. Women should be organized and capacity development programs should be implemented for them. Gender specific HRD programs be initiated at all levels with due consideration to the constraints faced by women. Empowerment of resource poor fishing communities and women is to be given priority through social, economic, and technical information inputs. Technologies for culture, packaging and transport of ornamental fishes need to be encouraged by the State Govt and women should be trained in these aspects, modern fisheries/aquaculture methods as well as alternative livelihoods. Development of support systems in the form of good community day care services for children and elderly be done.
12. Investments in education, health and nutrition also should be a focus. Social welfare programs need to be introduced for improving education, skills, health, nutrition and quality of life and HDI for which DoF can work in

coordination with rural development programs / PRI.

13. Strengthening of fisheries extension services is required by adopting innovative methods and participatory extension systems such as trickle down system of extension and orienting officials towards this system.
14. District level offices should be equipped with ICT, modern information and logistic support. Fortnightly fisheries news bulletins be brought out. Exchange of information by several methods through village information network of NIC, radio, TV and other media be encouraged. Technology extension programs like fish farmers melas at district level need to be organized.
15. HR Planning in terms of quantity, subject areas at State, regional and national level be performed and positions filled up with qualified personnel. B.F. Sc shall be made essential qualification for fisheries professionals. Appropriate training programs to be conducted for personnel at all levels. Present seniority based career advancement scheme to be changed to performance and merit linked scheme. DoF should be headed by a professional.
16. Available fisheries colleges in the region should be strengthened in terms of qualified faculty, infrastructure and library resources. All the States need to have full fledged State level Fisheries Training Centres with adequate faculty and infrastructure. FTCs in the States like Assam, Manipur, and Tripura should be further strengthened and modernised. CIFE may consider reviving D.F.Sc. programme / abridged course and also organize one month periodical customized refresher courses to DoF. PG programs need to be introduced in fisheries colleges in the region, after assessing HR requirement. Quality training literature for trainees and trainers be developed. Tailor made programs be offered through distance mode and other modern electronic tools.
17. In schools, fisheries as vocational program at 10+2 level be made available and fisheries be offered as elective.
18. The concept of fishery business centres and fishery clinics may be initiated in NE region. More entrepreneurship oriented Certificate and Diploma courses are required to be introduced in colleges, ICAR institutes, and State Training Institutes.

19. Development of rural infrastructure like hatchery, processing and training centres on cluster basis be initiated and programs like establishment of aquaculture village in each block be initiated.

development is largely conditioned by the government and NGO involvement and of course, the private sector. The government has been playing a leading role in the development of aquaculture and has been providing financial support to the sector. The government has been providing financial support to the sector in the form of subsidies, grants and loans. The government has been providing financial support to the sector in the form of subsidies, grants and loans. The government has been providing financial support to the sector in the form of subsidies, grants and loans.

A specialized Fisheries and Aquaculture Development Policy covering framework of Centre and state level policy framework for the sector are required. The need of the hour is to develop a policy framework which is comprehensive and covers all aspects of the sector. The policy framework should cover all aspects of the sector, including production, processing, marketing, and research and development. The policy framework should also cover the development of human resources and the development of infrastructure.

NGO Initiatives
In the recent past, NGOs have been playing a significant role in the development of aquaculture. They have been providing financial support to the sector in the form of subsidies, grants and loans. They have also been providing technical support to the sector. The NGOs have been playing a significant role in the development of aquaculture and have been providing financial support to the sector in the form of subsidies, grants and loans.

1. Introduction

Fisheries and aquaculture are vibrant economic activities, and have been the fastest growing food production systems during the last three decades. Their significance and contribution towards agricultural and national economies (4.6 per cent agriculture GDP and 1.3 per cent of India's national GDP respectively), livelihood and nutritional security, employment generation (11 million people) and foreign exchange earnings (Rs.7,245 crores) have been enormous, though understated so far. It has been recognized that the huge but untapped coastal and inland resources, if developed effectively, could act as a powerful tool for poverty reduction through ensuring nutritional security and creating sustainable rural livelihoods.

The overriding challenges are producing adequate and cheap food fish for all and improve the quality of life of fishers and farmers. This could be achieved only by addressing the issues of underutilization and low productivity in inland water bodies, sustainability of capture fisheries, huge post harvest losses, poor quality and low value addition, unregulated domestic markets and protective global markets and the low level of domestic fish consumption.

Need for fisheries policies

However, the extent and quality of

development is largely conditioned by the given policy and HRD environment. Lack of comprehensive and enabling policy framework at Central and State levels, lack of adequate and professionally skilled human resource resulting in poor implementation of development and welfare programs, ineffective and redundant services delivery systems and poor infrastructure development have almost limited the scope of fisheries development in India. Ironically, the importance of comprehensive policy and HRD has not been given sufficient attention so far.

A generalized Fisheries and Aquaculture Development Policy guideline framework at Centre and elaborate policy framework for the States are therefore the need of the hour. Only a radical rethinking and strategizing would help develop such a policy framework that can effectively obliterate the mismatch between the research and education systems on one hand and the development, extension gap / yield gap on the other.

CIFE initiative

In this context, CIFE has taken an initiative to organise five zonal workshops across the country with the active support and participation of Centre and State Departments of Fisheries, ICAR sister institutions and Union Ministry of Agriculture with the following objectives

given below. The first of the Zonal Workshops was held during 7-8 December 2006 at Guwahati for North Eastern States consisting of Assam, Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Arunachal Pradesh and Sikkim. The detailed program and the design of the workshop is furnished in Annexure I

Objectives of the workshop

- To review the policy related issues and recommend inputs for developing policy to support sustainable fisheries and aquaculture development
- To critically examine the service delivery systems in terms of its adequacy, accessibility and quality, and evolve an effective model with approaches and strategies
- To assess the present Human Resource status as well as the future requirements for fisheries and aquaculture development, and prepare strategies for HRD.

Workshop design

- The workshop was focused and flexible and conducted in a truly participatory and consultative mode.
- Inaugural session
- Technical session - Overview Session: Invited presentations by the different State Departments of Fisheries

- Technical session – Gap analysis with the formation of three working groups on policy issues, HRD needs and service delivery systems to deliberate and make specific recommendations.
- Technical session–Plenary session: Summary of each work group discussion were presented and specific recommendations / action points were evolved collectively
- Open session : The specific recommendations by each of the working groups were discussed in a participatory mode to evolve consensus and draft recommendations were evolved.
- Concluding session: The draft general recommendation were ratified by the house

Participants

- Directorate / Department of Fisheries (Secretary / Commissioner / Director / Deputy Director/ Middle & Entry level Officers)
- Representative Fishers / Farmers (small & medium farmers)
- Representatives of Co-op Societies and NGOs
- Entrepreneurs / Commercial Farmer/ Fisher

- Industry Representatives
- Academicians (ICAR/SAU/SU)
- Planners and Policy makers in the Govt.
- CIFE faculty

As expected, the participants attended the workshop with open mind and strong faith in participatory and consultative approach in addressing the workshop objectives. They participated and deliberated the session with requisite background material encompassing the different policy issues, HRD needs and service delivery systems in fisheries and aquaculture for the North Eastern States. The list of participants is enclosed in Annexure II.

Expected outputs

- Clearly identified policy gaps/needs and specific recommendations for comprehensive fisheries and aquaculture development policy.
- Thorough understanding of problems of present service delivery systems; and propose an indicative mode (s) of effective service delivery system.
- Identified HRD requirements of state fisheries Departments for productive, profitable and sustainable fisheries and aquaculture development and

action plans for fulfilling them

- A document with specific set of policy and HRD recommendations for each state, zones and the centres.

2. Inaugural Session

Central Institute of Fisheries Education, Mumbai and Department of Fisheries, Assam jointly organized a Zonal workshop on policy Issues and HRD needs in fisheries and aquaculture for North Eastern States during 7-8 December 2006 at Guwahati, Assam. The inaugural session of the zonal workshop commenced at 10.00 am on 7.12.2006. The participants included academicians, researchers, department of fisheries officials, extension officers, representative fishers, farmers, representatives of NGO's, co-operatives and industry from different North Eastern States in addition to the policy makers and experts from across the country.

Shri Noorjamal Sarkar, Honourable Minister for Fisheries, Irrigation and soil conservation, Government of Assam, the Chief Guest inaugurated the program. Dr. P. V. Dehadrai, ex-DDG (Fisheries), Indian Council of Agricultural Research (ICAR) was the Guest of Honour.

The inaugural session began with the welcome address by **Dr. S.C. Mukherjee**, Joint Director, CIFE, Mumbai. Dr. Mukherjee in his welcome address explained the need for the conduct of zonal workshop in the North Eastern States on account of the existing policy gaps and HRD need. **Dr. Dilip Kumar**, Director, CIFE,

Mumbai in his lucid presentation on the focal theme and the structural design of the workshop detailed the existing policy gaps in fisheries and aquaculture at the State and national level and the importance of CIFE's initiative and this workshop in evolving a policy framework. He then explained the specific objectives and the participatory nature of the workshop.

The Honourable Minister in his Chief Guest address thanked the organizers in choosing Guwahati, the Gateway of North East India, as a venue of the workshop. In the context of short fall in fish production in Assam, the Minister advocated the need to review the old rules and regulations of fisheries and aquaculture and to generate more of qualified human resources. He noted that the Government of Assam has recently come up with Fish Seed Act, 2005 to ensure quality and adequate fish seed, besides amending certain provisions of Assam Fishery Rules, 1953, and empowering Fisheries Department to register Fisheries Co-op. societies. Highlighting the huge potential for fisheries development available in the North Eastern region and particularly Assam, he urged greater R & D interventions and budgetary support from the fisheries institute and the central government. He recommended 100 per cent grant from centre for all the centrally sponsored schemes in all the North

Eastern States. The Minister expressed the hope that the zonal workshop will help in evolving a National Fisheries Policy with special emphasis on North East, which will go a long way in maintaining fish biodiversity and sustainable fish production thereby uplifting the socio-economic conditions of fish farmers in the region.

The Guest of Honour, **Dr. P. V. Dehadrai** in his address emphasised the need to work together and the relevance of the participatory approach in evolving the policy guidelines. Underscoring the contribution of fisheries in national economy and forex earnings, he opined that the target growth rate of 6.4 per cent during XI Plan period for fish production shall be easily achievable. Enabling policy environment and providing requisite human resource would aid this process, he opined.

After inaugurating the zonal workshop by lighting the lamp and reciting Saraswati Vandana, mementos were presented to the Chief Guest and Guests of Honour. Senior delegates like **Dr. Maniranjana Sinha**, Advisor (Fisheries) to Government of Tripura, **Dr. V.V. Sugunan**, ADG (Inland Fisheries), **Dr. V.R. Chitranshi**, Principal Scientist (Inland Fisheries), ICAR, **Shri Sarath Kumar Singh**, Director, Fisheries, Government of Manipur, **Shri San liao**, Director, Fisheries, Government of Nagaland, **Shri A. K. Roy**, Director of Fisheries, Government of Assam, **Shri D.**

Malekar, M.D. Assam Fish Seed Development Corporation, **Dr. S.C. Pathak**, Ex. CGM, NABARD were felicitated with mementos on account of their commendable service to the fisheries sector.

Dr. R. S. Biradar, Principal Scientist, CIFE delivered the vote of thanks and the program concluded with the national anthem.

3. Technical Session I: Fisheries Policy and HRD Perspectives of North Eastern States

An overview of the status of fisheries including regulatory measures was presented by the Directors, Department of Fisheries of Assam, Manipur and Nagaland and Dr Maniranjana Sinha, Advisor (Fisheries), Government of Tripura presented the status of Tripura fisheries. The session was chaired by **Dr. P.V. Dehadrai**, Former DDG (Fy), ICAR, while **Dr. D. P. S. Chauhan** was the Co-Chairman. **Dr. A. Vennila** acted as the rapporteur.

Dr. A. K. Roy, Director of Fisheries, Government of Assam presented the resources, demand and production of fish and the training needs of Assam fisheries department. Air breathing fish breeding, beel fisheries demonstration, ornamental fish culture, development of value-added products and EIA of water-bodies regarding agro-chemical pollution, development of market infrastructure, cold-water fisheries, eco-tourism development and capacity building of state departments are the areas identified for the overall fisheries development in Assam.

Dr. U. C. Goswami observed the lack of reliable database including seismic data and their impact on the aquatic biota from

Brahmaputra River and stressed that this requires research attention (Biodiversity Mapping). He opined that the fish migration is affected by the establishment of Ladders, Passages, etc. which needs thorough assessment.

Dr. P. V. Dehadrai emphasized the need for developing rural infrastructure in the form of establishment of hatchery, processing and training centres on a cluster basis. He also stressed the need to introduce fresh stock of common carps from Sri Lanka / Bangladesh which was also supported by **Dr. Dilip Kumar**.

Mr. Sarath Kumar Singh, Director of Fisheries, Government of Manipur made his elaborate presentation on the resources, demand for fish, recruitment policy adopted, staff position, training needs, problems for fisheries in the state and the existing Manipur Fisheries Act 1988 and Manipur Fisheries Rules 1998. **Mr. Singh** explained that though stringent rules are in place but these are difficult to implement. Problems faced by fisheries sector in the state include underutilized resources and gap in production and demand of quality seed. One year diploma course on Inland Fisheries Development and Administration is offered at Inland Fisheries Training Centre, Manipur. Besides, orientation program on latest techniques of aquaculture, field oriented program on breeding and culture of fish

and training on statistical data collection are imparted to the officers at various levels. He highlighted the financial crunch under the State Plan, which affects the execution of various programs. Non-availability of feed at a reasonable price was mentioned as one of the constraints faced by the aquaculture. At the end, he praised the demonstration program on prawn culture and training of fisheries officials on pen culture in Loktak Lake conducted by CIFE, Mumbai.

Dr. Tombi Singh, Dean, College of Fisheries, Tripura mentioned that water resources occupy one third of total area of the state and highlighted the rich biodiversity in beels. The production from capture fisheries has come down and conservation efforts are to be taken up on priority basis.

Mr. Sanliao, Director of Fisheries, Government of Nagaland described the present status of fisheries in Nagaland, culture systems and water resources available, constraints faced by the fisheries sector and strategies to be adopted. He expressed concern over lack of framed policy as such on fisheries in the State. He mentioned that the department has human resources shortage and stressed the need for the capacity building of personnel of State Fisheries Department in terms of numbers and technical competency. The streams/rivers

are owned by the tribal groups/ community/clans not by the Government. Deterioration of natural resources is going on an alarming way and conservation and developmental efforts need to be initiated by the State Government. He suggested the need for the utilization of all water bodies for fisheries and renovation of low productive ponds/idle ponds and tanks, capacity building of State Fisheries Department and appropriate policy framework for sustainable fisheries development.

Dr. S. C. Pathak highlighted the Community/Tribal ownership over the water resources and suggested for the formation of SHG's to manage, conserve and develop these resources with their active participation. With regard to human resources inadequacy, he suggested for outsourcing the developmental works

Dr. Maniranjana Sinha, Advisor (Fisheries), Government of Tripura highlighted the surplus production of seed by the state. About 95% of the population is fish eaters but the production is not able to keep pace with the demand. Aquatic resources are non-perennial in nature, and soil is acidic therefore the productivity is low in the State. The State Perspective Plan under implementation from 2005 provides for meeting the demand by way of adopting scientific fish culture in all the available water resources with a target of producing

3 t/ha. Programs like establishment of Aquaculture village in each block by 2011-12, orientation programs for fisheries staff, strengthening of the department, leasing Government fish farm to co-operatives and SHGs, enhancement of fisheries in open waters, ornamental fish breeding (local species), reclamation of available water bodies and setting up of modern aqua-shops, etc. are also undertaken.

Dr. R. K. Singh suggested capturing of the seed market. He mentioned that department is concentrated only with the creation of infrastructure and not concerning the organizational reforms or service delivery systems.

Dr. Dilip Kumar, Director, CIFE stressed that policies and programs should lay emphasis on profitability rather than production. He also suggested that the state should take up ornamental fish breeding and trade besides the live fish market.

Dr. Maniranjana Sinha cited the performance of SHG's in Tripura and their involvement in the management of fishery resources starting from fish feed manufacturing to processing and marketing activities. Similar set-up may be followed in Assam for leasing the water-bodies

Dr. S.C. Pathak was of the opinion that rivulets are entering into the farm lands, where running water aquaculture can be taken up.

Dr. P. V. Dehadrai expressed his concern over the carp culture protocol developed in late 1950s which is still followed and the time has come to translate the laboratory results to the field. He also stressed the need to minimize the operational cost to maximize the profitability.

Dr. Dilip Kumar reinforced that profit is important to the farmers rather than the production. He advocated productivity improvement in open waters through the principle of co-management with the involvement of communities concerned

Ms. Jamuna Hazarika from NGO (Assam) mentioned that policies are only on papers and not in action and called for the integration of multiple ownership existing over beels / water bodies (common development policy). She mentioned that leasing and settlement rates are very high and cannot be affordable by fishers. Community needs reduced leasing and settlement rates and clear-cut leasing policy.

The session concluded with the rapporteur's summary.

4. Technical Session II: Policy Gap Analysis

The policy overview session was followed by an informative session on how to analyse the existing gaps policy and regulatory environment. Dr. S.C. Mukherjee, Joint Director, CIFE chaired the session while Dr. D. R. S. Biradar, Dr. C. S. Purushothaman and Dr. S. D. Singh were the facilitators.

Dr. S.C. Mukherjee initiated the session with an overview of gap analysis and the purpose of the exercise. He opined that huge disparities exist in the different policy and HRD issues across the different States. He explained that gap analysis is a tool, which helps in reviewing the status, shortfalls, constraints and strategies for abridging the gap. He explained the modalities of the Gap analysis and the constitution of three work groups. He stated that three work groups will be formed to identify policy gaps, examine service delivery system, and specific HRD needs. The groups will be formed on the basis of expertise and work experience and adequate representation from the different stakeholders.

Each group was to select a team leader *with the help of facilitator. The roles of the* facilitator, team leader and the rapporteur were specified. The facilitator is to, facilitate and moderate the session and to

help the group to identify the team leader. The team leader is to lead, summarise and present before the house and to encourage and seek information from group members. The rapporteur is to document the proceedings of the session. Based on the work group interaction and outcome a joint session will be held wherein the summary of each work group discussion will be presented and specific recommendations/ action points will be evolved collectively.

Accordingly three work groups were identified based on the theme areas viz., policy issues, human resource needs and service delivery system. The work groups had adequate representation from the Directorate / Department of Fisheries (Secretary/ Commissioner/ Director / Deputy. Director / Middle & Entry level Officers), Representative Fishers / Farmers (small & medium farmers), Representatives of Co-op Societies, Representative NGOs, Entrepreneurs / Commercial Farmer/Fisher, Industry Representatives, Academicians and Researchers from (ICAR/SAU/SU) and Planners and Policy makers in the Government in addition to the CIFE faculty.

5. Technical Session III: Work Group Discussions & Recommendations

The three work groups consisting of about 20 participants each held parallel discussions in a detailed fashion and identified the gaps, after which suggested appropriate policy level interventions.

The outcome of the work group deliberations are presented below:

5.1. Work Group 1: Policy Issues in Fisheries and Aquaculture in the North Eastern States

The Team Leader for this work group was Dr. P. V. Dehadrai and the Facilitator, Dr. C. S. Purushothaman. Dr. Shyam S Salim and Dr. A. Vennila acted as Rapporteurs.

Open water fisheries management

- The States are having adequate under-utilized natural water resources. The revenue oriented management system of leasing is an age old system in which the open-water bodies are leased out. Due to short term leasing, the lease holders do not derive any incentive to undertake conservation measures, rather they harvest as much as possible for obtaining maximum benefits. The basic mechanism for developing and managing fishery resources in inland open-waters need allocation of long

term (5 years or more) fishing rights to maximize production and for sustainable development of ecosystem. In addition, Govt. should provide adequate training, administrative and financial support. Resource poor and women should be given priority in leasing. Similar leasing policy may be adopted for ponds and tanks.

- Fisheries development requires finance and states should encourage public private community participation (PPCP). PPCP should also be encouraged in building up adequate stock of quality stocking material for reservoirs and beels.
- Field level studies on cage and pen culture have shown good results with promise of optimum utilization of water bodies. Therefore, these technologies should be promoted.
- In North East there is a need to have a strategy and coordinating mechanism for common waters shared by different States. Different States should formulate a coordinating mechanism to develop fishery resources of such waters conserved in co-ordination with the concerned participating States.
- In public water bodies preference should be given primarily to resource

poor and women. All incentives need to be provided to ensure nutritional security by sustenance level fish farming, gender empowerment and livelihood resilience. It has a tremendous relevance in North-eastern States, where women are at the forefront of all rural activities.

Biodiversity

- The North-East India is a genetic treasure house of plant, animal and microbial resources. The region forms a distinctive part of the Indo-Burma Hotspot which ranks 6th among the 25 biodiversity hotspots of the world and is a prime one among the two identified for the Indian sub-continent. Participation of local communities in biodiversity conservation should be ensured. Care need to be taken while developing the riverine and floodplain resources with emphasis on conservation of biological resources and their sustainable utilization.
- Wetlands are life support systems for people living around and these are essential in many ways. Special conservation programs are to be undertaken for rivers, lakes and beels by undertaking fish seed ranching programs. Apart from efforts of public sector, the conservation measures should also be encouraged through act/incentives from all parties. The traditional knowledge has to be documented. This should be one of the thrust areas.
- The gene pools of the N.E. Region are invaluable genetic resources and can be put to use for the economic growth of this region in particular and to the nation in general. Biotechnological interventions are needed for conservation and sustainable uses of the bio-resources. Breeding and stocking of seed of unconventional fishes should be encouraged for maintaining biodiversity.
- As Ramsar Convention on Wetlands, provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources, the wetland water bodies will be conserved and their conversion into *patta* lands should not be permitted at all. Adequate environmental safeguards have to be incorporated in the lease clause, when water bodies are leased out. Wetland lease must ensure environmental security and upkeep for the water body as well as its biodiversity.
- There are studies to show that river systems are degraded due to development projects and as a result fish and other aquatic fauna decline significantly. In this context, it is

important that developmental activities on any river systems and adjoining catchments areas should include conservational measures of fish habitat.

- The populations of many species are decreasing at an unsustainable rate. Animals that have taken millions of years to evolve, that are invaluable to the ecosystem, have vanished from places where they once flourished. Even though some agencies like ZSI, WWI, MoEF are engaged in conservation, each state shall identify and adopt an endangered /threatened fish species and project it as the "State fish" to foster its conservation
- The North-East India is a genetic treasure house of plant, animal and microbial resources. Gene protection and breeding of unconventional fishes should be encouraged.
- Use of poisons and explosives must be prohibited since they are likely to indiscriminately kill fish without regard to species and sizes, endangering the existence of the fish stock and providing at one time more fish than can be consumed. They are also likely to cause other and often long-lasting damage to the local ecosystem. Indiscriminate killing by fish poison, dynamite and electricity be made a cognizable offence and be severely punished as these are highly destructive practices.
- One of the important factors in creating high productivity of valuable fishes is the regulation of fish stocks by means of protective measures such as closed areas and seasons. Accordingly, zone wise closed fishing season be decided at national level and the period of closed season should be left to the state agencies with stakeholders consultation. Those affected by this closed season need to be adequately compensated by alternative livelihood options.
- The diversity of native ichthyofauna has been a major determining factor in guiding the policies on introduction of exotic species. A major consideration affecting the policies on exotics is the conservation of the countries' faunistic diversity. Accordingly, quarantine facilities should be established to minimize the risk of exotic pests and diseases entering inside the state.
- Interstate coordination for conservation, closed season, environmental protection and marketing are to be encouraged by shared resources.

Aquaculture

- It has been shown that development and use of sustainable technologies offer the means of improving resource productivity and reducing the environmental harm of economic activity. Therefore, States should adopt advanced, sustainable, and proven technologies in aquaculture through appropriate forward and backward linkages.
- In the ornamental fish business, the ability to meet the customers' needs for high-quality fish is always a critical factor. Most of the markets for ornamental fish are for exports and also for high income groups in metro towns. For this, the fish must not only be attractive but also robust to withstand long air transportation. Hence, the use of modern packaging technology for transport as well as technologies related for their culture and packaging are required and should be encouraged by the state Govt.
- Fish business aqua shops and aqua business centers should be started at state capitals.
- As common carp is one of the oldest cultured and most domesticated fish, fresh stock of common carps from parent stock need to be introduced.
- Loss of productivity and of water from fallow ponds is of great concern. Therefore, all fallow water bodies be brought under fish culture.
- In North Eastern region, women are involved at different stages of aquaculture development and their role is important, which need to be documented. Gender equity should be ensured in all development programs. Women's role and their occupational problems should be documented. Women should be organized and capacity development programs should be organized for them. On job gender specific participatory training programs also need to be developed. Gender specific HRD programs be initiated at all levels with due consideration to the constraints faced by women. Empowerment of resource poor fishing communities and women be given priority through social, economic, and technical information inputs. Technologies for culture, packaging and transport of ornamental fishes need to be encouraged by the state Govt and women should be trained in modern fisheries/aquaculture methods and alternative livelihoods. Also development of support systems in the form of good community day care services for children and elderly be done.

Fish seed

- To achieve horizontal expansion, infrastructure for producing quality seeds with a cluster approach need promotion. Decentralized production approach need to be encouraged as North Eastern region has set a good example of privatization of seed production. In this region, seed quality is an issue rather than quantity, so focus need to be on quality.
- Fish quality and certification systems are important. Facilities will be created to ensure quality fish seed. State government should provide the necessary framework for seed certification.
- As seed produced has become an interstate commodity, there is need of uniform guidelines.
- Marketing Information systems is always a great help to the fishers. Therefore adequate Marketing Information System need to be created for fish seeds as well as food fish.
- Species wise seed and table size fish production data should be collected.

Credit, saving, insurance

- Fishers need adequate and timely credit for access to inputs and market. As of now credit through private

moneylenders dominates. Therefore on the lines with Kisan Credit cards, the fisher should also be extended credit cards for their short term needs.

- Micro credit and other micro finance products need to be extended to fishers, fish farmers, SHGs and women SHGs have made successful inroads in rural areas and are making noticeable impact. Formation of SHGs and micro enterprises need to be encouraged.
- Banks must become proactive and strive to build capacity among those in fisheries and unless banks take up capacity building in right earnest, expanding credit flows may not benefit the farmer. To build up the confidence of fisheries sector with the financial institutions, co- ordination between the banking system and fishers needs support.
- Fishers are one of the most vulnerable sections, given their low asset base and higher exposure to risks. Thus fishing communities need empowerment by awareness programs to avail institutional facilities for credit, insurance, savings and pension tools.

Marketing

- With growing demand for fish; awareness programs on hygiene and sanitation in fish handling,

infrastructure support will be given importance. All fish markets (including whole sale and retail) brought under such programs including effective surveillance.

- Value added products are slowly becoming popular as 'convenience food' in the wake of changing life styles. Though basically aimed at export market, these also have a high potential in the domestic market, value addition products with higher shelf life, be encouraged. Necessary capacity development programs need to be created with aggressive promotion.

Welfare measures

- Financial institutions need to be more proactive for developing fisheries and aquaculture.
- Fishing communities are highly vulnerable and the major risks confronting poor fishers are across the entire range of personal and health risks. In view of the high level of risks faced by the poor fishing population, their overall educational and awareness development needs attention. Fisheries insurance is necessary to protect this group against the threat of life and economic loss. Life/accident insurance and medicare facilities are lacking and need to be made available to fishers and their families.

- There has been decline in poverty yet, sizeable population continues to live below the poverty line. Human and social development through improvements in education, health care facilities, nutrition and access to other basic minimum services are critical in creating an environment conducive to higher productivity work and for improving the quality of life. Investments in education, health and nutrition need major support. Social welfare programs need to be introduced for improving education, skills, health, nutrition and quality of life.

- Panchayats in India are an age-old institution for governance at village level. Through the 73rd Constitutional Amendment, Panchayati Raj Institutions (PRI) was strengthened with clear areas of jurisdiction, authority and funds. PRI's have been assigned several development activities. DOF should work in coordination with Rural development programs and PRI.
- Technology extension Programs like Fish farmers melas at district level can provide good platform for updating exposure to the fish farmers and being service providers and beneficiaries closer.

5.2. Work Group 2: HRD needs in the fisheries and aquaculture in the North Eastern States

The Team Leader for this work group was Dr. Tombi Singh and the Facilitator, Dr. S.D. Singh. Dr. P. S. Ananthan acted as Rapporteur.

- The existing Fisheries College in the region should be strengthened in terms of faculty, Infrastructure, library resources, programs and linkages with other organizations
- All States should have FTC. To make available adequate trained human resources for training and extension support, FTCs in the States like Assam, Manipur, and Tripura should be further strengthened and modernised.
- Central Institute of Fisheries Education, Mumbai need to revive D.F.Sc. program/ abridged course for benefits of States fisheries departments/corporations officers and contribute to the capacity building of the State Departments of fisheries. CIFE need to strengthen one month periodical customized refresher courses to already trained officers for upgrading their technical and extension knowledge and skills including innovating and energizing approaches for people centered management of natural resources.
- Central schemes are needed specifically for the NE region to provide necessary exposure and updating of Fisheries personnel of NE Regions who are highly segregated by distance, culture and resource base scenario with that of mainland India and lack access to developments elsewhere. Group study tours at national and international level be undertaken for selected successful farmers and personnels as incentive for better performance and also under capacity building programs.
- There is a need for Human Resource Planning in terms of quantity, subject areas at state, regional and national level.
- For a more appropriate planning, database of natural resources as well as human resources employed directly or indirectly with the sector, a state wise database be made.
- Higher education in fisheries shall address requirements of development of skilled human resources, so that they are job creators rather than job seekers.
- There is need for more effective linkages among State Departments, NGO's, Fisheries co-op societies, Fisheries Colleges and ICAR Institutes

for strengthening the capacity of development personnel as well as grass root workers and beneficiaries.

institutes for HRD must be institutionalized through regular meetings at different level.

Fisheries Academics

- PG programs need to be introduced in the two fisheries colleges in the region, after assessing human resource requirement in the sector.
 - All the States essentially need to have full fledged State level Fisheries Training Centres / Institute with adequate faculty and infrastructure
 - In schools, fisheries as vocational program at 10+2 level be made available in more number of schools, and fisheries be offered as an elective subject at middle and higher level.
 - More entrepreneurship oriented Certificate and Diploma courses are required to be introduced in colleges, ICAR institutes, and State Training Institutes for graduates and undergraduates.
 - Strengthening the faculty positions, quality upgradation of teaching staff and Infrastructure facilities (labs, farms, class rooms, hostels etc) at the fisheries colleges.
 - Linkage among Fisheries Colleges, Dept. of Fisheries, NGO's and ICAR
- B.F. Sc graduates be made essential qualification for Fisheries Teachers at schools, especially where vocational courses are offered.

Human Resources of DoF

- Staff positions at different levels need to be filled immediately. Carefully examining the requirement and growth potential, the human resource demands be made in plan schemes.
- There should be mandatory foundation/orientation programs for officers at all levels. Existing programs if any need to be completely overhauled both in content and design, revised and strengthened
- Regular training programs / refresher courses for DoF staff
- Junior and middle level: generalized and specialized training programs be made mandatory; and linked to career advancement
- Senior level (Deputy. Director and above): Executive Development programme at regular intervals at reputed institutions be made mandatory; exposure visits to

successful organizations and institutions need encouragement.

- Present seniority based career advancement scheme to be changed to performance and merit linked scheme.
- Quality training literature for the trainees as well as trainers be developed
- Training programs be reorganized and focus should be on development of the sector covering technical, environmental, social, financial and management aspects.
- Tailor made training programs be offered through distance mode and other modern electronic tools.
- Regional Training Centres in North Eastern Region States be established to harness the training resources available across the country.
- Gender specific HRD programs be initiated at all levels in consultation with the participants and with due consideration to the constraints faced by them.
- Fisheries academics shall become an integral part of the formal and non-formal education system, and it shall be promoted at all levels for

generating skilled human resource for profitable and sustainable fisheries and aquaculture development

- DoF should be headed by a professional.

5.3. Work Group 3: Services Delivery System in the fisheries and aquaculture in the North Eastern States

The Team Leader for this work group was **Dr. S.C. Pathak**, while **Dr. R.S. Biradar** acted as Facilitator. **Mr. A.K.Verma** and **Mr. Ganesh Chandra** were Rapporteurs.

On the basis of deliberations the group decided to have services categorized into three levels namely field level, state and national.

Field level

- The formation and running of fisheries co-operatives is an important aspect of fisheries development. Fisheries co-operatives function with varying degree of success and also failures. A number of factors have hampered the growth of co-operative societies. So, efforts will be done to organise the fishing communities including revival of fishers' cooperative societies and empowering and augmenting fisheries resources management.

- The development of Insurance for the vulnerable groups in the fisheries sector in India faces a number of institutional, financial, and technical constraints in its establishment. But; adequate insurance cover for fishers and their families, their craft & gears will be provided as fishing communities are a vulnerable group.
- In view of the growing demands of fish and value added products govt. will promote in building feasible and viable processing units.
- Skill development of people is an important aspect for the development of any sector. Improvement programs on human resource skills with regard to fishing, marketing, processing, organizational development and marketing information will be undertaken.
- Empowerment of resource poor fishing communities like women and small scale aquaculture be given priority through social, economic, technical information inputs as this has multiplier effect.
- Fisheries resources as under control of different agencies which is affecting conservation and developmental efforts, they are either required to be brought under a single agency such as Department of fisheries.
- The concept of fishery business centres and fishery clinics may be initiated in NE region so as to facilitate self employment for fisheries graduates

State level

- Service delivery system in NE region requires maximum support at state level. The points agreed are enumerated as under:
- It is necessary to strengthen fisheries extension services as it can make a huge difference in the lives of the fishing communities. Fisheries extension services in all the States need to be strengthened to scale up the extension services. Ensuring its effectiveness the state need to follow innovative strategies and approaches including participatory extension delivery system.
- Information and logistic support is a need of the hour and the absence is a constraint. In view of this, the district level offices need to be equipped with modern information and logistic support.
- Shift to participatory extension system wherein the potential and strength of target group be harnessed for demand

driven and effective extension services delivery system. Innovative approaches with regards to participatory extension have to be evolved for better demand driven and effective service delivery system.

National level

- Fortnightly fisheries news bulletins can be of great help to the stakeholders as they can have an updated knowledge of the sector as well as the recent developments and trends. In this view, the ministry should publish fortnightly fisheries news bulletin for the benefit of fishers at large.
- Exchange of information by several methods has shown to have good results. In the age when communication is growing at rapid strides, the ministry should also disseminate the fisheries and aquaculture information through village information network of NIC, radio, TV and other media

6. Technical Session IV: Plenary Session - Presentation by Work Groups

The plenary session was chaired by **Dr. Manirajan Sinha**, Adviser, Government of Tripura and Co-chaired by **Dr V.V. Sugunan**, ADG (Inland Fisheries) ICAR. The respective team leaders presented the summary of each work group discussion and the action points before the full house for inviting comments from across the participants.

On behalf of team leader of **Work Group I on Policy Issues in Fisheries and Aquaculture**, the Rapporteur **Dr. Shyam S Salim** summarized the work group discussions and presented the salient outcome and policy level interventions (as given in 5.1) required for the development of fisheries and aquaculture in the North Eastern States. The group comprising of 20 members (see Annexure) discussed the policy needs in the fisheries and aquaculture in the North Eastern States. After elaborate discussion, the points were agreed upon.

Specifically, during the discussion, **Dr. Dilip Kumar** suggested that enabling policies for participation of communities in managing common property resources needs to be pursued. FAO rules may be taken into consideration in formulating policies. He also said that role of women in the sector

needs to be appropriately recognised and steps are to be taken to reduce the women's drudgery in the sector.

The summary of discussion of **Work Group II on HRD Needs** (as given in 5.2) was presented by the Rapporteur **Dr. P. S. Ananthan** on behalf of the team leader. The group comprising of 21 delegates (see Annexure) participated in the group discussion on human resource needs in the fisheries and aquaculture in the North Eastern States.

During the discussion **Dr. P.V. Dehadrai** suggested that Fisheries Colleges shall introduce student internships with industry during the program for increasing the employability as well as to orient the students to the needs of the industry. He also recommended that desirable qualification for recruitment through PSC for different posts in DoF shall be changed to B.F.Sc / M.F.Sc (modern degrees awarded) to professionalise the sector.

On behalf of the Group, the team leader **Dr. S.C. Pathak** summarized the discussion of **Work Group III on Services Delivery System** (as given in 5.3). The group comprising of 17 delegates (see Annexure) discussed the existing service delivery system with respect to fisheries and aquaculture in the North Eastern States of India. After the discussion the points were agreed upon.

7. Concluding Session :

Mr. P. K. Borthakur, Commissioner and Secretary, Fisheries, Government of Assam was the Chairman of the Session, who was also the **Chief Guest** on the occasion. Concluding session began with Dr. R.S. Biradar Principal Scientist, CIFE welcoming the Chief Guest Mr. P. K. Borthakur briefing about the objectives and outputs of the zonal workshop. He also explained about the different sessions of the workshop, stressed on the participatory mode of deliberations and targets achieved.

Dr. Dillip Kumar, Director, CIFE expressed his gratitude to Chief Guest, Mr. P. K. Borthakur, Secretary and Commissioner of Fisheries, Government of Assam for his august presence amidst busy schedule and presented the draft overall recommendations of the workshop which were the extracts of the nearly two days of intense deliberations for the comments of the house.

Mr. P. K. Borthakur, Secretary and Commissioner of Fisheries, Government of Assam in his address complimented the efforts of Central Institute of Fisheries Education, Mumbai for its pioneering efforts in developing a national fisheries policy framework through conducting the zonal workshop. He stressed the need for the policy interventions in the region in

order to bridge the gap between the ever growing demand and supply of fish. He also stressed on the full utilization of fisheries resource utilization and suggested suitable forward and backward linkages between the different stakeholders to ensure sustainable fisheries and aquaculture development. He concluded his address with the buzz word *fish is for food, fun, fashion and flourishing business*.

Dr. S. C. Mukherjee, Joint Director, Central Institute of Fisheries Education, Mumbai whole heartedly thanked the chief guest, participants, media and all logistic providers for the successful conduct of the zonal workshop.

Workshop Recommendations

1. Workshop felt that an enabling and comprehensive fisheries and aquaculture policy is of a *critical need* for sustainable fisheries and aquaculture development, and harnessing its potential for creating rural livelihood and nutritional security. In this context, the policy framework recommended by this Workshop can serve as a model guideline for respective States in formulating policies at state levels.
2. Besides, the policy framework developed in the Zonal Workshop can serve as an important input for

developing a National Fisheries and Aquaculture Policy. This will go a long way in preparing a bottom up planning and policy development that is sensitive to the concerns of all states and stakeholders (current as well as future). FAO Code of Conduct for Responsible Fisheries (CCRF) be also taken into consideration as it provides a framework for policy development. This will also help implementation of CCRF to which India is also a signatory.

3. HRD needs quantified in terms of number and subject matter can serve as the basis for the respective State governments are to initiate programs for capacity development of its personnel and in reinforcing the implementation mechanism. CIFE can come up with a detailed plan and strategies for addressing the HRD requirements of personnel connected with fisheries sector in the region
4. As indicated in the outputs of the workshop we need to move from the classic transfer of technology approach to participatory extension system wherein the potential and strength of target group is harnessed for demand driven and effective extension services delivery system. Fisheries co-management and farmers participated Trickle Down System

(TDS) of aquaculture are some of several such innovative approaches. These are well suited in the context of shortage of staff and limitations of conventional system.

5. The State governments in the North Eastern Region are requested to provide their feedback with milestones on the workshop recommendations which would help in the development of an overarching national policy.
6. The outcome and recommendations of other four workshops may also be included and sent for feedback from the different state government in developing draft guidelines for national level policy framework in fisheries and aquaculture

Annexure I
PROGRAM SCHEDULE

1st Zonal Workshop on

'Policy Issues and HRD In Fisheries and Aquaculture for North Eastern States

7-8, December 2006 - Guwahati

DAY I: 7.12.2006

Venue: Hotel Ambarish, Guwahati

9.30 am	Registration of the participants	
10.00 am	Inaugural session	
	Welcome Address	Dr. S.C. Mukherjee Joint Director ,CIFE
	Objectives and Design of the Workshop	Dr. Dilip Kumar Director,CIFE
	Address by the Guest of Honour	Dr. P.V.Dehadrai Former DDG(Fisheries) ,ICAR
	Inauguration of the Workshop by the Chief Guest	Mr. Noorjamal Sarkar Hon.Minister of Fisheries, Irrigation and Soil Conservation Government of Assam
	Address by the Chief Guest	Mr. Noorjamal Sarkar Hon.Min of Fisheries, Irrigation and Soil Conservation Government of Assam
	Vote of thanks	Dr. R.S.Biradar,CIFE Principal Scientist
10.45 am	TEA BREAK	
11.00-1.00 pm	Technical Session I Fisheries Policy and HRD Perspectives of North Eastern States Overview of the status of fisheries (State wise) /Flagging of issues Chairman : Dr. P.V.Dehadrai Co - Chairman : Dr. D.P.S.Chauhan Rapporteur: Dr. A .Vennila	Department of Fisheries, North Eastern States
1.00- 2.00 pm	LUNCH BREAK	
2.00 – 3.30 pm	Technical Session II Gap analysis Formation of Three working groups - HRD /Policy issues/ Service Delivery system/ Deliberations Chairman - Dr. S.C. Mukherjee Facilitators : Dr. R.S.Biradar Dr. C.S.Purushothaman Dr. S.D.Singh	Working Groups Group I – Policy Issues –Team leader – Dr. P. V. Dehadrai Group I – Policy Issues –Team leader – Dr.Tombi Singh Group I – Policy Issues –Team leader – Dr. S. C. Pathak

3.30 -4.00 pm	TEA BREAK	
4.00 -5.30 pm	Technical Session II Gap analysis (Contd.) Deliberations	Group discussion continued
10.00 -11.30 am	Technical Session III - Plenary Session Presentation by the working groups Chairman : Co Chairman : Rapporteur :	Team Leaders / Rapporteurs, Work Groups Dr. Mani Ranjan Sinha Dr.V. Sugunan Dr. Archana Sinha
11.30 -12.00 pm	TEA BREAK	
12.00 -12.30 pm	Open session	Preparation of Draft Recommendations
12.30 - 1.00 pm	Concluding session Recommendations and Action points Chairman : Mr. P .K. Borthakur IAS Commissioner and Secretary, Fisheries Government of Assam	
1.00 pm	Vote of thanks	Dr. S.C. Mukherjee Joint Director ,CIFE

Annexure II

List of Participants

Dr. P. V. Dehadrai

D 3/3403, Vasant Kunj
New Delhi - 110 070
Ph. 011-26899128
Email:pvdehadrai@yahoo.co.uk

Dr.V.V.Sugunan

ADF (Inland Fishery)
ICAR
KAB II, Pusa New Delhi 110012
vvsugunan@icar.org.in

Dr.Dilip Kumar

Director
Central Institute of Fisheries Education
Mumbai-400 061
dk.dilipkumar@gmail.com
022-26363404
Mob – 09867175702

Mr. Sarath Kumar Singh

Director of Fisheries
Government of Manipur
Imphal - 795 004 Tel. 0385-2414307
directorfy@yahoo.com

Shri. San liao

Director of Fisheries
Government of Nagaland
Kohima - 797 001
Ph. 09436005488; Fax: 0370-2270283

Dr. Mani Ranjan Sinha

Ex. Director, CIFRI &
Advisor, Dept of Fisheries,
Govt. of Tripura

Dr. S. K. ROY

Director of Fisheries
Government of Assam
Meen Bhavan,
Guwahati - 16 Assam.
Ph: 0361-2261421

Dr. R.C. Das

Officer in Charge,
CIFE Kolkata Centre
32, G.N. Block, Sector V,
Salt Lake city, Kolkata – 700 091
Ph: 033-23573893
Fax: 033-23575269 /
drrcdas@yahoo.co.in

Mr Debeshwar Malegar

Managing Director
Assam Fisheries
Development Corporation (AFDC),
Mother Teresa lane,
Zoo Narangi Road,
Guwahati -24, Assam

Dr. M.M. Goswami

Prof. Dept. of Zoology,
Guwahati University
Guwahati -14, Assam

Mr. Ramananda

Secretary, Joint Selungkhong
Pisciculture cum Livestock rearing C.S.Ltd.
Oina, Oinam Bishampur
Dist.Manspur
Tamenglong Manipur -222680
Phone 9856191900

Mr.Qinam Sunil Singh
Joint Selungkhong
Pisciculture cum Livestock rearing C.S.Ltd.
Oina, Oinam Bishampur
Dist.Manspur Tamenglong
Manipur – 222680

Mr Ranjan Ks.S
Subdivisional Fisheries
Dept. of Fisheries
Directorate of Fisheries Assam

Ms. Jamuna Hazarika
Dorothy Voluntary Association
Fauzdasipatty B.B.Road,
P.O.Nagaon, Dist.Nagaon,
782001 (Assam)
Ph - 98642-43908 ,
03672-233990
jemmie.hazarika @ reddiffmail.com

Shri Bijra Singh
Secy. Rural and Hill
Development Organisation (Ruhdo),
Wangoi, P.O.- Wangoi
Dist.- Imphal (west)
Contact No.9436278391
(M) 0385-2434156

Mr.Mridul Saharia
Secretary, Darrang Dist.
Fish Farmers Association Ward No.4,
Tenagabari, Mangaldai,
Darrang, Assam
Pin: 784125 / 9954387334

Mr.O.Imocha
Fish Farmer
Singjameiokeram
Leikai. Imphal 795001, Manipur
943602521

Mr .Kishore Kumar Sharma
Technical Officer (T-6)
CIFRI NER Centre Guawati
kishorecifri@yahoo.in
94351-91859

Dr.Asok Biswas
Technical Officer T-6
Northeastern Regional Centre of CIFRI
Housefed Complex,
Central Block, 4th Floor
Guawahi 781006.
ashokbiswas2000@yahoo.co.in

Dr.Balbir Singh
5 Church Lane,
Allahabad (U.P.) 211002
0532-2466599 / M-9936447449

Dr.A.K.Sahu
Principal Scientist
CIFA, Kausalaganga,
Bhubaneswar 755002
ashoksahu7@rediffmail.com
Mobile.- 09437074618

Ms G.Premi Devi Manipuri
Wangkhei Thangap
At. Mapal, Imphal,
Manipur, State
P.O. Imphal 795001-0773

Ms.Iswari Devi Manipuri
Social worker
Brahapur Thanga,
Pat Mapal, Imphal
Manipur, State. P.O. Imphal
795001 / 985271797

Dr.S.D.Singh

Head & P.S.

Div. of Fish Nutrition & Biochemistry

CIFE, Mumbai 61

Mobile:09870484392

sdsingh54@rediffmail.com

Mr.Abu Sayeed

Abn. Sayeed Fish Farmer

Vill. Godaimari,

P.O. Kashari,

Dist. Nowgong,

Assam - 245589

Mob. 9435 24227

Dr.R.S.Biradar

Principal Scientist

Central Institute of Fisheries Education

Mumbai -400 061

rbiradar@hotmail.com

Dr Archana Sinha

Principal Scientist

Central Institute of Fisheries Education

Kolkata Centre

Kolkata West Bengal

Mr..Budha Singh

Secy. The fellowship of Fisheries

Polk (Hubitak) Loktak Lakb

Sendra Chin6khong

P.O.Moirang 2442771

Dr.A.Vennila

Scientist

Central Institute of Fisheries Education

Mumbai -400 061

Mobile: 0932383668

vens_in@yahoo.com

Dr B.N.Tiwari

Scientist (SG)

Central Institute of Fisheries Education

Kolkata Centre,

Kolkata, West Bengal

Mr R. P. Unniyal

Assistant dircetor Hindi

Central Institute of Fisheries Education

Mumbai -400 061

Mobile: 09869116784

rpunniyal@yahoo.co.in

Ms. Revathy Dhongde

Technical Officer

Central Institute of Fisheries Education

Mumbai -400 061

Shri. P.K.Borthakur, IAS

Secretary and Commissioner of Fisheries

Department of Fisheries

Government of Assam. Dispur

Ph.: 0361- 2237048 (O); 0361-2261597

Dr. D. P. S. Chauhan

Retd. Dy. Commissioner

H.No. 132, Sector - 12, R.K. Puram

New Delhi - 110 012

Ph. 011-26106508; Mob.9810211789

Email: dps_chauhan@yahoo.com

Dr. S.C.Mukherjee

Jt. Director ,

Central Institute of Fisheries Education

Mumbai-400 061

subhasmukherjee@yahoo.com

022-263190657 / 022-263302232

Mob - 9821086297

Dr. Tombi Singh
Dean
College of Fisheries
Lembuchera, Tripura (W)
Pin - 799 210

Dr.P.C.Mahanta
Director, NRCCWF
Bhimtal, Uttar Pradesh
pcmahanta@rediffmail.com
05942-247279 , 247280 / 05942-247943
(Fax) Mobile no: 09415419949

Dr. Mahadev Choudhury
Principal Scientist
North Eastern Regional Centre (CIFRI)
House Fed Complex, Central Building,
4th & 5th floor, Dispur, Guwahati 781006
0361-2228486, 2224893

Dr. W.S. Lakra
Director, National Bureau of Fish Genetic Resources
Canal Ring Road, P.O. Dilkusha ,
Lucknow - 226 002. Uttar Pradesh
Ph.0522-44244041/43 Fax:2442403
Email : lakraws@hotmail.com

Dr.V.R.Chitranshi
Principal Scientist
ICAR Head Quarters.KAB II,
Pusa, New Delhi
(011) 2584812
Email chitranshi@icar.org.in

Dr.Omeo Kr.Datta
Prof, College of Fisheries,
Assam Agri. Uni.
Raha 782103. Assam
03672-285719 (Fax)

Prof.Umesh C.Goswami
Sectional President
Guwahati University
Guwahati Assam
ucgoswami@rediffmail.com

Mr. Herojit Singh
Joint Selungkhong
Pisciculture cum Livestock rearing C.S.Ltd.
Oina, Oinam Bishampur
Dist.Manspur
Tamenglong Manipur - 222680

Mr R.Rajanglung
Fish farmer
M.K.dhan, Assam
2652771

Mr.Pratul Barman
F.E.O., Kamrup
Meen Bhawan,
Guwahati 1, Assam
Dist.Kamrup, Assam
9864116577;
pratulbarman@rediffmail.com

Dr.Kamal Sarma
Assistant Professor
College of Fisheries,
AAU Roha.
Phone : 03612513410 (R),
03672285719 (O)
kamalsarma6@rediffmail.com

Ms Sukanya Goswami
Assistant Social Development Specialist
(ASDS), ARIAS Society Khanapara
sgoswami 305@sify.com
094352-61521

Mr Dhauabir Singh
Fish Farmer
Niugombam Mayailiki
Manipur, Imphal 795001
Mo. No.9862271121

Sri Chandra Kamal Bhagawati
President,
Educated Anusutit Jati Association,
Assam (NGO)
Uzantazaz Gauwhati 781001
Assam
Mobile no: 99540-27958

Sri Prafulla Bharali
Treasurer Educated
Jali Association Assam(NGO)
Uzanbazon,
Guwahati 781001
Mobile No; 98641-32954

Dr.K.Kalita
OSD/Dean
College of Fisheries Assam
Agri.University,
Raha 782107.
03672-28580 , 295719 (R),
09435062531

Mr Ganesh Chadra
Scientist (CIFRI Centre)
Guwahati Assam
ganeshicar@gmail.com

Mr Padma Kt. Hazarika
Dy.Project Director/Tech.Manager
AFDC Ltd.
Zoo-naneagi Road,
0361-2412507 (O)
98642-07738, 94356-72543

Dr.M.D.Aftabuddin
Scientist (S.S.) NERC, CIFRI,
Housefed Complex,
4th Floor
Guwahati 781006
Ph.No.99547-10108/94351-91363
E.mail - mdaftab73@reddiffmail.com

Mrs. Kasturi Niva Gogoi
Fishery Extension Officer
Office of the District Fisheries
Development Officer
Dist. Kamrup,
Guwahati 781001
Dighalipukhuri (North).
Mobile 98640-22649

Dr R.K.Singh
Principal Scientist
CRIIRS, Hazaribagh, Bihar

Dr.M.Ali
Asstt.Commissioner (Fy)
DAHD& F
New Delhi
011-23389419 (O)
9968166842 (M)

Dr.C.S.Purushothaman
Principal Scientist
Central Institute of Fisheries Education
Mumbai -400 061
Mobile: 09820334010
cspuru@indiatimes.com

Dr.V.K.Tiwari
Senior Scientist
Central Institute of Fisheries Education
Mumbai -400 061
virendrapt@yahoo.co.in

Dr.P.S.Ananthan

Scientist

Central Institute of Fisheries Education

Mumbai -400 061

anandhu3@rediffmail.com

Mobile: 09967035010

Mr Ajith Kumar Verma

Scientist

Central Institute of Fisheries Education

Mumbai -400 061

Mobile: 09969049032

akverma45@yahoo.com

Dr. A.K.Reddy

Technical officer

Central Institute of Fisheries Education

Mumbai -400 061.

Mobile: 09324725229

Mr. Pratap Kumar Das

Technical Officer

Central Institute of Fisheries Education

Mumbai -400 061

pkdas@yahoo.co.in

Dr.Shyam S Salim

Scientist(Senior Scale)

Central Institute of Fisheries Education

Mumbai -400 061

shyamssalim@rediffmail.com

Mobile: 09819357981

Annexure III

List of Participants in Work Groups

Work Group I : Policy issues in fisheries and aquaculture

1. Dr.P.V.Dehadrai -Team leader
2. Dr.C.S.Purushothaman – Facilitator
3. Dr,Sarth kumar Singh
4. Shri Ramananda
5. Dr.V.V.Sugunan
6. Mr G.Prem Dhas
7. Dr.M.Ali
8. Dr.D.K.Kaushal
9. Dr. P.C.Mohanta
10. Dr.Sen Liao
11. Dr.A.K.Roy
12. Mr Umanada
13. Mr O.Imocha
14. Th.Bira Singh
15. Mr Bhupen Kumar Nath
16. Dr.W.S.Lakra
17. Dr.B.Lohan
18. Dr.A.K.Sahoo
19. Dr.A.Vennila - Rapporteur
20. Dr.Shyam S Salim - Rapporteur

Work group 2: HRD needs in fisheries and aquaculture

1. Dr Tombi singh -Team leader
2. Dr.S.D.Singh – Facilitator
3. Mr Rajanglung
4. Ms Iswomi Devi
5. Dr.R.C.Das
6. Mr Sanjay Sharma
7. Dr Balbir Singh
8. Mr Abu Sayd
9. Dr B.K. Bhattacharya
10. Dr. Archana Sinha
11. Mr P.Bharati
12. Dr. Bogola
13. Dr.U.C.Goswami
14. Shri Budhasys
15. Ms Jamuna Hazarika
16. Dr.Aftabuddin
17. Dr.V.K.Tiwari
18. Mr. Pratul Barman
19. Mr. Bhagban Kallita
20. Dr.M.M.Hussain
21. Dr.P.S.Ananthan –Rapporteur

**Work Group III:
Service delivery System in fisheries and aquaculture**

1. Dr. S.C. Pathak – Team leader
2. Dr. V.K. Tiwari
3. Dr. Dilip Kumar
4. Dr. A.C. Dutta
5. Dr. S.C. Mukherjee
6. Mr. S. Pathak
7. Dr. V.R. Chitranshi
8. Dr. A.K. Reddy
9. Dr. R.S. Biradar –Facilitaor
10. Dr. Ashok Biswas
11. Dr. R.P. Raman
12. Mr. Kamal Das
13. Dr. B.N. Tiwari
14. Mr. Mridul Saharia
15. Mr. Pafulla Bharali
16. Mr. Pafulla Bharali
17. Mr. Ganesh Chandra – Rapporteur

Annexure IV Feedback from Workshop Participants

The participants of the workshop were provided with a feedback form to evaluate the program on the utility, relevance, conduct, representation and other logistic designs. In addition they were asked to spell out the most impressing factors, possible improvements and inherent weaknesses of the workshop. The feedback provided will be utilized as a corrective mechanism in the organization of the future workshops. Of the 60 participants, 35 participants furnished the details the evaluation of the feedback revealed the following:

Sr.No	Parameter	No. of respondents		
		VS/SA	S/A	NS/SD
1	How do you rate the overall utility of the workshop?	32 (91.43)	3 (8.57)	0 (0.00)
2	Whether the workshop was relevant to your (organizational) needs?	28 (80.00)	5 (14.30)	2 (5.70)
3	Do you think the workshop was timely given the existing policy gaps?	25 (71.45)	9 (25.65)	1 (2.90)
4	Whether the workshop was conducted in a participatory mode?	26 (74.25)	8 (22.85)	1 (2.90)
5	Do you think the workshop objectives were satisfactorily addressed by the deliberations?	30 (85.70)	5 (14.30)	0 (0.00)
6	Whether the design and format of the workshop was satisfactory given the nature of objectives and expected outputs?	28 (80.00)	7 (20.00)	0 (0.00)
7	Whether the participants were representative of all stakeholders?	23 (65.70)	9 (25.65)	3 (8.65)
8	How do you rate the overall organisation of the workshop?	30 (85.75)	4 (11.50)	1 (2.90)
9	Are you satisfied with the venue and time of the workshop?	31 (88.50)	4 (11.50)	0 (0.00)
10	Are you satisfied with the accommodation arrangements?	29 (82.85)	5 (14.30)	1 (2.90)
11	Are you satisfied with food and refreshments?	29 (82.90)	6 (17.10)	0 (0.00)
12	Are you satisfied with the transportation arrangements?	28 (80.00)	6 (17.10)	1 (2.90)
13	Are you satisfied with the logistics support during the workshop?	28 (80.00)	7 (20.00)	0 (0.00)

Figures in parenthesis indicate percentage to total

VS	Very Satisfied	SA	Strongly Agree
S	Satisfied	A	Agree
NS	Not Satisfied	SD	Strongly Disagree

Our Locations

Headquarter	Centres	
Central Institute of Fisheries Education Fisheries University Road Seven Bungalows Andheri (W), Mumbai-400 061 Phone : +91 22 2636 1446/7/8 Fax : +91 22 2636 1573 http://www.cife.edu.in Email: contact@cife.edu.in	CIFE Centre, Kolkata 32, G. N. Block, Sector-V Salt Lake City Kolkata - 700 091 (West Bengal) Ph : 033 - 2357 3893 Fax : 033 - 2357 5269 email: kolkatacentre@cife.edu.in	CIFE Centre, Rohtak Lahli, Via Anawal Rohtak - 124 411 (Haryana) Ph : 01258 - 253595 Tele. Fax : 01258 -253506 email: rohtakcentre@cife.edu.in
	CIFE Centre, Kakinada Near Old Burma Shell Beach Road Kakinada - 533 007 (A.P.) Tele. Fax : 0884 - 2373602 0884 - 2379146 email: kakinadacentre@cife.edu.in	CIFE Centre, Powarkheda Powarkheda, Dist. Hoshangabad - 461 110 (M.P.) Ph : 07574 - 227280 Fax : 07574 - 227208 email: powarkhedacentre@cife.edu.in