

3<sup>rd</sup> Zonal Workshop on  
**Fisheries and Aquaculture Policy:  
Responsible Fisheries and Sustainable  
Aquaculture Perspectives for  
West Coast States**

Goa, Gujarat, Karnataka, Kerala, Maharashtra and  
Union Territories of Daman and Diu, Dadra & Nagar Haveli  
and Lakshadweep

Goa  
21-23 June 2007

Organized

Jointly by



CIFE  
Mumbai

ICAR-RC for Goa  
Old Goa



DOF,

Government of Goa

Proceedings



3



**Central Institute of Fisheries Education**  
(Deemed University-ICAR)

Fisheries University Road, Versova, Mumbai - 400 061

<http://cife.edu.in>

**3<sup>rd</sup> Zonal Workshop on  
Fisheries and Aquaculture Policy:  
Responsible Fisheries and Sustainable  
Aquaculture Perspectives for  
West Coast States**

**Goa, Gujarat, Karnataka, Kerala, Maharashtra and  
Union Territories of Daman and Diu, Dadra & Nagar Haveli  
and Lakshadweep**

**Goa  
21-23 June 2007**

# **Proceedings**



**Central Institute of Fisheries Education**

**(Deemed University-ICAR)**

**Fisheries University Road, Versova, Mumbai - 400 061**

**<http://cife.edu.in>**

## Credits

### Preparation and Editing

Dr. Dilip Kumar  
Dr. Shyam S. Salim  
Dr. Latha Shenoy  
Dr. R. S. Biradar  
Dr. Ananthan, P.S.  
Mr. Satish Kamat

### External Expert Committee

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

### Workshop Coordinators

Dr. Dilip Kumar  
Dr. Shyam S. Salim  
Dr. Latha Shenoy  
Dr. R. S. Biradar  
Dr. Ananthan, P.S.  
Mr. Satish Kamat

### Layout & Design

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

### Published by

Director, CIFE, Mumbai

### Citation

Dilip Kumar *et al*, 2007. Proceedings of 3<sup>rd</sup> Zonal Workshop on 'Fisheries and Aquaculture Policy: Responsible Fisheries and Sustainable Aquaculture Perspectives for West Coast States' held in ICAR-RC, Goa during 21-23 June 2007, CIFE, Mumbai.

Copyright: Central Institute of Fisheries Education, Mumbai, 2008

### 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 3<sup>rd</sup> Zonal Workshop on 'Fisheries and Aquaculture Policy: Responsible Fisheries and Sustainable Aquaculture Perspectives for West Coast States' consisting of Gujarat, Maharashtra, Goa, Karnataka, Kerala, UTs Daman & Diu, Dadra & Nagar Haveli and Lakshadweep held in ICAR-RC, Goa during 21-23 June 2007. 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](mailto:director@cife.edu.in)

## Project Team

### Principal Investigator:

Dr. Dilip Kumar

### Co-PIs:

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

## TABLE OF CONTENTS

### Acronyms and Abbreviations

Executive Summary .....	1
1. Introduction .....	9
2. Inaugural Session .....	13
3. Technical Session I: Status of Fisheries and Policy Issues - An Overview .....	15
4. Technical Session II: Open Forum - Stakeholders Perspectives .....	19
5. Technical Session II: Policy Issues in Capture Fisheries .....	21
6. Technical Session III: Policy Issues in Aquaculture .....	25
7. Technical Session IV: Work Group Discussion & Recommendations .....	29
7.1 Work Group 1: Policy Issues in Marine Capture Fisheries .....	29
7.2 Work Group 2: Policy Issues in Inland Capture Fisheries .....	31
7.3 Work Group 3: Policy Issues in Freshwater Aquaculture .....	32
7.4 Work Group 4: Policy Issues in Brackishwater Aquaculture .....	33
8. Technical Session V: Policy Issues in Processing, Markets and Trade .....	35
9. Technical Session VII: Work Group Discussion & Recommendations .....	37
9.1 Work Group 5: Policy Issues in Processing and value Addition .....	37
9.2 Work Group 6: Policy Issues in Markets and Trade .....	37
9.3 Work Group 7: Policy Issues in HRD .....	38
9.4 Work Group 8: Policy Issues in Service Delivery System .....	39
10. Concluding Session .....	41
Annexure I : Program Schedule .....	i
Annexure II : List of Participants .....	v
Annexure III : List of Work Group Participants .....	xiv
Annexure IV : Feedback from Workshop Participants .....	xviii

## Acronyms and Abbreviations

ASRB	Agricultural Scientist Recruitment Board	MFRA	Marine Fisheries Regulation Agency
CAA	Coastal Aquaculture Authority	MoEF	Ministry of Environment and Forest
CCRF	Code of Conduct for Responsible Fisheries	MPEDA	Marine Products Exports Development Acts
CIFE	Central Institute Of Fisheries Education	NABARD	National Bank for Agricultural and Rural Development
CIFT	Central Institute of Fisheries Technology	NCDC	National Co-operative Development Corporation
CMFRI	Central Marine Fisheries Research Institute	NECC	National Egg Coordination Council
CMZ	Coastal Management Zone	NGO	Non Governmental Organization
CNG	Compressed Natural Gas	NRI	Non Resident Indian
CRZ	Coastal Regulation Zone	PPP	Public Private Partnership
DDG	Deputy Director General	PPCP	Public Private Community Partnership
DoF	Department of Fisheries	R&D	Research and Development
EIA	Environment Impact Assessment	RS	Remote Sensing
ETP	Effluent Treatment Plant	SHG	Self Help Group
FAO	Food and Agricultural Organization	SPF	Specific Pathogen Free
FFDA	Freshwater Farmers Development agency	SPR	Specific Pathogen Resistant
FISHCOFED	Fisheries Co-operatives Marketing Federation	TDS	Trickle Down System
GDP	Gross Domestic Product	UGC	University Grants Commission
GIS	Geographic Information System	WTO	World Trade Organization
HR	Human Resources		
HRD	Human Resource Development		
ICAR	Indian Council of Agricultural Research		
ILO	International Labour Organization		
IMC	Indian Major Carps		
KVV	Konkan Krishi Vidyapeeth		

## Executive Summary

Indian fisheries and aquaculture sector has been growing at a faster rate than crop and livestock sectors. The sector contributes to the livelihood of a large section of economically under-privileged population, and has assumed greater significance in changing scenario of rising income, growing urbanization and unfolding globalization. However, there are still vast underutilised and untapped resources having potential for development, which is being limited greatly by the absence of comprehensive and an enabling policy framework at the Central and State levels. Policy support and institutional innovations would be prerequisite for sustainable and equitable growth.

CIFE, Mumbai in association with ICAR Research Complex, Goa and Department of Fisheries, Goa organized 3<sup>rd</sup> Zonal Workshop on 'Fisheries and Aquaculture Policy: Responsible Fisheries and Sustainable Aquaculture Perspectives for West-coast States consisting of Gujarat, Maharashtra, Karnataka and Kerala, and the Union Territories of Daman & Diu, Dadra & Nagar Haveli and Lakshadweep during 21-23 June 2007 at Old Goa, Goa. The participants included academicians, researchers, officials from fisheries departments of west-coast states, representatives of NGOs, fishers,

extension officers, officials from fishery industries, mechanized boat fishermen's association, fish producers' federation, and associations of fishery industry from the west coastal states in addition to the policy makers and experts from across the country.

The overall objective was to sensitize and facilitate the process of developing an overarching Fisheries and Aquaculture Policy Framework at the Centre and a comprehensive fisheries policy in the states. The workshop consisted of inaugural session, overview session, parallel working group discussions, joint sessions, and a plenary session. It provided a platform where the policy-related issues in different sub sectors of fisheries and aquaculture from the concerned states were subjected to detailed discussion and critical feedback obtained by the stakeholders, particularly the fishers, farmers' fisheries department officials and the experts. The salient policy issues which emanated from the workshop after interactive deliberations and intense dialogue among the different stakeholders are given below:

1. Inter sectoral *viz.*, artisanal, motorized and mechanized sector conflicts occur due to the non compliance of the Marine Fisheries Regulation Acts and CCRF. For compliance of these Acts, participation of the stakeholders is

essential. Accordingly, the demarcation of fishing areas for different vessels should be made in terms of fishing rights. Customary/traditional rights should be recognised/ ensured for the fisher folk. All policy decisions related to the marine capture fisheries sector, coastal regulation zone and infrastructure development along the coast should be taken after due consultation with the coastal fishing communities who are the primary stakeholders. As India is a signatory to the Code of Conduct for responsible Fisheries guidelines any policy formulated must also take into account its compliance.

2. The Coastal Regulation Zone is under review by Ministry of Environment and Forest, Government of India for the introduction of Coastal Management Zone based on the recommendations of the Swaminathan Committee of 2005. In the context of the CMZ it is important to safeguard the interest of the coastal fishery resources, livelihood dependence, and aquaculture. The developmental projects in the coastal areas should be specially examined for environment clearance from the fisheries point of view.
3. Introduction of closed season for fishing is known to be one of the ways

of rebuilding overexploited stocks but such an action results in loss of livelihood for the fishers during the ban period. Governmental interventions are required to provide alternative livelihoods to provide sustenance to the fishers during the ban period according to the Minimum Rural Employment Guarantees Scheme (MREGS). It was pointed that fishers do not receive adequate relief during the closed season. It is therefore recommended that the Government of India, Ministry of Agriculture in consultation with the concerned maritime state governments initiate a formal dialogue with affected parties and offer suitable livelihood opportunities.

4. In order to curb the ever increasing fishing fleets and indiscriminate fishing there is an urgent need for the compulsory registration of crafts and gear. Also, fishing methods like poisoning, dynamiting and electrical fishing have deleterious effect on eco systems including environment, fishery resources etc. Hence prohibition of these destructive fishing methods should be strictly implemented.
5. There is no standardized definition and there exists a lack of clarity in many of the terminologies used in defining the fisheries resources and

- its management. This aspect needs to be to be addressed with the constitution of a working group involving trade and development officers with fisheries scientists for defining different terminology used in aquaculture and fisheries and related aspects. Also, the States need to upgrade and standardize the data collection system for which the Centre may promote machinery utilising expertise and experience of various ICAR and Government of India organizations. A sound database on all aspects of fisheries needs to be developed at block, district and state level for policy formulation ensuring sustainable development of the sector
6. The grounds beyond 120 m in the EEZ of the country are not adequately exploited because of thrust on trawling in the inshore grounds and lack of shrimp grounds in the relatively deeper areas. As the inshore trawling grounds cannot offer scope for increasing production, the solution for increased production lies in diversifying to other fisheries resources like tuna, other large pelagic resources and oceanic squids. It is recommended that the MoA with the involvement of NFDB facilitate conversion /diversification of vessels larger than 60 feet by providing all equipments and gear at subsidized rates.
  7. For development of inland capture fisheries it was suggested that a detailed protocol for management of reservoirs needs to be developed taking into account the co-management principles and also livelihood concerns of people living in proximity of the resource while granting the leasing rights for fishing.
  8. Linking of riverine resources was suggested as an appropriate measure for resolving the unending conflicts amongst different States on the issue of sharing of water resources. Therefore, riverine management must come under the concurrent list. Appropriate management measures are the need of the day for conservation and habitat restoration of the riverine resources.
  9. The ownership by multiple agencies of open water resources makes the inland ecosystems quite complex to manage. The conflicting interests of different owners / users shall be resolved by making the relevant department's party to the policymaking. The criteria for assigning and granting of ownership and fishing rights shall be clearly delineated with the fishing rights allocated to the Department of Fisheries. The present criteria of

revenue generation for leasing and licensing of water bodies shall be redrawn and reoriented keeping the livelihood concerns of the primary stakeholders. The management of ponds and tanks of all State owned water bodies should be entrusted to the DoF for fisheries development irrespective of ownership.

10. Water resource in the inland fisheries resource like rivers, reservoirs, and lakes involve multiple users and different monitoring agencies like irrigation, forestry, environment and tourism. In order to evolve an effective inland resource management strategy an interdepartmental co-ordination committee comprising the different users may be constituted. Demand assessment for water for fisheries and aquaculture to be done at national level so that transferring water out of non remunerative sectors can be done towards priority and other potential sectors. In order to evolve an effective inland resource management strategy an interdepartmental co-ordination committee comprising the different related Ministries viz., Agriculture, Water resources and Ministry of Environment and Forest including related departments is strongly recommended in implementing the policy.

11. In order to facilitate faster aquaculture development in the country it is necessary that aquaculture is to be treated at par with agriculture for the purpose of energy and water charge, credit, tax relief agriculture subsidized electricity and transportation (airfreight), institutional finance and insurance etc as has been done by Government of Bihar. Also, availability of quality seed in time is a limiting factor in aquaculture production. In order to encourage seed market it was felt that there is a need to provide concessional charges for air and rail freight for seed transportation. In order to ensure the availability of adequate and quality seed (SPF and SPR seeds) it is required to encourage PPCP in establishing hatcheries and seed farms, establishing and enforcing quality standards and certification mechanisms for seed, feed and chemicals through appropriate regulatory measures by the States concerned

12. The guiding principle in deciding the lease of land and water bodies should be based on the livelihood opportunities of the primary stakeholders with preference to SHGs, women, unemployed educated youth and tribals, and also on long term basis. The large reservoir may be

leased out to private individuals / entrepreneurs / public undertakings / registered companies through open auction and sealed tenders but with employment opportunities to local fishers. The priorities in the fishing rights should be given to the displaced /affected/ousted population by forming fishers groups. Leasing of ponds and tanks shall be for a minimum period of seven years, with a broad principle of development orientation (preference to be given to fishers cooperative, self help groups, and educated unemployed youth) and adopting of a single window clearance system for leasing. In the land leasing policy for brackishwater aquaculture, development oriented leasing policy as existing in Gujarat may be adopted.

13. The National Committee on the introduction of exotic species should ensure that their decisions are implemented strictly. It is also important to ensure appropriate quarantine measures at the entry points. Potential exotic species of fish may be considered for culture in ponds and tanks to supplement the presently cultured species after careful considerations of local biodiversity. Quarantine mechanism should be evolved at all ports of entry.

14. The marketing, preservation, and storage infrastructure need major strengthening through public-private-community partnership. Establishing adequate numbers of fishing harbours, hygienic conditions onboard as well as at landing centres and harbours, supply of potable water, electricity and ice facilities at landing centre, lying of link roads, establishing cold storage facilities, insulated/refrigerated vehicles are essential. There is a need to establish quality control facilities for raw/finished products and provide the services on payment basis, concessional power tariff, providing soft loans and financing should be arranged to the fish processing units. The quality and safety standards that are being applied to the exported fish products are to be equally applicable to the domestically available fish so as to provide safe and quality fish to our consumers. Awareness and training programs about handling practices are to be integral to this.

15. In order to increase the demand it is important to promote branding in the international market, promotion of fish consumption through awareness camp and publicity campaigns done by NECC to enhance consumption in the domestic market.

16. In order to utilise the underutilized capacity of the processing plants

promoting/ reprocessing of imported raw material can be permitted without affecting the livelihoods of the primary stakeholders.

17. The freeze on new recruitment in many States shall be removed and adequate professional and technical human resources be done with human resource planning. Large number of vacancies in the DoF needs to be filled on priority basis in order to facilitate faster development of fisheries sector. Need based short term and medium term refresher training programs shall become a continuous and in-built program for the various cadre of DoF staff; the content of the training programs to include both the technical knowledge as well as the societal and managerial skills such as community mobilisation and organisation skills, participatory management techniques, communication skills, team building skills, ability to work with NGOs, SHGs, etc.

18. Career advancement for DoF personnel shall be linked to the performance evaluation and not merely the seniority in the cadre. There shall also be sufficient promotional avenues. The HR development meant for resource managers to include regular interaction with the local communities

to facilitate their overall empowerment in terms of social, economic, access to resources, technical competency and entrepreneurial capacity. Emphasis should be given more on fisheries development program instead of focusing on other administrative jobs. The service delivery system is to be strengthened with more emphasis on revenue generation rather than revenue collection. State fisheries training institutes need to be strengthened with qualified staff and necessary infrastructure facilities. Sufficient hands-on training shall become necessary part of fisheries professional education.

19. Only fisheries professional shall be authorized to certify the health and disease management aspects in fisheries and aquaculture. The transfer of technology shall include the complete package including forward linkages such as packaging, marketing, etc.

20. DoF is to emerge as a service providing agency for developing the capacity of fishers and fish farmers technically, socially and economically. They also need to coordinate and mobilise support from various welfare and development agencies. There is a need for the major restructuring of

state DOF and its various wings / associated agencies with provisions for creating and using para professionals on more professional lines for effective service delivery. This shall also involve increased autonomy, both financial and executive, and accountability of DOF. There needs to be a paradigm shift from the classic transfer of technology approach to participatory extension systems like fisheries co-management and farmers participatory Trickle down System (TDS) for aquaculture.

21. The fisheries service should be targeted for the overall empowerment of target communities integrating essential human development elements such as social mobilisation, population, education, health, and environment. Appropriate training/information tools should be properly developed, periodically updated, and made widely available.
22. For the holistic and sustainable development, research priorities should be decided in participatory mode by the research institutes involving State Departments, experts and most importantly the primary stake holders.

## 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 (4.6 per cent GDP) and national economies (1.3 per cent GDP), livelihood and nutritional security, employment generation (11 million people) and foreign exchange earnings (Rs. 7,245 crores) have been enormous though understated so far.

The depleting trend of catch in inland and coastal waters which has been experienced since the last decade is the major overriding challenge facing the fisheries sector. The capture fisheries has become highly dominated by the juveniles and young ones, and several important fisheries are reported to be over-exploited. Increasing population pressure; conflicts concerning access to resources; space and markets; competing uses of resources; environmental pollution; coastal erosion; mangrove destruction; etc; are some of the several causes. There are also several inter-sectoral issues that impact the development of fisheries and aquaculture, and hence, deserve immediate policy solutions. In addition India is a signatory to the FAO guidelines on the Code of Conduct for Responsible Fisheries (CCRF). The code is voluntary

and offers a basic framework based on which all the signatories are expected to develop and implement the code. The code also provides meaningful guidelines for formulating fisheries and aquaculture policies.

The extent and quality of development is largely conditioned by the given policy, regulatory mechanism and enabling institutional environment. Lack of a broader policy framework at the Centre and comprehensive policies at state levels, non availability of adequate and professionally skilled human resource, ineffective and redundant services delivery systems, and poor infrastructure have almost limited the scope of fisheries development in India. Ironically, the importance of policy and HRD aspects has not been given sufficient attention so far.

An overarching Fisheries and Aquaculture Development Policy Framework at the Centre and comprehensive fisheries policy in the States which is in harmony with the Centre's policy framework is therefore the need of the hour. Policy is generally intended to give an overall direction and seeks to achieve the desired goal. The development of policy is also a decision making process that helps address identified goals, problems, and concerns.

Central Institute of Fisheries Education, Mumbai, has taken a lead in facilitating

the process of developing an overarching Fisheries and Aquaculture Policy Framework at the Centre and a comprehensive fisheries policy in the states. The facilitation process involves organizing consultative and participatory meetings at different levels involving all the stakeholders. CIFE has planned to organize five zonal workshops across the country and a concluding national workshop with active support and participation of state departments of fisheries, ICAR sister institutions, Union Ministry of Agriculture; and state departments of Water Resources, Environment and Forests, fishers and farmers and committed NGOs.

The first zonal workshop on 'Policy Issues and HRD Needs in Fisheries and Aquaculture for Northeastern States' was held in Guwahati during 7-8 December 2006 wherein the eight land locked hilly states in the North eastern zone participated. The second zonal workshop on 'Fisheries and Aquaculture Policy: Ecosystem and Livelihood Perspectives in East-Coast States' was held at Hyderabad during 22-24 March 2007 for the east-coast states of Andhra Pradesh, Tamil Nadu, Pondicherry, Orissa, West Bengal and Andaman & Nicobar Islands.

The earlier two workshops held provided a platform where the policy issues and HRD needs of the respective zones were

addressed and discussed at length in a truly consultative and participatory mode evoking intense interest and introspection among all the stakeholders. The output and recommendations of the two workshops provided essential ingredients that would assist the states in developing their own fisheries policy. The workshops have also brought out several cross-sectoral issues confronting the fisheries sector and their interdependent nature. These issues were suitably incorporated in the forthcoming workshop agenda that followed. The third Zonal Workshop for the West Coast states consisting of Gujarat, Maharashtra, Goa, Karnataka and Kerala, and the Union Territories of Daman & Diu, Dadra & Nagar Haveli and Lakswadeep was held at the ICAR Research Complex, Goa, during 21-23 June 2007 with the following objectives:

- To sensitize and facilitate the process of developing an overarching Fisheries and Aquaculture Policy Framework at the Centre and a comprehensive fisheries policy in the states
- To critically review the quality of the services delivery system in the fisheries sector, and to suggest innovative measures and strategies to make it more effective and efficient  
To flag off desired HRD requirements and strategies for institutional strengthening of the fisheries sector

The expected outcomes of the workshop were:

- Sectoral and cross-sectoral issues that deserve policy consideration
- Factors confronting quality service delivery system in the fisheries sector
- Institutional weaknesses and prioritised HRD requirements at various levels
- Recommendations for improving service delivery system including strategies and approaches, institutional strengthening and HRD support

During the workshop, the policy-related issues in different sub sectors of fisheries and aquaculture from the concerned States were subjected to detailed discussion and critical feedback were obtained from different stakeholders, particularly the fishers, farmers, Fisheries Department officials and the experts. Besides facilitating them to share the field-level experiences from different states and ecosystems, the workshop has evoked a lot of excitement and interest as well as critical introspection among all the stakeholders. The output and recommendations of the workshop shall provide essential ingredients that would assist the states in developing their own fisheries policies. The workshop process

itself has provided a new impetus and vigour to the cause of fisheries and aquaculture development in general, and the importance of comprehensive policy in particular.

The workshop was truly interactive and participatory in nature. For an effective outcome towards promoting fresh and holistic policy reforms, the participants open mind to exchange new perspectives and experiential wisdom of each other had contributed significantly. They also came prepared with requisite material. The workshop consisted of inaugural session, overview session, parallel working group discussions, joint sessions, and a plenary session. The detailed program schedule is appended as Annexure I. The list of participants is enclosed as Annexure III.

## 2. Inaugural Session

The program started with the welcome address by Dr. Dilip Kumar, Director, CIFE. Shri Bhupindera Singh Manubha Chudasama, Honourable Minister of Fisheries, Agriculture, Cooperation, Panchayats, Rural Housing, Animal husbandry, Fisheries and Cow Breeding, Gujarat, was the Chief Guest of the function and Mr Diwan Chand, Principal Secretary, Fisheries, Govt. of Goa, Dr. P. V. Dehadrai, Former Deputy Director General (Fisheries), ICAR, and Dr. S.A.H. Abidi, former Member ASRB were the Guests of Honour.

**Dr. Dilip Kumar** welcomed the dignitaries and the active participants of the workshop. He briefed about the background and the rationale of the workshop and the initiative of CIFE in facilitating the process of policy framework development and the organization of zonal workshops at Guwahati, Hyderabad and Chandigarh. He stressed the need for developing a framework for National Fisheries Policy depending on the needs. He re-iterated that fisheries are common property resources that provide livelihood for millions of poor people and therefore, a national policy is the need of the hour. He further said that since fisheries and aquaculture is the state subject, CIFE will also facilitate in developing the state fisheries and aquaculture policy.

**Shri Diwan Chand, Secretary (Fisheries), Goa,** and the Guest of Honour, appreciated the efforts of CIFE in bringing together different stakeholders on a single platform to discuss the various aspects of fisheries sector with a view to develop policy framework at national and state levels.

**Dr. P.V. Dehadrai, Former DDG (Fy),** and Guest of Honour, emphasized the importance of fisheries in the national economy. He reiterated the importance of the deep-sea fishing programme and stressed the need for joint ventures and equity participation if quantum jump in fish production is needed. He urged the state governments to request the centre to take up deep-sea fisheries policy. He also appraised the gathering that the Konkan Coast remained untapped due to faulty leasing and impractical mortgage policies. He congratulated the administrators and policy planners of the Government of Bihar for making aquaculture at par with agriculture for all subsidies, loan, tax exemptions, etc.

**Dr. S.A.H. Abidi, Former Member, ASRB,** and Guest of Honour, emphasized the need to critically evaluate the HRD scenario in the context of changing global scenario. He mentioned that the quality of young professionals is very poor. He said the policy development framework should aim at improving the quality of fishermen's lives in the real sense. Scientists should

involve and interact with fisherfolk continuously to sensitize the fishers on catching, processing and marketing. Dr. Abidi mentioned that the scientists should come up with alternative livelihood options for fishers during ban period. He stressed on strengthening linkages between farmers and universities.

**Shri Bhupendra Singh Chudasama, Honourable Minister for Agriculture, Cooperation, Panchayat, Rural Housing, Animal Husbandry, Fisheries and Cow Breeding, Government of Gujarat and Chief Guest** of the function inaugurated the workshop by lighting the lamp. He said CIFE's initiative is a welcome step and is the need of the hour. In his inaugural address, the Honourable Minister listed various welfare programs being operated by the Government of Gujarat for the benefit of the fishers. Particularly he mentioned about the Sagar Kheda Sarvangi Vikas for fishers, which is a 12-point comprehensive programme in 13 districts which was announced by the Chief Minister of Gujarat. The Chief Guest also stressed upon the need to incorporate suitable policy measures to meet the challenges of WTO in the Indian context.

**Dr. V.S. Korikanthimath, Director, ICAR Research Complex Goa,** proposed the vote of thanks to the dignitaries and all the participants.

### 3. Technical Session I: Status of Fisheries and Policy Overview

Dr. Dilip Kumar, Director, CIFE, Mumbai started the session with his presentation on the workshop theme and design. He mentioned that the objective of the workshop is to sensitize the participants to develop comprehensive national and state level fisheries policies particularly with the aim of identifying the issues that require policy guidelines, to review the existing service delivery system and to review the status of HRD and HRD needs. It also aimed to review the Fisheries and aquaculture policies and regulating environment, flagging of policies related issues including compliance and implementation of MFRA's in participating states and Union territories. The Department of Fisheries of Kerala, Karnataka, Maharashtra, Gujarat, Goa, Lakshadweep, Daman & Diu and Dadar & Nagar Haveli have participated in the workshop.

Shri M.A. Varghese, Deputy Director of Fisheries, Gujarat in the first presentation on the status and programs of the Fisheries Department of Gujarat brought out the following issues to the fore: Preference to be given to SHG while leasing out the reservoirs, the leasing period has been extended up to five to ten years. FFDA is earmarked to serve the

reservoirs having water area up to 20 ha, lack of marketing information across the states, Shortage of manpower in the department and filling up of vacant posts on priority as an immediate measure for the implementation of programs, technical person to head the department, improving hygienic conditions of fishing harbors, Free hand for private farms in fisheries development and more emphasis on aquaculture. Infrastructure to be strengthened/ added for freezing plants, hatcheries, additional fishing harbours, processing plants, etc. More area to be brought under brackishwater aquaculture and establishment of 4 to 5 feed mills.

It was said that about 20 per cent of fishermen fishing near Pakistan border get caught and imprisoned by the Govt. of Pakistan. Even when they are released, the seized boats are not released, leading to enormous financial loss and stress. Schemes and programs related to financial assistance, infrastructure, PCR testing lab, training and socio-economic upliftment are sought to be given more emphasis. Wooden boat owners and associated maintenance personnel restrict the introduction of steel boats.

Considering the potential available for reservoir fisheries in the State, efforts have to be made to enhance the fish production levels. The social security measures for fishermen, particularly the

women folk to be enhanced to create a secure feeling among the community which will bring in better output

**Shri Prasad Chandran Pillai, Additional Director of Fisheries, Kerala** presented the status and programs of the state. The following issues were highlighted during the presentation. Prioritization of export with specific reference to value-added products to get better returns, maintenance of landing centers and fishing harbours at par with international standards, evolving a suitable and uniform fishing ban period for the West Coast. Compulsory registration and regulation of efforts in the region and also of the boats that are fishing off the coast of Kerala has to be done. While registering the vessels, replacement of old boats to improve the efficiency with the up gradation of the technology may be encouraged. Issuing of photo identity cards to the fishers needs to be encouraged. Anchovy fishing by the traditional craft may be permitted in the monsoon period as it was felt that anchovies will be wasted if not caught in the season.

Karimeen (pearl spot) aquaculture in the inland waters may be encouraged as an alternate species in the region. Insurance scheme under FISHCOFED, and funding of modern fish markets and welfare schemes through fishermen fund board, may be given priority. It was felt that an unified Inland Fisheries Act for inland fisheries

development be formulated including aspects such as maintenance of ecological balance and licensing . The fishing rights of the water bodies which are presently with the forest and other departments have to be brought under the fold of fisheries department and scheduled tribes has to be given preference as beneficiaries of the program especially in tribal dominated areas. Fisheries tourism in reservoirs has a good scope and, therefore, angling for Mahseer and setting up of ornamental fish aquarium in important inland reservoirs should be attempted. Cage culture and other aquaculture technologies including mariculture can be given more emphasis than sea ranching.

Fisheries infrastructure like cold chains, aqua-clinics, aqua-parks, improving sanitary conditions of harbours and landing centers, value addition and marketing besides modernization and diversification may be given priority. Deep-sea fishing and aquaculture infrastructure development to be given emphasis in the immediate future programme.

**Dr. Shekar R. Kovale, Dean, College of Fisheries and Dr. B. S. Ambedkar, KKV, Ratnagiri** presented the status and programs of Maharashtra and raised issues like the need for establishing Fisheries Ministry both at central and state levels, Need for a technical person

to head the department of fisheries so that programs can be implemented effectively based on actual field requirements, Compulsory registration of craft and gear, Voluntary declaration of catches by fishers, Monitoring of the water quality on regular basis by the pollution control board, etc.

In addition, issues like fisheries be treated at par with agriculture, Conversion of engines to CNG in order to make capture fisheries economical, Demarcations of area for cage culture in the open sea, Categorization of fishermen on the basis of size and type of vessels, Promoting infrastructure development through cooperative societies or private sector on priority basis, Relaxation in CRZ for construction of houses of fishers, Clear definition of terms such as traditional fishermen, active fishermen, etc., for avoiding conflicts and taking future policies, Urgent need for comprehensive freshwater fisheries policies taking into account the resources available, their management, habitat improvement, introduction of exotic fishes, fishermen welfare, reservoir fisheries and environmental and legislative aspects, Need for standardization for certification of fish seed and brood stock & to establish state fish farming training and extension centers under state agriculture universities, Declaring shrimp farming as an agriculture activity, Resurvey of

potential brackishwater culture sites in the Maharashtra coast, Immediate allocation of government brackishwater lands for shrimp farming, Allocation of 3 per cent of the land for supportive activities like laboratory, storage, etc, Enhancement of loan amount for shrimp farming on non-counter guarantee basis, Advance technologies on shrimp hatcheries to overcome shortage of seed and to rehabilitate sick hatcheries, Promotion of cooperative shrimp farming ventures through NCDC, Provision of mobile laboratories, domestic marketing facilities and crop insurance for shrimp farming.

**Shri S. C. Verenkar, Director of Fisheries, Goa** presented the status and program of Goa and highlighted issues such as There may be separate fishing ban periods for east coast and west coast based on the model advisory from Centre to States, Defining of terms such as traditional fishermen, marginal land, etc. may be necessary. One standardization workshop may be arranged in which definition problems relating to fisheries may be discussed and finalized, Meeting may be arranged for co-management of development, programs involving fishermen communities, Grants from the Central Govt. may be utilized for establishing hatcheries and other infrastructure, which may later be leased to private sector for better functioning, Suitable aquaculture policy may be

developed for conversion of unused rice fields for freshwater prawn culture, Lead example of Bihar of declaring aquaculture on par with agriculture may be emulated in Goa and other states, Special programs for women of fishing community including even those who are not directly involved in fisheries activities may be considered, Census of fishermen based either on caste or profession, may be made for Goa for getting the benefits under the insurance and other schemes.

**Shri. Muthukoya, Asst. Director of Fisheries, Lakshadweep** presented the status of Lakshadweep fishery and highlighted upon deep-sea fishing programs to be promoted. Mother ship system to be introduced in Lakshadweep with onboard processing facilities along with the upgradation and modernization of existing vessels and gear, Setting up of integrated fish processing plants, Revamping of fisheries programs for bringing in idle women work force of the islands, Deputation of department staff to CIFE, CIFT and CMFRI for training needs, Tapping of the resources for lagoon fisheries and ornamental fisheries.

**Dr. P. Keshavnath, Dean, College of Fisheries, Mangalore** in his presentation on the status and programs of Karnataka fisheries flagged the following issues as to create a separate Fisheries Ministry at state and central levels, Heading of

department by a technocrat, compulsory registration of fishing vessels and monitoring of crafts and gears, Education of fishers on mesh size regulations, reducing the rate of interest on fisheries loans to 4 per cent. Boat engines to be made fuel-efficient. Uniform closed fishing period may be encouraged. Speed up infrastructure development process. Rationalization of CRZ and replacement with CMZ need attention. Consider making aquaculture at par with agriculture. Identification of suitable areas for brackishwater aquaculture may be considered as essential for planning. Establishment of shrimp hatchery under private sector may be considered. Shrimp farms to be taken up with proper effluent treatment plants. Mobile labs, domestic marketing for shrimps, cage culture possibilities, diversification of species for brackishwater aquaculture, etc. need attention.

Freshwater resources of Karnataka need to be reassessed through survey for resource management, habitat improvement and culture. Judicious introduction of exotic species, fishers' welfare, long-term leasing policies, reservoir fisheries development, etc. need proper planning. For aquaculture development, quality seed production, private sector involvement, HRD, creation of information centers, etc. were identified as critical thrust areas for aquaculture development.

#### 4. Technical Session II: Open Forum - Stakeholders Perspectives

The open session was meant for the intense deliberation and feedback from the primary resource users and stakeholders. **Dr. G. K. Bhanji, Chairman, National Association of Fishermen**, in his presentation pointed out the different problems of fishing community and put forth the demands as to Subsidized finance and revised rate of interest to assist fishermen, to abolish the new refund system of diesel subsidy and to retain the old system to avoid delay and exploitation, group insurance policy to be started and premium should be paid by the boat owners, emergency medical facility to be provided for off-shore fishermen, Wireless facilities, new jetties, boat repair workshop, are to be established in every village, ice and other preservation facilities to be made available through co-operative societies, subsidized transport facility, solar power devices for drying fish, and proper training on marketing and value addition to be provided at cheaper rate or free of cost, Children of fishermen to be given education/training on employment opportunities in fisheries, Youth may be motivated through mass media to inculcate interest in fishing activities, Fishing rights may be given to the respective fishing communities belonging to different fishing zones, such as beaches, lakes, lagoons, islands and

salt pans, Marine tourism has to remain in the hands of fishermen, Places of tourist importance at seashores must be run by fishermen societies.

**Shri Vasudev Bolor, Secretary, National Fisheries Forum**, highlighted the following demands as since breeding seasons of commercially important fishes are different and are not occurring only during the monsoon season, the information on breeding season of important species may also be considered while framing the policy on ban period, Proper compensation to be paid to the fisher families displaced because of some infrastructural interventions, Set ILO Standards for the crews working in the boats, Alternative livelihood for the poor fishers should be planned during the lean seasons, Fisherwomen may be covered under insurance and welfare programs or joint ownership of the craft and gear to be encouraged to avoid legal complications.

**Sri Upendra Hospet from Karnataka** raised following issues as the permitted capacity of outboard engines of traditional craft may be increased from 10 HP to 25 HP for fishing during ban periods, Modernization of traditional craft has to be promoted, Traditional fishers are hardly responsible for the destruction of juveniles and, therefore, other factors (like pollution) may also be investigated before taking a policy decision on ban period,

Clearly identify breeding places for commercially important species, Reserve 10 Km from shore for traditional fishers, Species and craft-wise quantity restriction for fishing may be made.

## 5. Technical Session III: Policy Issues in Capture Fisheries

The Open Forum was followed by Technical Session III: Policy Issues in Capture Fisheries, and Technical Session IV: Policy Issues in Aquaculture wherein invited presentations by experts gave a brief overview of the sector and threw open various pertinent issues requiring policy interventions and gave leads for more detailed discussion in the work groups.

Dr. V.S. Murthy presented the Marine Fisheries Policy - Overview and Issues. He made the following points: CCRF management should be based on valid scientific data. Management measures should consider whether it would affect the livelihood of fishers. There is need to review the mandate of institutes involved in marine fisheries research. Fisheries management becomes difficult, as it is a state subject. He suggested a central directive in this regard. There is dearth of trained or qualified manpower in biodiversity issues. Mere regulation of fishing efforts or mesh size regulation will not have much impact. Research projects should be drafted after annual consultations with the stakeholders. Infrastructure investment – maintenance of harbours should be given to private stakeholders for management.

Dr. Rekha Gaonkar presented the Policy perspective for livelihood of coastal fisheries and the following observations were made by her as the commercialization and mechanization of fishing and resultant intensive fishing followed by ruthless exploitation has put tremendous pressure on the inexhaustible and otherwise renewable resources. The important issues of concern are therefore to ensure the optimum and the best use of the existing stock of fish and an uninterrupted and sufficient supply for the future generation. The state of Goa has nearly 4 times more trawlers as compared to the recommendations of the FAO. Besides, the Government has provided fish finders to the trawler owners. Many traditional fishermen feel that the fish finders will pose a threat to sustainable development of fisheries. There is a long history of conflict between the traditional fishermen and the boatkars in Goa as also in some other states. Policy should emphasize on the livelihood aspects of traditional Fishermen as well as sustainability of fish resource. As inshore waters are fully exploited there is no point in increasing the fishing vessels in Goa. Exploitation of deep-sea resources beyond 200m depth may be encouraged. Prohibition of mechanized trawlers in the 5 km area throughout the year to be enforced.

**Shri Anand Kapoor** presented the Stakeholder's perspective of Tribal Fisher-folk in Dimbhe dam, Dist. Pune, Maharashtra. He suggested the following points to promote blue revolution in Maharashtra as effort should be made on same scale as white revolution, promote fish co-ops like milk co-operatives, Infrastructure - advanced fingerlings/ ice/ transport/ marketing facilities at block level, fish seed development at all dams, make fish ladders on all dams, close interaction between fisheries, co-operatives & irrigation depts. and CIFE. He also emphasised that Dam-displaced persons shall be given first right on fish and fish is not wildlife. He wanted scientific studies on socio economic status of fishers to help planning in the catchment area, while pressing for respect for local traditional knowledge from decision makers.

He presented in detail the present anomalies in reservoir leasing policy in Maharashtra which is affecting the prospects of fishers in Dimbhe. Annual fish contract amount based on offset price formula is not uniform across the whole State and hence a review is suggested on the basis of Location in agro-climatic zone, topography, average depth, net primary productivity of water, amount of seed put in the past 2-3 years, fish catch in past year based on realistic annual yield (50-60 kg /ha for dams like Dimbhe in the

Sahyadris) etc. Othe issues brought out are: annual contract amount shall be payable in 3 installments for tribals, instead of single installment as at present. Fish cooperative society, fisherwomen's SHGs / federations should also be eligible for fish contracts, to create awareness about principles of cooperative, working capital for coop societies, to provide training & exposure in running fisheries coop society properly, to revise outdated Maharashtra Model constitution of coop society, training of fisher-folk, awareness of co-operation, Fish nursery/ fish seed growing, repair of nets, Better fishing techniques, marketing techniques, record keeping, ornamental fisheries/ fish products, restore natural structure and natural function and work within the watershed and broader landscape context, understand the natural potential of watershed, address ongoing causes of degradation, focus on feasibility for anticipated future changes, involve the skills of a multi disciplinary designs for self sustainability, restore native species and avoid extortive species and use natural fisheries and bioengineering techniques.

He suggested that the policies to address ecosystem management issues should include integrated catchments management, involvement of the locals and facilitate locals, support for environmental impact assessment (EIA),



## 6. Technical Session IV: Policy Issues in Aquaculture

Dr. A.S. Upadhyaya, MPEDA presented the Coastal Aquaculture Authority Guidelines for coastal aquaculture. Salient features of the Coastal Aquaculture Authority guidelines on coastal aquaculture activity are permissible within 200 meter from high tide line. No coastal aquaculture activity is allowed in creeks, rivers and backwaters within the CRZ. This condition is not applicable for Coastal aquaculture farm which is in existence on the appointed day (16<sup>th</sup> December 2005) and for non commercial and experimental coastal aquaculture farms operated or proposed to be operated by any research Institute of the Government or funded by the Government.

CRZ along the banks of rivers, creek and backwater excludes those farms, which are beyond 150 m in case the width of river, creek and backwater is more than 350m, beyond 100 m in case the width of river, creek and backwater is between 100-300m, 100 m or width of creek or backwater bodies which ever is less in case the width of river, creek and backwater is less than 100 m. An environment impact assessment (EIA) should be made even at planning stage by all aquaculture units above 40 ha size. For 10 ha and above a statement will be required to be given in detailed plan. All

shrimp culture units with a net water area of 40 ha or more shall incorporate an environment monitoring and management plan (EMMP) covering Impact on the watercourse in the vicinity, Impact on ground water quality, Impact on drinking water sources, Impact on agricultural activity impact on soil and soil salinization, Waste water treatment, Green belt development. Agricultural lands, saltpans lands, mangroves, wetlands, forestlands, lands for village common purpose are not allowed to be used/ converted for shrimp culture ponds, Semi-intensive and intensive aquaculture activities are not allowed. Effluent treatment plant (system) is a must for any shrimp farm with water spread area of 5 ha and above. Area under ETP should be 10 per cent of total WSA, Hatchery reared and healthy seeds only to be used for adopting improved technology.

He also brought out specific policy issues for the West Coast States. The area developed from the potential brackishwater area is very minimal, except in Kerala & Karnataka, where 25 per cent of the available potential area has been utilized for shrimp culture. The extent of utilization for aquaculture is only 1.6 per cent in Maharashtra, 0.6 per cent in Gujarat, 8.8 per cent in Goa and 11 per cent in Daman & Diu. The States like Gujarat have almost the entire brackishwater area under government

ownership. Therefore it is essential to expedite the process of leasing of lands by the state government. There is an urgent need to identify the exact spread of land suitable for aquaculture out of the total potential land available; aquaculture is to be treated on par with agriculture by the states. The shrimp farmers are paying the electricity tariff on par with commercial activities, as per the state government rules in most of the coastal states.

A policy initiative needs to be taken to extend liberal financing/ insurance to aquaculture projects. Policy provisions are to be made to utilize the coastal seawater area for water-based aquaculture, such as the floating cage culture, pen culture in shallow lagoons/creeks, etc. As per the existing policy of the Government of Goa only marshy Khazan lands, owned by 'Communities are to be used for aquaculture. To further develop the brackishwater farming, the state government could acquire these lands from Communities and re-allot them to the potential farmers, and the land leasing policies of the state may be amended accordingly.

In Karnataka, most of the potential land in the coastal districts is classified as agricultural lands, which are not actually useful for agriculture. Hence Department of Fisheries, Govt. of Karnataka may initiate the process to reclassify these

lands as wasteland to make it available for shrimp farming, and the land leasing policies are to be reframed accordingly.

In Kerala, the government currently owns large areas of land suitable for brackishwater aquaculture. To expand the farming activity it would be necessary to formulate the land leasing policies by the state government. In the case of private land, the farmers are compelled to pay the Fishermen Welfare Fund Cess @ of Rs. 300/- ha for perennial ponds and R. 150/- per season for seasonal ponds for getting Aquaculture Authority license, which is felt exorbitant and the farmers are reluctant to go for the CAA license.

The process of policy formulation may consider promoting the utilization of feed-grade wastes in fisheries sector (i.e., by catch and discards, fish processing plant wastes etc) for aqua feed manufacturing. Coastal aquaculture development should be incorporated as an essential entity in the integrated coastal management plan in each state. Suitable areas for land-based brackishwater aquaculture and water based mariculture should be designated as zones within the integrated coastal area management plans, ensuring that such ecological niches are within the carrying capacity, environmentally safe and that conflicts with other key coastal sectors are minimised. It would be highly desirable to have a participatory approach in the process of policy formulations

involving the public and private partners so as to ensure all the stakeholders' role and responsibility while implementing them.

**Mr. C.V. Naik, Entrepreneur** presented the Stakeholder's perspective in aquaculture policy and he flagged the following issues: diversification of culturable species - coastal aquaculture is solely dependent on *P. monodon* at present, introduction of exotic species, leasing of water bodies to the different stakeholders, linkages to be strengthened, public private partnership (PPP) to be encouraged, need for HRD relevant to the industry, etc.

### Discussion

**Prof. K.K. Ghosh** made a short but succinct presentation on some of the more fundamental aspects of policy scenario. He drove the point that fisheries and aquaculture at present suffer from lack of water and land use rights due to lack of recognition of its non-consumptive use of water resources, and fisheries being considered as a residual activity. He also emphasized the lack of standardized terminology / nomenclature in fisheries that prevents convergence of opinion on crucial issues impinging upon policy. He sought water resource planning that accounts for and defines due priority rights of fisheries and aquaculture. The development scenario is fast changing the coastal area and coastal livelihoods with little heed to the fishers and their

vocation. He also highlighted the need for one year PG Diploma in diseases surveillance to State Fisheries machinery and customised training in insurance and banking.

## 7. Technical Session IV: Work Group Discussions

There exist huge disparities in the different policy issues in the different fisheries and aquaculture production system across the different states. Gap analysis is a tool that helps in reviewing the status, shortfalls, constraints and strategies for abridging the gap. Dr. Shyam S Salim, Scientist, CIFE explained about the modalities of the Gap analysis and the constitution of four work groups. Four work groups were formed to identify policy gaps existing in the different production systems of fisheries and aquaculture viz., marine capture fisheries, inland capture fisheries, brackishwater aquaculture and freshwater aquaculture.

The groups, consisting of about 20 participants each, were formed on the basis of expertise and work experience and adequate representation from the different stakeholders. Each group selected a team leader with the help of the facilitators. The roles of the facilitator, team leader and the rapporteur were specified. The facilitator was to facilitate and moderate the session and to help the group to identify the team leader. The team leader was to lead, summarize and present before the house and to encourage and seek information from group members. The rapporteur was to document the proceedings of the session.

Based on the work group interaction and outcome a joint session was held wherein the summary of each work group discussion presented and specific recommendations / action points was evolved collectively.

The outcome of the work group deliberations are presented below:

### 7.1 Work Group 1: Policy Issues in Marine Capture Fisheries

- At present even though the regulations exists with regard to mesh size it is not being implemented which leads to indiscriminate fishing and exploitation of juveniles. Implementation of mesh regulation should be done strictly – this can be achieved by participatory approach involving the fisher. Strengthening of implementation machinery alongside upgradation of technical knowledge for MFRA be given priority. This would allay apprehensions in many quarters about conflicts between artisanal and industrial fisheries as well as resource conservation.
- There exist several conflicts between inter-State and inter-sectoral viz., artisanal, motorized and mechanized sector due to the non compliance of the Marine Fisheries Regulation Acts. The demarcation of fishing areas for

different vessels should be made in terms of fishing rights. Customary/traditional rights should be recognised/ensured for the fisher folk.

lack of sufficient infrastructure, preservation, storage and marketing infrastructure which need major strengthening.

- CRZ is under review by MOEF; Government of India for the introduction of CMZ based on accepted recommendations of the Swaminathan Committee of 2005. The interest of the coastal fishery resources, livelihood dependence and aquaculture should be protected in the Coastal Management Zone.
- Degradation of the mangroves and other common property resources like marine parks and sanctuaries are affected due to the excessive developmental projects. This would affect the coastal biodiversity in the long run and the sustainable development of the fisheries resources are under threat. Developmental projects in the coastal areas should be specially examined for environment clearance from fisheries point of view.
- There exists a huge amount of by catch and discards in the fishing operation on account of the non availability of adequate infrastructure and cold chain. There is wide spread rejection of low value fish at fishing sites as well as landing centers for
- CCRF provides ample guidelines in the management of fisheries and aquaculture resources through sustainable development, management, conservation, and socioeconomic upliftment. India is a signatory to the CCRF guidelines. Any policy formulated must take into account the compliance of the CCRF.
- The present research mode is more or less skewed towards top down approach where the views, concerns of the primary stakeholders are not taken into account. For the holistic and sustainable development research priorities should be decided in participatory mode by the institutes, states, experts and most importantly the primary stake holders.
- Collection of essential sectoral, economic, engagement, income statistics is a state responsibility and is obligatory. In a Federal state set up, national level mobile resource base are to be amicably shared by different federal constituents. Center has to decide this divisibility. They need independent data on resource potential and dynamics. The resource

divisibility and allocation requires data collection systems. State needs to upgrade and standardize the collection system, for which the Center may promote machinery utilising expertise and experience of different ICAR fisheries institute and other national statistics collection system.

## 7.2. Work Group 2: Policy Issues in Inland Capture Fisheries

- Reservoir provides alternative livelihoods and employment opportunities to a lot of stakeholders which includes fishermen and displaced tribes. The major problem with the management of the reservoir is the lack of an effective management strategy. A detailed protocol for the management of reservoirs may be developed on a priority basis taking into account the co-management principles.
- It is again to be considered that Inhabitants in proximity to the resource and earning livelihood shall be the guiding principles in granting the leasing rights for fishing.
- The sharing of water resources often leads to unending conflicts amongst different states. Appropriate management measures are the need of the day for the conservation and

habitat restoration of the riverine resources. The linking of water resources would serve as an effective means in resolving these issues. Therefore riverine management must come under the concurrent list.

- There is no standardised definition and there exists a lack of clarity in many of the terminologies used in defining the fisheries resources and its management. This therefore needs to be to be addressed with the constitution of a working group involving trade and development officers with fisheries scientists for defining different terminology used in aquaculture and fisheries and related aspects.
- In order to feed the millions of population it is important to determine the demand for water. The different multiple users of water like industry, agriculture and other allied activities including fisheries compete for the water usage. Demand assessment for water for fisheries and aquaculture to be done at the national level so that transferring water out of non remunerative sectors can be done towards priority and other potential sectors. Water resources in the inland fisheries resource like rivers, reservoirs, and lakes involve multiple users and different monitoring agencies like irrigation, forestry,

environment and tourism. In order to evolve an effective inland resource management strategy an inter-departmental co-ordination committee comprising different users may be constituted.

- The guiding principle in deciding the lease should be based on the livelihood generation. In addition leasing systems with the co-operatives may continue however in specific situation need based alternatives such as allotment to lease groups such as SHGs, women, unemployed educated youth and tribal may be given preference. The reservoir can be leased out to private individuals / entrepreneurs / public undertakings / registered companies through open auction and sealed tenders. The lessee or the successful bidder shall have to engage genuine fishermen of the locality for exploitation by paying fishing wages. The priorities in the fishing rights should be given to the displaced / affected/ousted population by forming fishers groups.
- Indiscriminate introduction of exotic species will harm the biodiversity of the local /indigenous species. The National Committee on the introduction of exotic species should ensure that their decisions are implemented strictly.

- All research and development programs of the open water resources should be linked with environmental conservation and habitat restoration, especially for wetlands - both brackishwater and fresh water.

- The inland water resources are yet to be tapped to its fullest potential. Newly created perennial water canal resources are to be utilized for fish production through innovative research and development approach.

### **7.3. Work Group 3: Policy Issues in Brackishwater Aquaculture**

- Defining the status of aquaculture: Aquaculture to be treated at par with agriculture for all purposes; agriculture land unfit for agriculture be converted to aquaculture; subsidised electricity and transportation (airfreight); reformulating the guidelines for institutional finance and insurance;
- State-levelcoordinating cell involving DoF, MPEDA, NABARD & lead banks, farmer associations, insurers, fisheries institutions, etc.
- Land leasing policy: Development-oriented leasing policy (Gujarat model may be followed); Single-window system for leasing and licensing to be instituted; land allotment letter should

include clearances from all the departments concerned; leasing policy for use of coastal waters for mariculture/sea farming to be clearly outlined; A long term policy is required for leasing of land to individuals, cooperatives, SHGs and corporate; traditional fishers to be given preference on leasing.

- Measures to increase the average productivity: encourage import hatchery, culture and feed technologies for other commercially important species; develop effective models of service delivery system; diversification of species to be encouraged. Availability of adequate and quality seed (SPF and SPR seeds): encourage Public-Private-Community partnership in establishing hatcheries and seed farms; establish and enforce quality standards and certification mechanisms through Seed Acts and Regulatory measures by the States concerned. Ensure the availability of quality feed and chemicals: Establish certification and implementation mechanisms through regulatory authorities;
- Environmental concerns and sustainability of coastal aquaculture: Implementation of guidelines of Coastal Aquaculture Authority; Review and revise the CAA Act - to account for variations in the land use and

ecosystems across States and modify some regulations; Measures for promoting aquaculture in clusters; Permissibility of aquaculture in the proposed different Coastal Management Zones; Zoning for various purposes may be done.

- Land assessment and aquaculture database: Policy directions for country-wide major program for land mapping & assessment through RS & GIS, and establishing nodal centre for the database; monitoring of water characteristics of source water bodies in prominent farming areas by competent authorities.
- Organic aquaculture, eco-labelling, etc: encourage organic aquaculture in clusters and notified areas; Credit norms to aquaculture: loan amount to be granted without collateral security for small farmers need to be raised from the present level.
- Crop insurance: comprehensive policy support for insurance coverage need to be evolved and implemented.

#### **7.4. Work Group 4: Policy Issues in Freshwater Aquaculture**

- Defining the status of aquaculture: Aquaculture is to be treated at par with agriculture for the purpose of energy and water charge, credit and

tax relief. There needs to be provision of Concessional charges in air and rail freight for seed transportation; Survey of suitable water bodies for freshwater aquaculture needs to be undertaken.

- State level coordinating cell involving DoF, NABARD, Lead banks, Farmer Associations, Insurers, etc are to be constituted for better monitoring and implementation of the different programs.
- Ownership and management of ponds and tanks: Granting management rights of ponds/tanks for fisheries development to DoF pertaining to gram panchayat, zilla panchayats and irrigation and state fisheries department water bodies; Instituting mechanisms for coordination at district and State level.
- Leasing policy: A comprehensive leasing policy for the leasing of ponds and tanks for a minimum period of 7 years, with a broad principle of development orientation (preference to be given to fishers cooperative, self help groups, and educated unemployed youth); Single window system for leasing.
- Improving the low average productivity : Sustainable intensification of production,

adopting improved scientific technologies, diversification of species from the present dependence on IMC; Simultaneously efforts be made for seed production of air breathing fishes like Clarias, Channa, Heteropneustes and medium carps; Potential exotic species of fish may be considered for culture in ponds and tanks to supplement the presently cultured species; Quarantine mechanism should be evolved at all ports of entry.

## 8. Technical Session V: Policy Issues in Processing, Markets and Trade

Dr. A. S. Upadhyaya presented policy guidelines for producing more prawns and enhance export. His presentation emphasized that fresh water aquaculture will help augmenting the export quantum. MPEDA is trying to augment the prawn production in different parts of the country. He also emphasized the need for increasing the Govt. leasing area under brackish water and the period of license to be extended for five years. He also indicated that the suitable freshwater areas need to be brought under scampi culture.

Dr. S. Balsubramanian presented policy guidelines for reducing post harvest losses and value addition. He suggested improvement of infrastructure facility and more value addition to reduce post harvest loss. He expressed that there is much problem in marketing or value added products and he expressed that more extension efforts are needed for proper marketing.

Dr. Misra presented desired reforms required in trade policy. He highlighted the lack of government attention to the fisher cooperatives.. He demanded more funds for co-operative federation. He expressed that the federation will effectively deliver in improving the lots of the fishers

including marketing of fish and introduction of insurance policy for them.

No formal presentations were made on the issues related to HRD and service delivery system.

## 9. Technical Session VII: Work Group Discussions

After the expert lead presentations, the participants were divided into four parallel work groups namely on Policy Issues in Processing and Value Addition, Policy Issues in Markets and Trade, Policy Issues in HRD, Policy Issues in Service Delivery System. These groups consisted about 25-30 participants representing different stakeholders. The format of work group processes was similar to the first round of discussions. The list of different Sub-sector specific inputs for policy framework generated from different work group discussions during the workshop are given in the following pages

### 9.1. Work Group 5: Policy Issues in Processing and Value Addition

- Improvement of Infrastructure facilities: Establish proper hygienic conditions onboard, at landing centers and harbours; Establish adequate numbers of fishing harbours for landing and marketing of fish; Supply potable water and electricity at landing centre; Supply good quality ice at proper price at landing centre; Supply proper ice box for carrying ice and packing fish; Establish proper link road for quick transportation of fish to market; Establish proper cold storage facility at nearby town for storage of

fish; Supply of insulated/refrigerated vehicles for transportation of fish; Co-operative societies should be entrusted with the domestic marketing of fresh fish; Provide modern facilities in local market to ensure hygienic standards.

- Reducing post harvest loss: awareness and training programs for fishers for proper handling practices; freezing plants should also produce hygienic and value added products for the domestic market; encouraging dry fish following hygienic practices and proper packing for domestic retail market; on cluster basis, solar driers to be given to the fishing communities.
- Establish quality control facilities for raw/finished products and provide the services on payment basis. Concessional power tariff to the processing sector need to be considered; Soft loans and financing should be arranged to the fish processing units. Established common treatment plant for a cluster of small processing units and run it on commercial terms.

### 9.2. Work Group 6: Policy Issues in Markets and Trade

- Strengthening of the domestic marketing network: Establishing the

organized modern markets exclusively for the fish with waste management facilities; Small market Federation should be established for procurement and marketing of fish; promote the marketing of low value fish through SHGs, etc for low income groups; cold containers for fish in the passenger trains can be provided .

- Market information and marketing intelligence: Demand and supply analysis of fish products should be undertaken to identify surplus and deficient States in the country; promoting branding in the international market to achieve brand equity; promotion of fish consumption through awareness camp and publicity campaigns like by NECC.
- Encouraging import to utilise the underutilized capacity of the processing plants by promoting reprocessing of imported raw material which can support to compete with world market.
- Hygiene and safety standards in the domestic fish markets: Enforce hygiene and safety standards at domestic markets by fishers themselves; training on quality awareness should be conducted for whole sellers as well as for retailers; efforts should be made to take

example of world markets in quality aspects.

- Establish trade promotion offices at promising centers in the export markets. Encourage programs for export product diversification like sea bass, seaweed, scampi, etc along with emphasis on value addition; developing fish meal from the trash fish and by-catch can be a substitute to imported fish meal.

### 9.3. Work Group 7: Policy Issues in Human Resource Development

- High priority shall be given to HR development in Fisheries Sector with adequate financial and infrastructural support. The role of private and nongovernmental extension agencies shall be recognized and their capacity building be taken into consideration in HRD. Hence, the HRD in fisheries sector shall take into account the HRD of DoF staff, NGOs, farmers and fishers' communities, and other stakeholders.
- **Recruitment policy:** The freeze on new recruitment in many States shall be removed and adequate professional and technical manpower, based on realistic and scientific assessment of required human resources, shall be recruited for the

proper management of fisheries; the recruitment to DoF be based on professional fisheries education.

- Capacity building and competency development: need based short term and medium term refresher training programs shall become a continuous and in-built program for the various cadre of DoF staff; the content of the training programs to include both the technical knowledge as well as the societal and managerial skills (community mobilisation and organisation skills, participatory management techniques, communication skills, team building skills, ability to work with NGOs, SHGs, etc.).
- Career advancement for DoF personnel shall be linked to the performance evaluation and not merely the seniority in the cadre. There shall also be sufficient promotional avenues. The HR development meant for resource managers to include regular interaction with the local communities to facilitate their overall empowerment in terms of social, economic, access to resources, technical competency and entrepreneurial capacity.
- Emphasis should be given more on fisheries development program instead of focusing on other

administrative jobs. A national level accreditation mechanism for all fisheries education programs in the country shall be instituted to maintain the quality and adequacy (ICAR should initiate discussion with UGC, and take action to de-link fisheries education from UGC and bring it under the jurisdiction of ICAR).

- State fisheries training institutes need to be strengthened with qualified staff and necessary infrastructure facilities. Sufficient hands-on training shall become necessary part of fisheries professional education. Only fisheries professional shall be authorized to certify the health and disease management aspects in fisheries and aquaculture.
- The transfer of technology shall include the complete package including forward linkages (packaging, marketing, etc.).The resource managers shall interact with communities for developing database on indigenous traditional knowledge of fishers.

#### **9.4. Work Group 8: Policy Issues in Service Delivery System**

- Department of Fisheries (DOF) to emerge as a service providing agency for developing the capacity of fishers

and fish farmers technically, socially and economically. They also need to coordinate and mobilise support from various welfare and development agencies (Central / States / NGOs) for the clientele of fisheries sector.

- The potential of ICT has to be gainfully harnessed by service delivery systems for effective service delivery.

- Policy for incorporating travel support including means of travel (motorcycle) shall be an integral part of any development package for the development of fisheries / aquaculture. There should be policy to ensure that all the positions remained filled up to take up program of implementation.
- Encouraging application of innovative extension strategy and approaches for the delivery of services including adequate participation of target groups. Service should be targeted for the overall empowerment of target communities integrating essential human development elements such as social mobilisation, population, education, health and environment.
- Research, education and other R & D institutions should respond to the information needs of the fishers.
- Appropriate training/information tools should be properly developed, periodically updated and made widely available.

## 10. Concluding Session

**Shri Eduardo Faleiro, Special Commissioner, NRI Affairs, Government of Goa** who was also earlier Union Minister for Ocean Development was the Chief Guest during the concluding session. **Shri Anil Salgaonkar, Member of the Legislative Assembly, Goa, Dr. P. V. Dehadrai, Former Deputy Director General (Fisheries), ICAR, and Dr. S.A.H. Abidi, Former Member, ASRB** were the Guests of Honor.

**Dr Dilip Kumar, Director, CIFE** welcomed the august gathering and expressed his special regards to the Chief Guest of the function. He also expressed his heartfelt gratitude to **Shri Anil Salgaonkar** for his kind presence.

**Shri Eduardo Faleiro**, the Chief Guest of the function, in his address, underscored that fisheries development and policymaking process shall be participatory and involve all the stakeholders. Emphasizing that fisheries is a state subject and therefore, the need to evolve a comprehensive state-level fisheries policies, he has also underscored the need for an overarching National level policy as the ocean is one and the fish migrate across different states as they do not recognize whether it is Bengal ocean, Goa ocean or Gujarat ocean. However, he said the respective State policies shall be

synchronized with and be an integral part of the national policy.

He mentioned that India to regain the economic prosperity that it once enjoyed before the colonial exploitation and to become a true superpower in terms of improved livelihood standards for its people, a greater degree of solidarity and cooperation is required with other Asian countries. In the fisheries sector, for example, Indian fishers and farmers can learn and benefit from the experiences of Thailand, Vietnam and China, as there are many resource and socio-economic similarities. Drawing upon his experience from the World Commission on Oceans, he highlighted the danger of giving unrestricted access to foreign fishing vessels, which will destroy not only the livelihoods of poor fishers but also their wisdom gained through generations.

Citing the example of disappearance of cod fishery in Canada due to overexploitation on one hand and the declining income to the poor fishers in India in recent years on the other hand, he argued for a balancing act between the concerns of sustainability of fisheries resources and the livelihood of poor fishers at the same time. Besides, he exhorted the state fisheries departments to reorient from desk oriented department to site (field) oriented department in order to transfer the technologies effectively and provide other support services. He further

mentioned that vehicles and fuel allowance to be made available to the staff of department of fisheries for field work. India is the largest producer of motorcycles in the world. He said the possibility of providing these vehicles to the staff of DoF may be explored. He urged that if Israel with limited natural resources can transform itself to a highly productive agriculture landscape, India could very well excel with appropriate technologies and its proper adoption. Finally, he desired the stringent quality and safety standards that are being applied to the exported fish products to be equally applicable to the domestic market so as to provide safe and quality fish to our consumers.

**Dr. S. C. Mukherjee, Joint Director, CIFE** wholeheartedly thanked all the dignitaries and participants for the fruitful interaction and co-operation extended for the successful conduct of the workshop.

The overall recommendations that emanated from the workshops are given below.

1. The workshop recognized that effective fisheries development and management are possible only when the resource owners and resource users work together for management of resources for sustainable utilization and livelihood security.
2. The extent to which the communities participate in the development and management process depends upon the extent to which the communities are empowered. Therefore empowerment of resource users community should be the centre of focus for development.
3. An enabling and comprehensive fisheries and aquaculture policy is of *utmost importance* for sustainable development of fisheries and aquaculture and harnessing its potential for creating rural livelihood, employment nutritional security and environmental conservation.
4. The policy framework recommended by this Workshop may provide a basis for respective States to formulate policies at their levels depending upon their needs, priorities, available resources and opportunities as well as the country at national level to facilitate regulatory changes and resource allocation to achieve national social objectives.
5. The policy framework developed in the Zonal Workshop can serve as important input for developing a National level overarching Fisheries and Aquaculture Policy framework.
6. The National policy will go a long way in preparing harmonized fisheries

policies of various states through bottom-up policy developmental approach that is sensitive to the concerns of all the states and stakeholders (current as well as future). In this regard FAO Code of Conduct for Responsible Fisheries (CCRF) provides a framework for policy development. The Implementation of CCRF to which India is a signatory should automatically get integrated into policy guidelines.

given preference in allocation of water and land areas for fisheries/aquaculture ventures.

7. Aquaculture to be made at par with agriculture for credit, tax, energy, water and land allocation, considering its role in poverty alleviation, creations of rural alternative livelihood and food and nutritional security.
8. There needs to be a paradigm shift 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 participatory Trickle down System (TDS) for aquaculture are some of the several such innovative approaches.
9. Present trend thrives to create job creators instead of job seekers. Fisheries professionals/graduates need support in policy so that they be
10. To ensure visionary futuristic long term development, based on scientific and technical foundations it is a prerequisite that, Fisheries Department should be guided by Technical person who remain with the Department for long time enough to design and implement new programs and are accountable for their achievements.
11. To harness untapped immense resources and for sustainability, there is a strong case for creation of separate ministry for fisheries at the Union Government Level and also in States where fisheries potential are high and such department doesn't exist.

**Annexure I****Program Schedule****Zonal Workshop on Fisheries and Aquaculture Policy : Responsible fisheries and Sustainable aquaculture perspectives for West Coast States****21-23, June 2007 - ICAR-RC, Old Goa****DAY I: 21.06.2007 Thursday****Venue: ICAR-RC, Old Goa****INAUGURAL SESSION**

09.00-10.00 am	Reception / Registration	
10.15-10.20 am	Welcome Address	Dr. Dilip Kumar Director, CIFE, Mumbai
10.20-10.30 am	Address by the Guest of Honour	Mr. Diwan Chand IAS Secretary (Fisheries) Government of Goa
10.30-10.40 am	Address by the Guest of Honour	Dr. P. V. Dehadrai, Former DDG (Fy), ICAR, New Delhi
10.40-10.50 am	Address by the Guest of Honour	Dr. S. A. H. Abidi, Former Member, ASRB, New Delhi
10.50-11.00 am	Inauguration of the Workshop and Address by the Chief Guest	Shri. Bhupendrasinh Manubha Chudasama Cabinet Minister of Agriculture, Cooperation, Panchayats, Rural Housing, Animal husbandry, Fisheries and Cow breeding Gujarath
11.00-11.05 am	Vote of thanks	Dr. V.S. Korikanthimath Director, ICAR Research Complex, Goa
	High Tea	
11.30- 11.35 am	Workshop Theme and Design	Dr. Dilip Kumar Director, CIFE
11.35-1.30 pm	Session I Fisheries Policy and HRD Perspectives of West Coast States: Policy Over view Status of fisheries and aquaculture / Existing policies and regulatory environment, Flagging of policy related issues including compliance and implementation issues in MFRAs	Chair: Dr. P.V. Dehadrai Rapporteur: Dr. Subramaniam/ Dr. S.N. Ojha Department of Fisheries Kerala, Karnataka, Maharashtra, Gujarat, Goa
1.30-2.30 pm	Lunch Break	
2.30-3.15 pm	Session I (Contd)	

	Status of fisheries and aquaculture / Existing policies and regulatory environment, Flagging of policy related issues including compliance and implementation issues in MFRA's	Department of Fisheries Laksadweep, Daman & Diu and Dadra & Nagar Haveli
3.15-4.15 pm	Open session Focus Department of Fisheries	Chair: Shri A.K.Wasnik Rapporteur: Dr. Subramaniam
4.15 - 4.30 pm	Tea break	
4.30 – 5.15 pm	Session II Policy issues in Capture Fisheries	Chair: Prof. K.K. Ghosh Rapporteur: Dr. S. K. Chakraborty
1.	Marine Fisheries Policy – Overview and Issues	Dr V.S. Murthy
2.	Policy perspective for livelihood of coastal fisheries	Dr. Rekha Gaonkar
3.	Riverine fisheries Policy: Stakeholders Perspective	Shri Anand Kapoor
5.15-6.00 pm	Deliberations and Discussions	

9.30-10.15 am	Session III Policy Issues in Aquaculture	Chair: Dr. P.N.Nataraj Rapporteur: Dr.C.S.Purushothaman
1.	Dialogue on Coastal Aquaculture: Regulation and Management	Dr. A.S. Upadhyay
2.	Policy perspectives for brackish water aquaculture and mariculture, with special reference to west coast of India	Dr.V. S. Chandrshekahran
3.	Aquaculture Policy: Stakeholders perspective	Shri C.V.Naik /Fish farmers
10.15-10.45 am	Deliberations and Discussions	
10.45-11.00 am	Tea Break	
11.00-11.15 am	Policy frame work for development of fisheries and aquaculture	Prof. K. K. Ghosh
11.15-11.30 am	Working Groups Formation of 4 Working Groups and Discussion:	
	a) Policy Issues in Marine capture fisheries Sector;	Chair: Dr. V.S.Murthy Rapporteur : Dr. S.K. Chakraborty
	b) Policy Issues in Inland capture fisheries Sector;	Chair : Prof. K.K.Ghosh Rapporteur : Dr. Latha Shenoy
	c) Policy Issues in fresh water aquaculture	Chair : Dr. Keshavanath Rapporteur : Dr. C.S. Purushothman
	d) Policy Issues in brackishwater aquaculture	
11.30-1.15 pm	Working group discussions	Team leader, Working group
1.15-2.15 pm	Lunch Break	
2.15-3.45 pm	Plenary Session Presentation by 4 working groups and Discussion	Chair: Dr. P.V.Dehadrai Panel : Rapporteurs of Working Groups
3.45-4.00 pm	Tea Break	
4.00-4.30 pm	Session IV Policy Issues in Post harvest Processing, Markets and Trade	Chair: Dr D.D. Nambudiri Rapporteur: Dr.S.Basu/ Dr.G.P.Reddy
1.	Policy guidelines for reducing post harvest losses and value addition	Dr. S.R. Balasubramaniam
2.	Desired reforms in trade policy: Stakeholders perspective	Dr. A.S. Upadhyay Shri B.K. Mishra
4.30-6.00 pm	Deliberations and Discussions	

9.30-9.45 am	Working groups Formation of 4 Working Groups and Discussion:	
	a) Policy Issues in Post harvest and Processing Sector;	Chair: Dr D.D. Nambudiri Rapporteur: Dr. S. Basu
	b) Policy Issues in Markets and trade;	Chair : Prof. K.K. Ghosh Rapporteur : Dr.G.P.Reddy
	c) Policy Issues in HRD;	Chair : Dr. S. C. Mukherjee Rapporteur : Dr. M.P. Singh Kohli
	d) Policy Issues in Service Delivery system	Chair : Dr. Dilip Kumar Rapporteur : Dr. S. R. Balasubramaniam
9.45-11.30 am	Working group discussions	Team leader, Working group
11.30-11.45 am	Tea Break	
11.45-12.30	Plenary Session Presentation by 4 working groups and Discussion	Chair: Prof. K.K. Ghosh Panel : Rapporteurs of Working Groups
12.30-1.30 pm	Valedictory Function Recommendations and Action points	
1.30-2.30 pm	Lunch	

## VALEDICTORY FUNCTION

Date 23.06.2007

Time: 12.30 p.m.

Welcome Address	Dr. V.S. Korikanthimath Director, ICAR Res. Complex Goa
Presentation of recommendations and action points	Dr. Dilip Kumar, Director, CIFE, Mumbai
Remarks	Participants
Address by Guest of Honour	Dr.P V. Dehadrai, Former DDG (Fy), ICAR, New Delhi
Address by Guest of Honour	Dr. S. A. H. Abidi , Former Member ASRB, New Delhi
Address by Guest of Honour	Shri Anil Salgaonkar, Member of Legislative Assembly, Goa Assembly
Address by Chief Guest	Dr. Edwardo Falerio, Commissioner NRI Affairs, Government of Goa
Vote of thanks	Dr. S.C. Mukherjee, Joint Director, Central Institute of Fisheries Education, Mumbai

## Annexure II List of Participants

### **Anjali L.M. Ticlo**

Sr. Technicaln,  
Directorate of Fisheries - Goa,  
Dayanand Bhandodkar Marg,  
Panjim, Goa.  
Phone : 0832-2224838

### **Avit Bagle**

Senior Reporter, Gomantak,  
Gomantak Bhawan,  
St. Inez, Panaji.  
Mob. 09881099254  
Email : avit.bagle@gmail.com

### **A.K. Wasnik, IAS**

Secretary, Fisheries,  
U.T. of Lakshadweep,  
Kavaratti,  
Lakshadweep.  
Mob.09447782998

### **A. Gopalakrishnan Nair**

Executive Director,  
State Fisheries Resource Management  
Society,  
Govt. of Kerala, T.C.28/2812,  
Trivandrum.  
Mob. 09447126556

### **Anand Kapoor**

Founder Member of Shashwat,  
SHASHWAT,  
Opp.Thorat Bldg.,  
Behind Market Yard,  
Manchar, Dist. Pune-410503.  
Mob. 9822659281  
Email : [anandkapoor@vsnl.net](mailto:anandkapoor@vsnl.net)

### **A. S. Upadhyay**

Dy. Director, MPEDA,  
41,TRIFED Tower, Sector-17,  
Opp.Khanda Colony, New Panvel(West),  
Navi Mumbai-410 206  
Mob.09869035077  
Email : [asu2000@rediffmail.com](mailto:asu2000@rediffmail.com)

### **Anthony M. D'souza**

Director,  
Mandovi Fishermen Mktg. Co-op. Society  
Ltd.,  
Malim Jetty, Betim, Bardez, Goa.  
Mob. 09823556399

### **Anil B. Bandekar**

Manager,  
Canara Bank,  
Near Mahatma Gandhi Statue,  
Old Goa.  
Phone : 0832-2285326

### **Anil Kumar P.**

Sub Inspector of Fisheries,  
Agency for Development of Aquaculture,  
Kerala, DPI Junction,  
Vazhuthacau, Trivandrum.  
Mob : 09446616157  
Email : [anil\\_adak@yahoo.com](mailto:anil_adak@yahoo.com)

### **Arun T. Anarthe**

Manager, Canara Bank,  
Near Mahatma Gandhi Statue,  
Old Goa, Goa-403 402.  
Phone : 0832-2285326  
Email : [hbi0321@canban.co.in](mailto:hbi0321@canban.co.in)

**Anil Salgaocar**  
MLA-Sanvordem,  
Salgaoncar Chambers,  
Margao, Goa  
Phone : 0832-2285326

**B.L. Maijekar**  
Senior Scientist,  
ICAR Research Complex,  
Old Goa, Goa-403 402.  
Mob. 09423056583

**Barnabe Dias Sapeco**  
GCCCI Representative,  
Goa Chamber of Commerce & Industry,  
E/231, Sapeco Bldg,  
Corte-de-Oiteino,  
Panjim, Goa  
Mob. 09822169581  
Email : [barnabesapeco@yahoo.co.in](mailto:barnabesapeco@yahoo.co.in)

**Benjamin C. Varghese**  
Zonal Director,  
Fishery Survey of India,  
Zonal Base, Vasco, Goa.  
Phone : 0832-2520957

**Bhanji Haresh Laxman**  
Ex-Chairman,  
Versova Machhimar,  
Pitru Chhaya, Versova Dongar Gally,  
Mumbai-61.  
Mob. 0967092491

**B.K. Mishra**  
Managing Director, FISHCOPFED,  
7-Sarita Vihar Inst. Area,  
New Delhi-76.  
Mob. 9911301828  
Email : [bimalk1234@hotmail.com](mailto:bimalk1234@hotmail.com)

**Balkrishna G. Lolayekar**  
Asstt. Supdt of Fisheries,  
Directorate of Fisheries, Panaji, Goa.  
Phone : 0832-2224838

**Barve Satish Keshav**  
Associate Professor,  
College of Fisheries,  
Shirgaon-415 629, Ratnagiri.  
Mob. 09423047276  
Email : [sk\\_barve@yahoo.co.in](mailto:sk_barve@yahoo.co.in)

**Bhanji G.K.**  
Chairman,  
National Association of Fishermen,  
Padmakishor, Shivgally,  
Versova, Andheri (W), Mumbai-61.  
Mob. 09821007062

**Budaji Damse**  
SHASWAT,  
A/P Manchar, Tal. Ambegaon, Dist. Pune  
Mob. 098069744307  
Email : [shashwantm@vsnl.net](mailto:shashwantm@vsnl.net)

**C.S. Nagarajaiah**  
Dy. Director of Fisheries,  
Directorate of Fisheries,  
Karnataka, 3rd Floor,  
Vishwanath Tower, Bangalore-560001  
Mob. 09886774691

**C.V. Naik**  
General Manager,  
Pancham Aquaculture Farms Ltd.,  
103/B, Mittal Tower, Nariman Point,  
Mumbai-21.  
Phone : 022-22824240  
Email : [panchamaqua@mtnl.net.in](mailto:panchamaqua@mtnl.net.in)

**C.S. Purshothaman**  
Principal Scientist,  
Central Institute of Fisheries Education,  
Versova, Mumbai-61.  
Mob. 09821334010  
Email : [cspurushothaman@cife.edu.in](mailto:cspurushothaman@cife.edu.in)

**H.R. Chidananda Prabhu**  
Subject Matter Specialist (PP) KVK,  
ICAR Research Complex,  
Ela, Old Goa-403 402.  
Mob : 09423057548  
Email : [prabhu@icargoa.res.in](mailto:prabhu@icargoa.res.in)

**Cedric Gomes**  
Chief Executive Officer,  
B.F.D.A., Directorate of Fisheries,  
Panaji, Goa.  
Mob : 09326111627  
Email : [cedric\\_gomes1@yahoo.co.in](mailto:cedric_gomes1@yahoo.co.in)

**Ingole Baban**  
Scientist 'F',  
National Institute of  
Oceanography,  
Dona Paula, Goa-403 004.  
Phone : 0832-2950242  
Email : [baban@nio.org](mailto:baban@nio.org)

**D.D. Nambudiri**  
Dean, College of Fisheries,  
Panangad,  
Kochi-682 506.  
Phone : 0487-2700337  
Email : [dd\\_nambudiri@yahoo.co.in](mailto:dd_nambudiri@yahoo.co.in)

**Chaudhari Ketankumar J.**  
Assistant Professor,  
C/1, Employee Quarters,  
College of Fisheries,  
Shirgaon,  
Ratnagiri-415 629.  
Mob : 09226784915  
Email : [chaudhari.ketan@gmail.com](mailto:chaudhari.ketan@gmail.com)

**Dilip Kumar**  
Director,  
Central Institute of Fisheries Education,  
Mumbai.  
Mob : 09867175702  
Email : [dk.dilipkumar@gmail.com](mailto:dk.dilipkumar@gmail.com)

**Dasari Bhoomaiah**  
Technical Officer,  
Central Institute of  
Fisheries Education,  
Versova, Mumbai-61.  
Mob : 09323705656

**G.P. Reddy**  
Sr. Scientist (Agri-Economics)  
NAARM, Rajendranagar, Hyderabad-30.  
Mob : 09441057712  
Email : [gpreddy@naarm.ernet.in](mailto:gpreddy@naarm.ernet.in)

**G.Rajendran**  
Dy. Director of Fisheries,  
4th Floor, Directorate of Fisheries,  
Vikas Bhavan,  
Thiruvanthapuram, Kerala.  
Mob : 09447141190  
Email : [ddfinland@yahoo.com](mailto:ddfinland@yahoo.com)

**Gabriel Fernandes**  
Pvt. Secretary,  
Central Institute of Fisheries Education,  
Mumbai  
Mob : 09892462098  
Email: [gabriel\\_fernandes2@rediffmail.com](mailto:gabriel_fernandes2@rediffmail.com)

**Gaurishankar R. J. Rage**  
Executive Engineer,  
Mormugao Port Trust, Engg. Civil Dept.  
Main A.O. Building, Headland Sada,  
Goa-403 804.  
Mob : 09423319873  
Email : jirage@rediffmail.com

**Jain I.B.**  
S.I.F. ADAK Kerala.  
Mob : 09447524266

**Keshav A.Prabhu Chodnekar**  
Technical Assistant,  
ICAR Research Complex,  
Old Goa, Goa.  
Mob : 09923070793

**Latha Shenoy**  
Sr. Scientist,  
Central Institute of  
Fisheries Education,  
Versova, Mumbai-61  
Mob : 09920121677

**K.K. Varma**  
Retd. Dean, College of Fisheries,  
Nediyal, Thanniffarambu Madhovm,  
Edappally, Kochi-682 024.  
Mob : 09847945241  
Email : varmacochin@yahoo.com

**R.A. Sreepada**  
Scientist,  
National Institute of Oceanography,  
Dona Paula, Goa-403 004.  
Mob : 094422063172  
Email : sreepada@nio.org

**Rajhans V. Tapke**  
Vithabai, Dongarigalli,  
Versova Koliwada,  
Andheri (West),  
Mumbai-400 061.  
Mob : 09833057040

**K.V. Lokare**  
Dy. Director,  
MPEDA, Ekta Bldg.1,  
3rd Floor, above HDFC Bank,  
Tithal Road,  
Valsad-396 001.  
Mob : 09898064689

**Mahadev Khandekar**  
Reporter, Tarun Bharat,  
Goa.  
Mob : 09850458490

**Mangalmurti Pokle**  
Marketing Officer,  
Directorate of Fisheries,  
Dayanand Bandodkar Marg,  
Panaji, Goa.  
Mob : 09326140425

**Musharraf Ali**  
Asstt. Commissioner (Fy),  
Ministry of Agriculture,  
D.A.H.D.F. Krishi Bhavan,  
New Delhi  
Mob : 09968166842

**Navnath Shivram Koli**  
Vesava Machimar Co-op. Soc.  
Dongri Gally, Vesava, Mumbai-61  
Mob : 09833057040

*Dear,* College of Fisheries,  
Mathsyanagar, Kankanady,

Mangalore-575 002.

Phone : 0824-2248936

Email : perarkeshavanath@yahoo.co.in

**P.M. Tandel**

Hon. President,  
Akhila Karnataka Fishermen Parishad,  
Thingalaya Compound, Mangalore  
Mob : 09448149763

**P.S. Ananthan**

Scientist,  
Central Institute of Fisheries Education,  
Versova, Mumbai-61.  
Mob : 09967035010

**Parag Samel**

Consultant, NAF,  
Saket C-6/603, Saket Balkum Road,  
Thane (W), Maharashtra  
Mob : 09869470545  
Email : parag\_samel@yahoo.com

**Patange S.B.**

Associate Professor,  
College of Fisheries, Shirgaon-415 629,  
Ratnagiri. Phone : 02352-232241  
Email : sbpatange@yahoo.com

**Rajiv Banerjee**

General Manager,  
Indepesca Overseas Pvt. Ltd,  
5B Prasant, Nargis Dutt Road, Pali Hill,  
Mumbai. Mob : 09920399393 Email :  
sea\_food@eim.ae

*Reader in Eco.*

Reader in Eco. MES College of  
Arts & Commerce,

Zuarinagar, Goa-403 726

Phone : 0832-2741090

Email : rekhagaonkar@yahoo.co.in

**S.A.H. Abidi**

CM-11, Sector B, Aliganj,  
Lucknow-226 020  
Mob : 09838763220

**S. Gunakar**

Lecturer,  
Pompei College,  
Aikal Kinnigoli,  
Mangalore.  
Mob : 09449935442  
Email : [kargun73@yahoo.com](mailto:kargun73@yahoo.com)

**S.C. Mukherjee**

Principal Scientist,  
Central Institute of  
Fisheries Education,  
Versova, Mumbai-61.  
Mob : 09821086297  
Email : mukherjeesubhas@yahoo.com

**S.K. Chakraborty**

Principal Scientist,  
Central Institute of Fisheries Education,  
Versova, Mumbai-61.  
Mob : 09892986182  
Email : [sushanta.c@rediffmail.com](mailto:sushanta.c@rediffmail.com) /  
[sushanta123in@yahoo.co.in](mailto:sushanta123in@yahoo.co.in)

**S.Santosh Kumar**

Technical Assistant,  
Agency for Dev. Of Aquaculture,  
Reeja, Minchin Road,

Vazhuttacadu,  
Thiruvananthapuram  
Mob : 09447820016  
Email : [santhoshadak@gmail.com](mailto:santhoshadak@gmail.com)

**Sanjay V. Kandolkar**  
Secretary,  
Mandovi Fishermen  
Mktg. Co-op. Society Ltd,  
Malim Jetty, Betim, Bardez, Goa.  
Mob : 09822126894

**Sanjay S. Chodankar**  
Member,  
Xapora Boat Owners Co-op. Society,  
Xapora, Bardez, Goa  
Mob : 09823992040

**Santosh C. Verenkar**  
Director of Fisheries,  
Directorate of Fisheries,  
Govt. of Goa,  
Panaji, Goa.  
Mob : 09423061582

**Sayyad Sarfaraz**  
Reporter, Goa News,  
Patrakar Colony,  
Porvorim, Goa.  
Mob : 09423307276

**Shamila Monteiro**  
Dy. Director Fisheries,  
Directorate of Fisheries,  
Govt. of Goa, Panaji, Goa.  
Mob : 09326125026  
Email : [shamiladutt@gmail.com](mailto:shamiladutt@gmail.com)

**Shirdhankar Mangesh M.**  
Associate Professor,  
College of Fisheries,  
Shirgaon-415 629, Ratnagiri.  
Mob : 09422431863  
Email : [mangeshshirdhankar@yahoo.com](mailto:mangeshshirdhankar@yahoo.com)

**Shyam S. Salim**  
Scientist,  
Central Institute of Fisheries Education,  
Versova, Mumbai-61.  
Mob : 09819357981

**Subramanian**  
Principal Scientist,  
ICAR Res. Complex for Goa,  
Goa

**Vasudeo Govind Shivkar**  
NAF, Shivkar Niwas,  
House No.30/E,  
Shri-Ram Lane,  
Worli Koliwada,  
Mumbai-30.

**Vijay Dattaram Rane**  
Manager, NABARD,  
Nizari Bhavan, 3rd Floor,  
Menezes Braganza Road,  
Panaji, Goa.  
Mob : 09822387563

**H.R. Prabhudesai**  
Subject Matter Specialist (Agro) KVK,  
ICAR Research Complex,  
Ela, Old Goa-403 402.  
Mob : 09890701500  
Email : [prabhudesai@icargoa.res.in](mailto:prabhudesai@icargoa.res.in)

**Irshad Shaikh**  
Cameraman, Goa News,  
Porvorim, Goa.  
Mob: 09226187523

**J. Krishnababu**  
Dept. of Fisheries,  
Govt. of Gujarat,  
o/o.Comm. of Fisheries,  
Bl.No.10, 3rd Floor,  
Gandhinagar. Mob : 09427510446  
Email : krishnababuj@rediffmail.com

**Jagdish Wash**  
Sr. Journalist, Media Trust,  
10 Journalist Colony.  
Phone : 0832-2417766

**Joseph Silveira**  
Dy.Chief Engineer (Civil)  
Mormugoa Port Trust,  
A.O. Bldg., Headland Sada,  
Goa.403 804.  
Mob : 09422456806

**K.K. Ghosh**  
2A, Mirch Masala,  
Ambadi Road, Vasai (West),  
Dist. Thane-401 202.  
Mob : 09327140940

**K.N. Mohanta**  
Sr. Scientist,  
ICAR Research Complex,  
Ela, Old Goa, Goa.  
Mob : 09423307723  
Email : knmohanta@yahoo.com

**K. Prasadachandran Pillai**  
Addl. Director of Fisheries,  
Dept. of Fisheries,  
Addl. Director of Fisheries,  
2nd Floor, Vikas Bhavan,  
Trivandrum.  
Mob : 09947135360  
Email : prasadachandran@gmail.com

**R.S. Biradar**  
Principal Scientist,  
Central Institute of Fisheries Education,  
Versova, Mumbai-61.  
Mob : 09819744687

**Rajith Kumar K.G.**  
Manager, NABARD,  
Punnen Road, Statue,  
Trivandrum, Kerala  
Mob : 09447738278  
Email : kgranjith1962@yahoo.co.in

**M.P.S. Kohli**  
Principal Scientist,  
Central Institute of Fisheries Education,  
Versova, Mumbai-61.  
Mob : 09820144198  
Email : mpsk\_cife@rediffmail.com

**Mahesh Govenkar**  
Goa Plus, News Channel, Goa.  
Mob : 09822130844

**Mukund K. Karanje**  
NAF, 403, Gorai Saivisava Co-op. Hsg.  
Society,  
Plot No.74, RSC 48,  
Sector-II, Borivali (W),  
Mumbai-400091  
Mob : 09820282979

**Nandkishor V. Verlekar**  
Dy. Director of Fisheries,  
Directorate of Fisheries,  
Govt. of Goa, Dayanand Marg,  
Panaji, Goa.  
Mob : 09823611947

**Neelam Komarpant**  
SRF, ICAR Research Complex for Goa,  
Loyola Hsg Soc. Flat No.C-3, Ambaji  
Fatonda, Salcete, Goa Mob : 09822123868  
Email : neelak2@rediffmail.com

**P. Natarajan**  
Professor,  
Cochin University of Science & Technology,  
Cochin-682 022, Kerala.  
Mob : 09447880881  
Email : purunivkar@hotmail.com

**P.P. Kumbhare**  
Director,  
Directorate of Agriculture,  
Govt. of Goa, Krishi Bhavan,  
Tonca, Caranzalem, Panaji, Goa.

**P.V. Dehadrai**  
Former DDG (Fy), ICAR,  
D3/3403, Vasant Kunj, New Delhi-110 070.  
Phone : 011-26899128  
Email : [pvdehadrai@yahoo.co.uk](mailto:pvdehadrai@yahoo.co.uk)

**Paresh S. Khanolkar**  
Assistant Manager,  
Cameron International, E,404, Ganesh  
Plaza,  
Panvel (W), Raigad.  
Mob : 09970567822  
Email : [kh\\_paresh@rediffmail.com](mailto:kh_paresh@rediffmail.com)

**Pushpalata Dubey**  
Sr.Lecturer,  
Bhagalpur University, C/o. Dr.C.M.  
Upadhyay, Upadhyay Clinic, M.G. Road,  
Bhagalpur-812 001.  
Mob : 09431214406  
Email : [puspabgp@yahoo.com](mailto:puspabgp@yahoo.com)

**Ramesh Harichandar Bari**  
Chairman,  
Maharashtra Rajya Machimar S. Sangh,  
At.Post Kelva, Taluka Palghar,  
Dist. Thane, Pin 401 401D  
Mob : 09890106416

**S. Basu**  
Principal Scientist,  
Central Institute of Fisheries Education, i  
Versova, Mumbai-61. Mob : 09869350664  
Email : [sbasu8@rediffmail.com](mailto:sbasu8@rediffmail.com)

**S.Balasubramaniam**  
Head, Extension Information & Statistics  
Div.  
CIFT, Cochin-682 029.  
Mob : 09895326870

**S. Sreekumar**  
Asstt. Director of Fisheries,  
Govt. of Kerala, Office of  
the Regional Executive,  
ADAK, Opp. TDHSS, Alappuzha, Kerala  
Mob : 09846987644

**S.D. Singh**  
Principal Scientist,  
Central Institute of Fisheries Education,  
Versova, Mumbai-61.  
Mob : 09870484392  
Email : [sdsingh54@rediffmail.com](mailto:sdsingh54@rediffmail.com)

**S.M. Shinde**

Technical Officer,  
Central Institute of Fisheries Education,  
Versova, Mumbai-61.  
Phone : 022-26305617

**S.X. Prince**

Dy. Director (AQ),  
MPEDA, Karwar.  
Phone : 08382-220805

**Sam**

Reporter, Goa.  
Mob : 09970125717

**Samir Vinod Koli**

NAF, 40/E, Shriram Lane,  
Kisan Bhandari HSC,  
Worli Village, Mumbai-30.  
Mob : 09892603911  
Email : sammy@gmail.com

**Samir Narvekar**

Reporter, Goa News  
Mob : 09860031989

**Satish Kamat**

Technical Officer,  
Central Institute of Fisheries Education,  
Versova, Mumbai-61.  
Mob : 09323783998

**Shahnawaz Mayyadi**

Asstt. Cameraman,  
Goa News, Golden Summit Apts,  
1st Floor, Flat No.3,  
Near S.M.R.C. Hospital,  
Chicalim, Vasco. Mob : 09881912435

**Shekhar Kovale**

Dean-Fisheries Faculty,  
College of Fisheries,  
Shirgaon, Ratnagiri.  
Mob : 09423047283  
Email : [skovale@yahoo.com](mailto:skovale@yahoo.com)

**Shridhar Bhagwat**

Manager,  
Goan Bounty,  
Plot No.561-B, Dulapi, Corlim, Tiswadi,  
Goa-403 110. Mob : 09423319503

**Sitakant K. Parab**

Chairman,  
Mandovi Fishermen Mkt. Co-op. Society,  
Malim, Betim, Bardez-Goa.  
Mob : 09822126339

**Sydney Furtado**

Fisherman, All Goa Fishing Boat Owners  
Assn.,  
Behind Zuari Acid Tank,  
Vasco Da Gama.  
Mob : 0922143150

**Vasudev Boloor**

Secretary, National Fish Workers Forum,  
Thingalaya Compound,  
Boloir, Mangalore-575 003  
Mob : 9449207805

**Vinod Kisan Koli**

NAF, 40/E, Shri Ram Lane,  
Kisan Bhandari House,  
Worli Village Mumbai-30.  
Mob : 09224138770 Email :  
[vkk@gmail.com](mailto:vkk@gmail.com)

**Annexure III**  
**List of Work Group Participants**

<b>Work Group I :</b>		<b>Work group 2:</b>	
<b>Policy issues in marine capture fisheries</b>		<b>Policy issues in inland capture fisheries</b>	
1.	A.Gopalakrishnan Nair	1.	A.S. Upadhyay
2.	Anthony M. D'souza	2.	Anand Kapoor
3.	Anthony M. D'souza	3.	B.K. Mishra
4.	Barve Satish Keshav	4.	Budhaji Damse
5.	Benjamin C. Varghese	5.	K.K.Ghosh
6.	Bhanji G.K.	6.	G.Rajendran
7.	Bhanji Haresh Laxman	7.	M.P.S. Kohli
8.	Chandrakant D. Velip	8.	Shyam S Salim
9.	Gaurishankar R. Jirage	9.	P.V. Dehadrai
10.	K.K. Varma	10.	Parag Samel
11.	Kharde Vijay D.	11.	Patange S.B.
12.	M.A. Varghese	12.	Latha Shenoy
13.	M.C. Muthukoya	13.	R.S.Biradar
14.	Mahadev Khandekar	14.	Ranjith Kumar K.G.
15.	Mangalmurti Pokle	15.	S.Basu
16.	Mukta K. Dev	16.	S.D.Singh
17.	Mukund K. Karanje	17.	S.Gunekar
18.	Nandkishor V. Verlekar	18.	S.N.Ojha
19.	Navnath Shivram Koli	19.	Satish Kamat
20.	Nishar Borkar	20.	Shekhar Kovale
21.	P.M. Tandel	21.	Shirdhankar Mangesh M.
22.	Paresh S. Khanolkar	22.	Rajiv Banerjee
23.	Rajan M. Mehar		
24.	S.K.Chakraborty		
25.	Sannyot S. Chodankar		
26.	Shyam S. Salim		
27.	Sitakant K. Parab		
28.	Sydney Furtado		
29.	Upendra Hosbet		
30.	V.S.R. Murthy		
31.	Vasudeo Govind Shivkar		
32.	Vasudev Bloor		
33.	Vinod Vasant Koli		
34.	Vishwajit Laxman Parab		

**Work Group 3:  
Policy Issues in Brackishwater  
Aquaculture**

1. Anjali L.M. Ticlo
2. Anil B. Bandekar
3. B.L. Manjunath
4. C.S. Purshothaman
5. Chaudhari Ketankumar
6. G.P. Reddy
7. H.R. Prabhudesai
8. H.R.Chidananda Prabhu
9. J. Krishnababu
10. K.K. Ghosh
11. K.N. Mohanta
12. K.Prasadchandran Pillai
13. Keshav Chodnekar
14. Musharraf Ali
15. Neelam Komarpant
16. P.Keshavanath
17. P.Natarajan
18. P.P. Kumshare
19. Rajhans V. Tapke
20. Ramdas Sandhe
21. Ramesh Bari
22. Rekha R. Gaonkar
23. S.P. Singh
24. Samar Vinod Koli
25. Sanjay V. Kandolkar
26. Vijay Dattaram Rane
27. Dillip Kumar

**Work Group 4:  
Policy Issues in Freshwater  
Aquaculture**

1. Anil Kumar
2. Anil Salgaonkar
3. Arun T. Anarthe
4. Avit Bagle
5. Balakrishna Lolayekar
6. Barnabe Dias Sapelo
7. C.V. Naik
8. Cedric Gomes
9. Ingole Baban
10. Jain I.B.
11. John Ralino Fernandes
12. K.V. Lokare
13. R.A. Sreepada
14. S. Balasubramaniam
15. S.C.Mukherjee
16. S.Santhosh Kumar
17. S. Sreekumar
18. S.X. Prince
19. Sanosh C. Vernekar
20. Shamila Monteiro
21. Shridhar Bhagwat
22. V.S. Chandrasekaran
23. Z.A. Ansari
24. V.S. Korikanthimath

**Work Group 5:  
Policy Issues in Processing Sector**

**Work Group 6:  
Policy Issues in Markets And Trade**

- 1 A. Gopalakrishnan Nair
- 2 A.K. Wasnik, IAS
- 3 Anthony M. D'souza
- 4 Barve Satish Keshav
- 5 Benjamin C. Varghese
- 6 Chandrakant D. Velip
- 7 D.D. Nambudiri
- 8 Gaurishankar R. Jirage
- 9 K.K. Varma
- 10 Kharde Vijay D.
- 11 M.A. Varghese
- 12 M.C. Muthukoya
- 13 Mahadev Khandekar
- 14 Mangalmurti Pokle
- 15 Mukta K. Dev
- 16 Mukund K. Karanje
- 17 Nandkishor V. Verlekar
- 18 Navnath Shivram Koli
- 19 Nishar Borkar
- 20 P.M. Tandel
- 21 Paresh S. Khanolkar
- 22 Patange S.B.
- 23 Rajan M. Mehar
- 24 S.Basu
- 25 Sanyyot S. Chodankar
- 26 Shekhar Kovale
- 27 Sitakant K. Parab
28. Sydney Furtado
29. Vasudeo Govind Shivkar
30. Vasudev Bloor

1. A.S. Upadhyay
2. Anand Kapoor
3. B.K. Mishra
4. Budhaji Damse
5. G.P. Reddy
6. G.Rajendran
7. K.K. Ghosh
8. M.P.S. Kohli
9. P.S.Anthan
10. P.V. Dehadrai
11. Parag Samel
12. Pushpa Lata Dubey
13. R.S.Biradar
14. Rajiv Banerjee
15. Ranjith Kumar K.G.
16. Rekha R. Gaonkar
17. S.Gunekar
18. Shirdhankar Mangesh M.
19. Shyam S. Salim
20. Suchitra Upare

**Work Group 7:  
Policy Issues in HRD**

**Work Group 8:  
Policy Issues in Service Delivery System**

1. Anil B. Bandekar
2. Anjali L.M. Ticlo
3. B.L. Manjunath
4. C.S. Purshothaman
5. Chaudhari Ketankumar
6. H.R.Chidananda Prabhu
7. J. Krishnababu
8. K.N. Mohanta
9. K.Prasadchandran Pillai
10. Keshav Chodnekar
11. Musharraf Ali
12. Neelam Komarpant
13. P.Keshavanath.
14. P.Natarajan
15. P.P. Kumshare
16. Ramdas Sandhe
17. Ramesh Bari
18. S.C.Mukherjee
19. S.P. Singh
20. Samar Vinod Koli
21. Sanjay V. Kandolkar
22. V.S.R. Murthy
23. Vijay Dattaram Rane
24. Latha Shenoy

1. Anil Kumar
2. Anil Salgaonkar
3. Arun T. Anarthe
4. Avit Bagle
5. Balakrishna Lolayekar
6. Barnabe Dias Sapelo
7. Bhanji G.K.
8. Bhanji Haresh Laxman
9. C.V. Naik
10. Cedric Gomes
11. Dilip Kumar
12. H.R. Prabhudesai
13. Ingole Baban
14. Jain I.B.
15. John Ralino Fernandes
16. K.V. Lokare
17. R.A. Sreepada
18. Rajhans V. Tapke
19. S. Balasubramaniam
20. S.D.Singh
21. S.K.Chakraborty
22. S.N.Ojha
23. S.Santhosh Kumar
24. S.Sreekumar
25. S.X. Prince
26. Sanosh C. Vernekar
27. Satish Kamat
28. Shamila Monteiro
29. Shridhar Bhagwat
30. Upendra Hosbet
31. V.S. Chandrasekaran
32. V.S.Korikanthimath
33. Vinod Vasant Koli
34. Vishwajit Laxman Parab
35. Z.A. Ansari



## Our Locations

---

### Headquarter

#### 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](mailto:contact@cife.edu.in)

### Centres

**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](mailto: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](mailto: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](mailto: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](mailto:powarkhedacentre@cife.edu.in)