

## **International Collective in Support of Fishworkers (ICSF)**

### **IMPROVING INLAND FISHERIES GOVERNANCE IN INDIA**

#### **In the context of the DRAFT NATIONAL POLICY ON INLAND FISHERIES AND AQUACULTURE, INDIA, AND THE FAO SSF GUIDELINES**

**Workshop: 6<sup>th</sup> - 7<sup>th</sup> September 2019, Kolkata, India**

#### **EXECUTIVE SUMMARY**

A national workshop was organised on 6<sup>th</sup> and 7<sup>th</sup> September 2019 in Kolkata to develop the implementation plan for India's 2018 Draft National Policy on Inland Fisheries and Aquaculture (NIFAP). The Objectives of the Workshop were:

- To review existing social and ecological knowledge gaps that might influence processes and outcomes of existing and proposed inland fisheries governance systems;
- To develop realistic long-term and short-term action points to implement NIFAP with special emphasis on vulnerable and marginalised groups;
- To integrate elements of the SSF Guidelines in the implementation of NIFAP within the framework of a human rights-based approach; and
- To empower fishers and fishworkers to help build their institutional capacity and raise awareness about the SSF Guidelines in the context of implementing the NIFAP.

The Workshop was attended by almost 90 participants drawn from seventeen states and leading fisheries institutions.

The Inaugural Address was delivered by Gopal Krishna, Director / Vice Chancellor, ICAR – CIFE (Central Institute of Fisheries Education - Central Institute of Fisheries Education), Mumbai. He said the inland fisheries and aquaculture policy has been submitted to the Government of India but is still under scrutiny. The concerns of every one especially those related to resources, conservation and livelihoods had to be attended in the policy document. When the document finally comes from the Government of India, there should be a detailed implementation plan so that the policy is implemented in letter and spirit.

Pradip Chatterjee, convener of the National Platform for Small-Scale Fish Workers (Inland) said that in 2016, they had formed the national platform with the sole objective to push forward the policy on inland fisheries. A year later, they learnt that the government was preparing such a document. He pointed out that small-scale fishers and fish farmers are the largest non-consumptive stakeholders of India's water bodies and natural custodians of water as good fish require good water.

Nachiket Kelkar, Ph.D. Student, Academy of Conservation Science and Sustainability Studies, ATREE, Bengaluru, explained the purpose of the workshop and said addressing diverse types of conflicts pertaining to tenure-related issues was very important for inland fisheries.

Delivering the keynote address, B. K. Das, Director, ICAR-Central Inland Fisheries Research Institute (CIFRI), Barrackpore, Kolkata, said, community empowerment and inter-departmental linkages were essential as was a census of inland fishers. Sebastian Mathew, Executive Director, International Collective in Support of Fishworkers (ICSF), explained the reasoning behind ICSF conducting the workshop and outlined the workshop objectives.

The first session was on 'Tenure Systems, Institutions and Governance' with the lead presentation made by V. Sugunan, Assistant Director General (Retd), Indian Council of Agricultural Research (ICAR), New Delhi. He explained that in inland fisheries, there were a range of rights and tenure arrangements from open-access capture fisheries in rivers and wetlands to hyper-intensive aquaculture in commercially managed systems. As production and productivity increased, sustainability and equity trended in the opposite direction. In fisheries, tenure was still an emerging concept unlike the land sector where there were *pattas*; most issues in inland fisheries were related to tenure. He concluded that the national policy should affirm primary ownership of fisheries (fishing rights) to the communities.

The other presentation in this session was made by Nachiket Kelkar who focused on the links between tenure systems and the sustainable use and environmental/biodiversity conservation of different inland waters. He also discussed, through case studies, the possibilities for adaptive management in existing tenure systems, in relation to ecological, economic and socio-political change in fisheries.

Session two was on 'Fisheries Legislation, Policy Implementation and the Environment'. There were three presentations in this session. The first by Ganesh Chandra, Senior Scientist, CIFRI dealt with 'Fisheries Legislation and its Impact on Inland Fisheries in India'. After outlining the laws in various states, he explained their convergence and divergence. With regard to human rights of fishers, he spoke about water and how various states defined leasing system to cooperative societies. He ended his presentation by reviewing the various constraints and challenges.

P.S. Ananthan from ICAR-CIFE spoke about 'Status of Policies and Legislative Environment in Inland Fisheries of Indian States' and shared experiences from case studies mainly in reservoirs. He highlighted the convergences and divergences between different state legislations, policies and the realities of their implementation. He pointed out that extension and service delivery systems that served as crucial links for fishers were inadequate due to high vacancies and the relative neglect of fisheries directorates.

The third presentation, made by M.K. Das from CIFRI focused on 'Environmental Constraints for Inland Fisheries Development: Issues and Management Options'. He explained the Climate-Smart Agriculture and Fisheries programmes for identifying

technologies through multi-criteria analysis and listed the top ten technologies for fisheries and aquaculture with brackishwater aquaculture leading the list.

The theme of the third session was 'Socio-Economic Development, Gender Issues and Role of Cooperatives'. Three presentations were made. The first presentation made by Bibha Kumari from the P.G. Department of Zoology, Patna University, Patna, Bihar, centred on 'Shifting of Women fish vendors from the fish selling sites of Patna, Bihar'. She explained how participation of women was declining in fish markets and they were being compelled to sell fish on footpaths and other locations. Their participation in fisheries was also abating along with its decline. She presented a case study of impacts on Patna women fishworkers due to ban of fish sales because of the presence of formalin in fish.

Aparna Roy from the Central Inland Fisheries Research Institute (CIFRI) spoke about 'Socio-economic and gender issues in inland open waters', citing examples from the Sunderbans to explain gender dimensions and the changing 'gender role' over time. B.K. Mishra, Managing Director, the National Federation of Fisheries Cooperatives Limited (FISHCOPFED), New Delhi, made a very detailed presentation on fisheries cooperatives and FISHCOPFED's Vision 2022 which included setting up training centres, demonstration-cum-production units, hatcheries etc. During and after every session, there were detailed discussions. Group discussions (State/ linguistic groups) on developing short-term and long-term recommendations for 'secure tenure, policy reforms, and development of legislation for environment protection, social development and gender equity from the SSF Guidelines perspective' were also held. Key points were presented by rapporteurs of each group. Nachiket Kelkar presented short-term and long-term recommendations on behalf of the workshop for the implementation of the draft National Policy on Inland Fisheries and Aquaculture 2019. In the valedictory session, Dilip Kumar, Fisheries Sector Planning, Policy and Development Adviser and Ex- Director and Vice-Chancellor, (ICAR) and Central Institute of Fisheries Education (CIFE), Mumbai, discussed the recommendations, urging that those missing from the draft Policy and Action Points should be highlighted and that there should be public-private-community partnership.

## ABBREVIATIONS

CBO	Community Based Organization
CCRF	Code of Conduct for Responsible Fisheries
CFR	Community Forest Rights
CIBA	Central Institute of Brackishwater Aquaculture
CIFE	Central Institute of Fisheries Education
CIFRI	Central Inland Fisheries Research Institute
CMFRI	Central Marine Fisheries Research Institute
CPUE	Catch per Unit Effort
CSR	Corporate Social Responsibility
DAT	Distress Alert Transmitter
DBT	Direct Benefit Transfer
DCFR	Directorate of Coldwater fisheries
FAO	Food and Agricultural Organisation (of the United Nations)
FISHCOPFED	Federation of Fisheries Cooperatives
FPG	Fish Production Groups
FPO	Farmer Producer Organisation
GDP	Gross Domestic Product
GO	Government Orders
GOI	Government of India
ICAR	Indian Council for Agricultural Research
ICSF	International Collective in Support of Fishworkers
JFM	Joint Forest Management
JIFM	Joint Inland Forest Management
MOEFCC	Ministry of Environment, Forest and Climate Change
NBGR	National Bureau of Fish Genetic Resources
NCDC	National Cooperative Development Corporation
NFDB	National Fisheries Development Board
NGO	Non Governmental Organisation
NIFAP	National Inland Fisheries and Aquaculture Policy
PFCS	Primary Fishery Cooperative Societies
PMFBY	Pradhan Mantri Fasal Bima Yojana
PMJBY	Pradhan Mantri Jeevan Jyoti Bima Yojana
PMSBY	Pradhan Mantri Suraksha Bima Yojana
PPP	Private-Public-People Partnership
PRI	Panchayati Raj Institutions
R&D	Research and Development
SCP	Special Contingency Policy
SDG	Sustainable Development Goals
SHG	Self Help Group
SSF Guidelines	FAO's Guidelines for Small-Scale Fisheries
SWOT	Strength, Weakness, Opportunities, Threat
UNFSA	UN Fish Stocks Agreement
VGSSF	Voluntary Guidelines for Small-Scale Fishers
WLPA	Wild Life Protection Act



**International Collective in Support of Fishworkers (ICSF)**

**NATIONAL WORKSHOP:  
TOWARDS DEVELOPING AN IMPLEMENTATION PLAN  
FOR INDIA'S 2019(DRAFT) NATIONAL POLICY  
ON INLAND FISHERIES AND AQUACULTURE (NIFAP) AND THE SSF  
GUIDELINES Seva Kendra Calcutta, Kolkata, West Bengal, India**

**6<sup>th</sup> and 7<sup>th</sup>September 2019**

**INAUGURAL SESSION**

**Welcome: Nalini Nayak, Trustee, ICSF Trust**

Nalini Nayak welcomed participants, scientists, fishing community members, activists in the sector and introduced the speakers on the dais, two of whom had contributed to the development of the NIFAP. She hoped considerable inputs would emerge during the workshop to develop an implementation plan for fishworkers and their organisations to take it forward.

**N. Venugopalan** of ICSF formally welcomed all participants for the two day workshop. He thanked the Food and Agriculture Organization (FAO) for supporting ICSF in conducting a series of workshops for implementing the policy on Marine Fisheries. This was the third in the series, with the earlier two having been conducted in Chennai: one on National Policy on Marine Fisheries and the other on Mainstreaming Gender into Fisheries. The fourth, on local self-governance, was expected to be held in October while the last would take the outputs from all earlier workshops and present them to the Government of India in March, the following year.

**Inaugural Address: Gopal Krishna, Director and Vice Chancellor of Central Institute of Fisheries Education (CIFE), Mumbai**

Giving a brief background of the NIFAP, he said the Government of India had formed a committee under the chairmanship of Dilip Kumar with about fifteen members. He had been part of the Marine Fisheries Policy and Inland Fisheries Policy committees. A number of

regional workshops had been organised and different stakeholders across the country from different walks of life were invited. While the Marine Fisheries Policy had been accepted by the Government, the Inland Fisheries and Aquaculture Policy was still under scrutiny. When the document finally comes from the Government of India, there should be a detailed implementation plan so that the policy is implemented in letter and spirit. To implement ecological and environmental concerns, different components of the environment, biological or non-biological, that have to be addressed, must be identified. The social environment is also very important as the people who have to maintain the resources should know the different components.

He said concerns regarding conservation and livelihood had to be coalesced in the policy document. The resources should be considered the property of stakeholders and their utilisation today should take future needs into consideration. The environment should be conducive to fish growth as the responsibility to ensure stock, rejuvenation and rehabilitation rests with the fishing community and attempts to prevent the harvesting of juveniles must be made. During the fishing ban period, alternative livelihood opportunities from fishing or allied sectors should be provided. For this, awareness and training programmes should be conducted. He shared examples of programmes conducted by his institute and said a number of institutions would have to participate in this process to create awareness about alternative livelihood opportunities. The focus should be on training the trainers for a wider reach. Since fisheries resources would only survive in a healthy environment, the aquatic environment had to be favourable for the growth of the animals. Instead of depending on outsiders, it was their responsibility to conserve the environment. If the policy was implemented with the objective that today's resources were the property of tomorrow's generation it would help fishers today, the future generation tomorrow and the environment. He also stressed on the importance of capacity building (extension and training activities) for fishers to enable them to restore and effectively manage inland fisheries.

### **Opening Remarks: Pradip Chatterjee, Convenor, National Platform for Small- Scale Fish Workers (Inland)**

He began by recalling that recommendations for the VGSSF had been prepared in the same hall in 2011, and recalled Chandrika Sharma who had put forward the need for such a national policy on inland fisheries. He thanked ICSF for holding this timely workshop, as the final policy for inland fisheries had not been released. He said the workshop was important as the volume of freshwater fish production was twice as much as marine fish production; the same was the case with regard to the number of workers engaged in the sector, contributing to food security and employment. While the existing 2004 policy on marine fisheries was updated in 2017, there was no policy on inland fisheries. In 2016, they had formed a platform with about eight to ten states participating to demand an inland fisheries policy. They learnt the following year (2017) that the government had formed a committee and had circulated questionnaires. However, as these were in English and online, they remained accessible to a large number of stakeholders. They had nevertheless, put forward their recommendations and the government had invited them for the final workshop in April 2018. In that workshop, they

had submitted their recommendations once again. But after the workshop, it took a long time for the government to come up with a draft which eventually came out on 27th February, 2019, after two reminders, just before the elections. They had put forward their comments on the draft and were now waiting for the final policy. version.

He said despite these important milestones, there was not much momentum regarding the issue pertaining to fishing rights. Fishers and fishfarmers do not have any rights over water. Rivers are being linked, national waterways are being declared, waterbodies are being encroached and there is severe pollution. While leases are given, they are not secure. Discussions regarding conservation or sustainable use will come to a nought if the fishworkers do not have rights over water. This demand was going to unite both the marine and inland sectors.

He pointed out that small-scale fishers and fishfarmers are the largest non-consumptive stakeholders of waterbodies in India and as good fish needs good water, they are the natural custodians of water. When waterbodies are polluted or encroached upon, or when water is lifted indiscriminately from natural waterbodies, fish stock suffers. He said fishing villages along river banks of great river basins in India are getting deserted. Unfortunately, the national water policy of the country does not even mention fisheries or fishworkers.

He concluded with the hope that the workshop would take up all these issues through its collective wisdom from various exercises. On 8th September, they were to have a meeting of the national platform for inland fishers and he believed the deliberations during the workshop would help them considerably.

**Nachiket Kelkar, Ph.D. Student, Academy of Conservation Science and Sustainability Studies, ATREE, Bengaluru**

One of the most important aspects of the policy is that it is envisioned as an evolving instrument, said Nachiket Kelkar. At the same time, there are many questions that the policy opens up for discussion. The word 'inland' itself is a convenient word as it engulfs and encompasses culture fisheries and capture fisheries of all freshwater and estuarine systems together. However, it was necessary to analyse the word 'inland'. It has land as one part of the word and as is well known, land rights and land ownership are very strongly linked to ownership of water eventoday. According to him, it was something that needed deconstruction to find answers to on-ground issues facing fisheries. Similarly, the contestations between capture fisheries and culture fisheries had to be deconstructed. Culture fisheries are very important for food security from the perspective of large-scale fish production in the country and the employment of several people. But the expansion of aquaculture has come alongside the continued neglect of the capture fisheries sector in rivers, floodplain wetlands and commons, in general. The collective concern is related to rights – right to fish and to have a secure tenure in fishing. But there is simultaneously a need to closely engage with the government policies while staying critical instead of just criticising. We need to be sympathetic to the balancing acts any government policy needs to undertake; such as issues of biodiversity, conservation, pollution, rights, revenue and food security.

Kelkar said they tried to analyse and interpret the policy from the lens of trade-offs between different priorities of society as a whole and along with the trade-off, the conflicts that exist which need attention. While a full resolution might never be guaranteed for historically deep conflicts, attempts towards resolving them are very important. The acknowledgement that conflicts exist is also missing and that is partly the way inland fisheries tend to be projected. While it is good to say that India is the second largest producer of inland fish, some of the darker aspects are often ignored, which are important to bring to the table. There has been so much modification of natural waterbodies in various ways that the threat of climate change no longer belongs to the future; it is an everyday threat even in inland fisheries. Looking at state legislations across the country, there are some important common threads of both opportunities and challenges. One is the importance of tradition in fishing: state policies are focused on protecting rights of traditional fishers first. Second is the idea that communities have to collectively act and protect their resources, feel ownership, get ownership rights and secure tenure. However, it is necessary to ask what tradition means in the present day and how much of this traditional knowledge remains relevant. In such cases, the question arises regarding the amount of reliance that can be placed only on the fact that some aspect of traditional identity is involved. In our country, typically, traditional identity is not entirely separate from caste and this means a certain caste politics and therefore, are we willing to engage in it when we privilege traditional identity as the ticket to rights and tenure is, one question. The second is the question of community. Most fishers in the Gangetic plain, when asked, say that they engage in fishing but will not allow their children to fish. So what 'community' are we talking about, is another big question. These kinds of questions break open and unpack categories in the discussion and become really important in the context of the national policy guidelines and the SSF focus on human rights and fishing rights. Labour issues in fisheries and dignity are all connected to the rapidly changing economy and climate.

He concluded that these are the hard questions and trade-offs that we need to engage with. He also formally presented his full report (a situation paper on the Governance of Inland Fisheries and Aquaculture in India in the context of India's Draft National Inland Fisheries and Aquaculture policy and the FAO's SSF guidelines.) to Gopal Krishna and B.K. Das.

**Keynote Address: B.K. Das, Director, ICAR-Central Inland Fisheries Research Institute (CIFRI), Barrackpore, Kolkata**

Das spoke about CIFRI which was established in 1947 to focus on the inland fisheries sector, along with the the Central Marine Fisheries Research Institute (CMFRI) which works with the marine sector. For the inland Blue Economy, composite fish culture and fish breeding serve as the backbone, the foundations for which were laid in the 1950s. Today, of the 12 million metric tonnes of fish production, nearly 8 million metric tonnes is from the inland sector. In 1997, the institute gave rise to the Central Institute of Freshwater Aquaculture (CIFA), Central Institute of Brackishwater Aquaculture (CIBA), Directorate of Coldwater fisheries (DCFR) and National Bureau of Fish Genetic Resources (NBGR). Since then

CIFRI's mandate has been to work on open water fisheries like rivers, reservoirs, wetlands, estuaries, canals and derelict water-bodies of the country.

Das said references to small-scale fisheries across the globe were more often linked to marine fisheries with the inland fisheries sector, barely mentioned. On the other hand, in the Indian economy, small-scale inland fishers worked in places like rivers, reservoir, wetlands and estuarine zones. However, since they were not empowered, they did not want the next generation to continue fishing. Labour migration and permanent exit from fisheries were already becoming common features. A vast majority of fishers belonged to the scheduled caste communities or tribals and rarely had their own ponds and had to take waterbodies on lease, often through cooperatives. Although the government was pouring seed money, non-empowerment of cooperatives meant that they did not function efficiently.

It was essential to study the socio-economics of inland fishers, to measure their social security. Though bills, governance, or inland policy exist, unless they have social security and social economy, it will be difficult to ascertain where they stand. Hunger should be addressed first because if hunger prevails, no rules work.

Another important point he made was the lack of data regarding the inland fisher population. Unless there were realistic estimates, it was not possible to do any effective planning for appropriate interventions. He cited the Bihar wetland as an example where the production had been increased from 17 to 54 tonnes through an NFDB (National Fisheries Development Board) project funded through his institute. A three-fold increase in production had working days going up from 44 man days to 152 man days after three years, but they were not sure if such production levels would continue after the project period. He said his institute had been working on ten major river systems and was calculating the socio-economic profile of riverine fishing communities to give a sectoral view including their conditions, their livelihood, catch and other such aspects.

Das also drew attention to the growing problem of plastic waste. In the National Mission for clean Ganga, they found decreasing biodiversity, with increasing alien species. Plastic was a major threat – in a basket of 10 kg, there was 7 kg plastic leading to concerns about microplastics and human health. It was necessary for multiple government agencies to come together and take decisions on appropriate action. Talking about parity and disparity in the sector, Das said reservoirs were considered sleeping giants, but for how long? In Madhya Pradesh, this was a well-managed and organised sector that could give large amounts of money to the fisheries department of the state. This showed that corporate sector using CSR (Corporate Social Responsibilities) skills could generate employment and productivity without hampering social security and livelihood.

He said that cage culture had been started with government subsidies. The sectoral investment was huge. One cage of 90 m<sup>3</sup> water area could yield three tonnes of shark catfish (*Pangasius hypothalamus*). A battery of six or ten cages required massive investments but could give 24 or 48 tonnes. He pointed that out while talking about women Primary Fishery Cooperative Societies (PFCS), partnerships etc. marketing was forgotten. Thus, prices varied; in

Chhattisgarh it was INR 80 (INR 70 = 1USD), in Bihar it was INR100 and in Odisha, it was INR 65. Addressing the value-chain was not a priority of the state, with the result that if production went up, buyers pushed down the market price. Therefore, while looking at a commodity, an analysis of its market value-chain should also be addressed.

A SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis of the sector was also needed together with continuous dialogue and the improvement required for sectoral benefits. In the last three years, the institute has been involved in various programmes related to biodiversity, governance and wetland management. It had conducted a lot of reservoir demonstration programmes, capacity building, social mobilisation, wetland management protocols on the banks of wetlands. Pointing out that Bangladesh was ahead in Hilsa management, he said, obtaining fish passes in Farakka entailed talking with the water development authority to open Gate number 25A; they had also released about 200 Hilsas. He said that another experiment was related to the multi-tropic polyculture systems in Kerala and it was necessary to locate some technology that could sustain livelihoods before preaching these kinds of target interventions.

In terms of sector development, there was a need to look at the investment, manpower requirement and our position in terms of what it can contribute to the ecosystem goods and services. Empowering those on the bank of the river like declaring sanctuaries or breeding grounds would enable having certain ranching facilities. In 2018, they ranched around 18 lakh (one lakh = 100,000) fingerlings of which perhaps only 10% survived. Out of these, half could be roe fish and after 3-5 years, stock improvement could be seen. There was enormous potential to give fisheries enhancement protocols to riverine resources. Wetlands were breeding grounds for small fishes. Though there was a wetland authority, the authority did not carry out priority linkage with the others. When people worked in isolation, achieving goals was a big dream.

Expressing concern over destructive fishing including juvenile prawn fishing in the Sundarbans, Das said there might be an income of INR16 crore now, but the question was the extent of loss in the long run. Empowerment and awareness were essential to overcome these issues. There were many programmes that were well managed including the Chilika Ramsar site and the East Kolkata wetlands. It was also essential to make cooperatives efficient and self-sustaining without constantly propping them up by injecting funds; when they became givers, the small-scale fisheries would become self-reliant and richer, he concluded.

**On workshop objectives: Sebastian Mathew, Executive Director, ICSF Trust.**

Sebastian Mathew explained the reason for ICSF organising a meeting like this went back to its founding, when it had tried to look at small-scale fishers and fishing communities' access to resources and in that context, looking at men and women who were involved in small-scale fisheries. Initially the focus was mainly on marine fisheries. Over a period of time ICSF realised that it was necessary to talk about both the marine and inland sectors in discussions on fisheries because in one of the meetings in Bangkok in 1991, people talked about how fish from the waterbodies and rice from the field were very important for south east Asian

countries. He recalled reading an article from Nepal that referred to Mount Everest as Sagarmatha; and hence should not see a disconnect between inland and marine fisheries. They are now seen as equally important. From 1991 onwards, ICSF actively engaged in the Earth Summit. The word 'fishworker' viewed by ICSF as a gender-neutral term and now used in the UN family of legal instruments was first picked up from the Earth Summit. ICSF very actively engaged with FAO during the Code of Conduct for Responsible Fisheries (CCRF), which was one of the main instruments responsible for developing an ecosystem approach to fisheries again; but once again the main thrust of its focus was on marine fisheries. After the concept of the ecosystem approach to fisheries became enshrined in the Code and subsequently into other instruments, such as the United Nations Fish Stocks Agreement (UNFSA), there was a consensus that the ecosystem approach was applicable to inland fisheries, marine fisheries, habitats, resources, and the relationship between habitat and resources. But what about the human dimension?

This was one area in which several ICSF members and some workshops clearly highlighted the importance of human rights which was seen as balancing the ecosystem approach. The role of communities, fishermen and fisherwomen in the larger scheme of things cannot be denied, therefore ICSF started highlighting the importance of human rights and the human rights approach; this was visibly reflected in the Guidelines for the Governance of Tenure published by the FAO and was soon followed by the 2014 Guidelines for SSF. These two instruments, capturing the human rights dimension and the governance of tenure also look at the importance of tenure rights. Thus, the ecosystem approach, human rights and tenure rights are the three pillars on which the world communities are engaging with fisheries-related issues which ensure a more inclusive approach. This opens up avenues for looking at protection, conservation and management of fisheries leading to better enjoyment of human rights. On the other side, protecting human rights is an incentive – if education, health, sanitation are all guaranteed, then there can be a better realization that communities can also help in management and can also be an incentive for conservation and sustainable development in the use of fisheries resources.

Thus, an interlocking of perspectives is what ICSF is interested in and is trying to articulate in various workshops. Discussions on inland fisheries cannot be limited to fish and must include water, fish and land – the three dimensions, within this context. Therefore, we would like to look at human rights to water – the UN Conference on Oceans had highlighted human rights to water as an important prerequisite for enjoying other human rights. Hence, any discussions on Sustainable Development Goals (SDGs), must include human rights to water.

Mathew said there is the UN Convention on Watercourses (UNWC) that is in force though not yet ratified by India. In Asia, only Vietnam has ratified this Convention which talks about two important concepts such as fair and equitable allocation of water and the importance of consumptive and non-consumptive use of water. In the National Policy on Inland Fisheries, consumptive and non-consumptive use is a key aspect of tenure management, though fair and equitable allocation of water is also important. Thus, tenure rights need to be viewed in the context of irrigation, flood control, power generation, fishing to see whether this dimension is

also developed. In this perspective, attempts were being made to see if the SSF Guidelines which combinethe ecosystem approach with the human rights approach can be transposed into national policies.

Mathew mentioned that while 40% of fish productionwas coming from inland resources, less than 4% global policy space was dedicated to inland fisheries and aquaculture. ICSF had organised a very big meeting in Brazil in Amazonia – a state as big as India – and was trying to see how elements of these meetings could be transposed. The Government of India (GOI)which was also at the FAO meeting at Bangkok said it was interested in the recommendations of this workshop being used to strengthen the final version of the policy which is still in the draft format. Therefore, inclusion oftenure rights in terms of short-term and long-term action points can also be made from this workshop.

The objectives of the workshop were at three levels. At the highest level, it included governance of both freshwater and brackish water fisheries systems and different types of waterbodies, trying to see the various uses of water and the kind of governance necessary to address various issues. While this is a very complex area, it is necessary to begin by looking at social and ecological gaps which need to be understood to improve governance in different kinds of regimes. At the next level, it is essential to see if short-term and long-term action plans can be proposed and whether these guidelines can be useful in making important recommendations; how the draft policy can be strengthened and how elements of the draft policy which enter the final version can be implemented effectively. Therefore, the second part of the objective will be mainly focusing on how the national policy can be improved or elements can be transposed into action at the local level and the kind of short-term and long-term points that needto be articulated, keeping in mind the vulnerable and marginalised – women, migrants’ issues, tribal communities, those displaced by various water-related programmes and activities. Lastly, to use this workshop in capacity building of organisations so that they have a better understanding of the language being used, the legislation and policy, and some of the practices that might emerge, looking at formal and informal systems; and whether the collective knowledge of this group can help in strengthening the national policy when it is implemented.

## **Discussion**

Sebastio Rodrigues from Goa wanted to know if states were obliged to honour policies made at national-level since fisheries was a state subject. Roy from West Bengal said the introduction of urea in agriculture had affected the land and its impact on the waterbodies was a matter of concern. BK Mishra said 2003 was the last available census on inland fisheries. He said the fishermen population in the country far exceeded 5 crore. It was important for policymakers and others to know the exact population of fishermen so that appropriate policies could be made. The second point related to cooperatives which were about 20,000, three years ago. He suggested that at least a hundred of these should be identified and synergistic action should be taken to empower the fishery cooperatives. NFDB, CIFRI and FISHCOPFED could identify a hundred cooperatives, provide them technology

and funding and carry out some model projects which could be replicated. Out of 20,000 cooperatives, 70 percent belong to the inland sector and out of a membership of 30-32 lakh, over 20 lakh are from this sector. For the first time there is a separate department of fisheries at the Centre. There are established research organisations and there should be greater networking and work at grassroot levels.

Pushpanjali Satapathy from Odisha referred to a point made by Pradip Chatterjee and said that in Odisha, in a 4800 ha reservoir, people had been given community fishing rights under the Forest Rights Act. Secondly, referring to Das's comments on the diversity of fishery, she said the Fishery Department was carrying out monoculture in the reservoir just like the Forest Department was doing in teak plantations. Fish diversity was going down. To move forward, inter-departmental cooperation and coordination between the Forest and Fishery Departments and Coast Guards was needed for the sector.

Responding to the point on pollution due to fish culture, BK Das said, the basic idea behind composite fish culture was to exploit diverse niches of the water column available. With reference to urea application, it depended on the amount of food that required cultivation. Citing *Vannamei* culture as an example he said, GoI had given guidelines to restrict to 60 pieces per square metre. Even in Bengal, they were stocking above 150 pieces which was far beyond the GoI guidelines resulting in issues of environmental pollution. There has to be consensus on how best to utilise the resources. With respect to Policy, he said, the centre prepared the policy and the state modified and used it. Gopal Krishna pointed out that when intensive or very intensive culture is opted for, effluents may be released into the environment post-treatment only according to the capacity of the environment. If overloaded, it can have an adverse impact. This decision needs to be based on the objectives and targets to be achieved. This was followed by a round of self-introduction by all participants.

## SESSION 1: TENURE SYSTEMS, INSTITUTIONS, AND GOVERNANCE

**Chair: Sebastian Mathew, Executive Director, ICSF Trust**

Speakers:

- **V.Sugunan, Assistant Director General(Retd), Indian Council of Agricultural Research(ICAR), New Delhi**
- **Nachiket Kelkar, Ph.D. Student, Academy of Conservation Science and Sustainability Studies, ATREE, Bengaluru**

### **V.Sugunan**

Sugunan opened his presentation stating that according to the FAO, SSF contribute almost half of global fish production. If catches that are destined for direct human consumption are discussed, the share is even higher, about two-thirds. Within the small-scale fisheries, inland segment is very dominant and the important fact is that very poor and vulnerable sections of the society are involved in small-scale fisheries.

What is SSF in the Indian context? In inland fisheries, there are rights, tenure arrangements and a range of activities, from capture fisheries in open waters to hyper-intensive aquaculture. Movement from traditional capture fisheries in rivers and estuaries towards commercial hyper-intensive aquaculture, cause an increase in the production and productivity to a large extent. It must be realised that simultaneously sustainability and equity go in the opposite direction. In capture fisheries, only natural stock is taken from rivers. Enhanced fisheries can be categorised somewhere between capture and culture fisheries: fish are stocked in reservoirs and wetlands to achieve a higher production. In aquaculture, there are different scales of intensity – from simple small-scale aquaculture to hyper-intensive aquaculture. Discussions on small-scale fisheries revolve around capture fisheries of rivers, enhanced fisheries of reservoirs and small-scale aquaculture. Intensive and hyper-intensive aquaculture is essential for an increase production; at the same time, it is necessary to explore all possibilities in the small-scale sector because it is a sensitive section where sensitive and vulnerable groups in the lowest income scales are involved.

Tenure may be defined as the system that facilitates people, particularly the rural poor, to gain access to natural resources and delineates groups that who have a legitimate right to use (a resource) and those who do not. Tenure defines and negotiates the relationships between people with regard to the utilisation of natural resources. It is very complex as it is necessary to have relationships with people while possessing tenure. If persons possessing tenures are ignored in the process of securing it, livelihoods will be impaired. Governance of tenure relates to how tenure rights are allocated, administered, and changed (legalised, transferred, etc.) and how those rights may be acquired to control resources or to protect already existing rights. Weak tenure governance leads to inadequate and insecure tenure rights to natural resources.

Tenure is still an emerging concept in fisheries unlike the land sector where *pattas* are well established. There may be customary and traditional tenure systems in fishing communities – for example, fishers are allowed to fish in a common water body which others also use. The concept is still in a very fluid state, which is why the interests of fishers are often ignored as other powerful sectors take over. Weak and ineffective governance of tenure constitutes a major obstacle to a sustainable, equitable and efficient use of natural resources. For many small-scale fishing communities, whether they are fishers or small-scale aquaculturists, insecure access to the resources they depend on is an impediment to livelihood and poverty eradication. If these issues are not addressed, sustainable livelihood and poverty eradication will remain a distant dream. The policy should take cognisance of this very prominently and it is necessary to vehemently argue a case to procure tenure rights.

Fishing communities also depend on access to other services such as land, housing, markets, financial resources, information, legal systems and social services such as education, health care and sanitation. To access water, the right over the adjoining land is needed as well, otherwise how will fishers enter the water? In the case of coastal, lakeshore or water front areas, land is also involved. Thus, it is necessary to have the right to land through which one can access water. The FAO says fisheries tenure cannot be viewed in isolation; it needs to be considered in connection with a broader land and livelihood context.

There are three major areas of inland small-scale fisheries. Open water fisheries, comprises pure capture fisheries: catching fish from lakes, estuaries and rivers; enhanced fisheries as in reservoirs where natural fish are not caught but fish can be stocked and caught after growing; and small-scale fisheries. Pure capture fisheries, may be basically described as common property resources with free access; in some cases, there is the *panidaar* system in which river stretches and reservoirs are auctioned to individuals who allocate fishing rights to private fishers; this, however, occurs in exceptional cases. In most cases across the country, waterbodies are common property with free access. In enhanced fisheries (reservoirs and *bheels*), common property, have controlled access. If a reservoir is given to a cooperative society, only members of that society can fish; sometimes reservoirs are auctioned to individuals, who dispense allocations or rights. SSF in one's own pond in the backyard or leased pond is basically an individual enterprise. Large open water fisheries are based on the same principle and are regarded as common property with free access.

In reservoirs and wetlands (enhanced fisheries), things are a little different as the main activity here is stocking fish and fingerlings into the water, as only then the catch is available and this depends on who gets the lease. Here all three systems are active. In many states, the department of fisheries have farms and they stock the reservoir and issue licences for fishing. There is a licence fee. The government stocks the fish and licenced fishers can fish. When cooperatives or SHGs are involved, the government gives the lease to the cooperative societies who do the stocking and only members of the society are allowed to fish. In some cases, the entire waterbody is leased out to a private individual who does the stocking and hires the fishers. This is a highly inequitable system because the contractor walks away with the profits. If one applies technology and stocks the fingerlings, all the

benefits of higher production go to the contractor and fishers only get wages; this should not be encouraged.

Small-scale aquaculture is largely an individual activity. Either individuals fish in their own ponds or may lease them. Sometimes, governments own small waterbodies where aquaculture can be carried out. But by and large, small-scale fish culture is an individual enterprise.

*Tenure issues in small-scale fisheries:* Many small-scale fishing communities suffer due to flawed tenure governance. They have insecure access to waterbodies, marketing and processing infrastructure. Fishers are often denied access to waterbodies due to ownership tussles between fisheries, irrigation, power, environment and forest departments. This is a major issue in many states. If a reservoir is owned by the power generation department, it will not allow the fisheries department to manage it properly. Similarly, reservoirs falling in forest areas are governed by the forest and environment department and there are several occasions, when it denies fishers their right to fish. In the process, tenure rights of the people suffer. Often, the Government's approach is maximising revenue instead of improving the productivity of waterbody for the benefit of the fishing communities.

The most important reason is that small-scale fishers are generally not empowered or organised into strong community organisation platforms. Their bargaining power remains weak when they are not well organised. If they don't have access to market or post-harvest facilities and their catch is more, they do not know what to do with their catch. Market intermediaries exploit fishers claiming fish are perishable commodities and as they have to lift the catch immediately and offer lower prices. There is a rather long market chain. A study by CIFRI has shown that in aquaculture, out of every rupee spent by the consumer, 30 % goes for marketing and 70% goes to the producer. In reservoirs and open water fisheries, it is the opposite with the producer getting only 30% and 70% going to markets. This is largely because fishermen have no access to marketing, post-harvest facilities and transport. Local merchants have trucks and can transport to nearby cities. When fishermen are not organised in market interventions they find it difficult to obtain a good price. These are also tenure issues that are emerging and being exploited by market intermediaries. Fishers' access to resource gets weakened when they do not get the ancillary facilities.

The challenges are as follows: i) lack of community platforms and ii) institutional arrangements. If there are no community platforms, the responsibility to enable their creation rests on civil society. Cooperatives are often dubbed as weak and the general consensus is that nothing can be done for them. The onus to empower and motivate them so that a community management platform is installed and to ensure that they get their tenure rights falls on society. There is a lack of enabling policy instruments to support small-scale fishers and fish farmers. This is evident in the draft policy which only talks about doubling farmers' income over the coming years. The question is whether the income mentioned is that of the farmer's or the contractor's or a third person's? If it is the farmer's income, then a community platform has to be built for small-scale farmers and fishers. The fishers' income is not

mentioned anywhere in the draft, it only talks of farmers' income. Fisher and farmer have not been distinguished in the policy. This is a flaw that needs urgent intervention and correction.

Who does the stocking? The community if empowered should be able to do the stock management. In reservoir fisheries, it should be recognised as a community effort. It is not a revenue generation activity. In many states except Rajasthan, the administrators would prefer to auction the reservoir every year. This means that the community gets only wages. If recognised as a community activity, the community platform will be able to intervene. Then, there is a co-management platform where the presence of a cooperative society, will ensure the presence of members of the fishing community and government representatives who will make sure that the policies on sustainability, equity, etc. are implemented. Such co-management platforms have worked in many places in West Bengal and the northern part of Kerala where cooperative societies are active; but these are still rare. They should be scaled up to a national-level with proper governance arrangements.

*Stocking and stock management:* State governments do not want to relinquish the responsibility of stocking and control fish farms and the fingerlings produced; they stock reservoirs and issue licences for fishing. Consequently, fishers and the community do not feel a sense of ownership; if a society or community takes over their management and catches fish and has marketing and processing support, more money will be generated. If a state government does not have sufficient wherewithal to stock all the reservoirs in the state, they should leave the stock management to the community and if the community is not capable, their capacity should be built. Community organisers should be empowered with all the decision-making, ensuring decentralisation.

*Shift in approach:* The objective of open water fisheries is to benefit fishers through increased productivity; not to maximise revenue from waterbodies. Often state government officers responsible for reservoirs do not get their promotions in time as they do not realise much by way of revenue whereas pond culture brings in money. Here, if the people are benefitted, their quality of life improves and that in itself is a benefit. A valuation of the social gains should also be done. The approach to development should change. Waterbodies are understocked not because of lack of money. If fingerlings are stocked, the returns are far more than the input. Communities are effective and do not mind spending a few rupees more in stocking provided they get the opportunity to obtain a larger catch and all the catch benefits are shared by its members. If it is equitable, then the stocking activity should be done by the community and not the government.

Stocking should be the responsibility of the community that manages a reservoir. Government need not stock it as it does not have the wherewithal to stock all reservoirs/ open waterbodies in the country which is why most of them are understocked and production is low. There should be at least 1 million tonnes of fish from open waterbodies; we get less than 10%. If all communities want to stock, then a demand for fish seed will be created in the country which will be met by the fish seed industry. The role of government agencies should be limited to

facilitate/ empower/ demonstrate; or provide incentives in the form of initial seed money/revolving funds/ or oft loan for stocking, marketing, etc. This is not reflected in the policy. The policy should explicitly take a community angle so that the community owns the resource. While they cannot own the water, communities should be given proper ownership of fish wealth.

The policy must move from a revenue generation approach to a development approach; there should be a shift from enforcement (control/punitive) to a top-down participatory approach which is usual for stocking fish while licensing prevents farmers and communities from feeling ownership. Restrictions in catching sites should be participatory. The closed season and other bans in the marine sector coming from the fishing community with fishers and boat owners themselves suggesting it; but in the inland sector it is still a top-down approach. There should also be a shift from a sectarian to an integrated resource management approach since different departments as owners of waterbodies clash over ownership. Creating an enabling environment for post-harvest will also empower people to produce more.

In capture fisheries, free access to fish in rivers, estuaries and lakes is given to people. But there will always be some regulations as one cannot include more people than the capacity of the system. Regulations are required to control overcapacity, overfishing and juvenile catch, etc. Free access with no control is not good for society and should be stopped. When communities are allowed to fish, they should be encouraged to follow regulations. The policy of auctioning river stretches to private individuals should be discouraged. Fishers' access should be conditional to following government policies on the conservation of the environment and biodiversity; restrictions on biodiversity and the environment should be observed. Fishers' right to access, their duties to the environment need to be recognised. When FAO and others talk about access, they describe it as a right and responsibility at the same time. The fishing community should be motivated to follow responsible fishing and aquaculture practices.

Small-scale aquaculture is an individual activity and at a comparative disadvantage to its intensive aquaculture counterparts who have all the modern infrastructure of post-harvest storage, value addition and access to market. In contrast small-scale fish farmers do not have access to information, processing facilities and market infrastructure, and are, therefore, exploited. They are deprived of benefits such as concessional power tariff, insurance and tax benefits, support price and other incentives enjoyed by their agricultural counterparts. While fisheries and aquaculture is considered a part of agriculture, many benefits available to agriculturists are not available to aquaculture. GDP contribution is high from small-scale aquaculture but they are ignored when benefits are meted out. Small fish farmers need a strong policy level support to protect their interests.

To conclude, the National Policy in Inland Fisheries should affirm the primary ownership of fisheries (fishing rights) to the communities. This could be traditional fisher communities, local communities, and rehabilitated communities – as each waterbody has its own

beneficiary system. Sometimes translocated families are ousted and given fishing rights. Sometimes only the local community is allowed and at others only members of a society. Tenure governance of fisheries should be transferred to the state departments of fisheries because they have the requisite knowledge and expertise to manage the waterbodies. However, it is not given to them as the revenue, forest or irrigation department want to discharge the function. The tenure period is also important. When given to a society or an individual, it should be for a longer period. If the tenure is short, people will fish irresponsibly. Seed production infrastructure, market links, processing and value addition etc should be developed with a value-chain approach. In India, there is a tendency to push some production systems without thinking of the marketing and value-chain. An example is the shark catfish (*pangasius*) culture which started in a big way: people started producing large amounts, the market crashed and there was no way to sell the fish. But the fillet made from the same fish was imported from other countries and sold at lower prices. Hence, it is necessary to keep the value-chain for excess production in mind. Lease terms and private partnership should be formulated without losing sight of the primary interest of fishers. When a waterbody is given to an individual, there should be a clause, as in Assam, that 40% of the catch will go to fishermen. Such clauses are important as increased productivity benefits should be enjoyed by all fishers and not just one contractor.

### **Nachiket Kelkar**

Kelkar's focus was on the two questions. (i) How do tenure systems help in sustainable use and environmental conservation of different waterbodies? (ii) What is the scope for adaptive management in existing tenure systems, in response to ecological, economic, and socio-political change in fisheries?

There are mainly four broad categories of ownership: the first is private ownership where the focus is on profit maximisation, whether through leases or individual ownership. For cooperatives, it is distribution of benefits that is technically, at least, one of the main objectives. Community arrangements are not only with regard to issues of access and justice but also for reconciliation: how communities can relate to larger state structures that govern and monitor them and self-reliance. In open-access, the main focus is on survival and livelihoods. Thus, it may be seen that there are different priorities for different tenure systems. A person fishing in an open-access regime has very different conditions and threats to face as opposed to somebody who has a settled auction contract available through own ownership or cooperatives. Wherever it is state-regulated, it is balancing fishery revenues, social well-being, and environmental conservation. All these lead to complex and variable outcomes for both fisheries and biodiversity.

In case of flow regulations by large dams, capture fisheries suffer and these issues are faced by both fishers and biodiversity, and there are also environmental implications. There are problems where biodiversity affects fisheries in a negative way or *vice versa*. An example of the former are some species which are considered competitors or dangerous by fishers such as

crocodiles but are conserved for their biodiversity value. An example of the latter are endangered river dolphins which may get caught and killed by the use of some nets and gears. These are the kind of complications that exist by managing both together.

He cited some examples. An instance from Pakistan was of the Sindh state fishery licences which were provided by the then Prime Minister Benazir Bhutto. The aim was that the fishing community in Sindh, one of the most underdeveloped regions in that country, should have the power to access and gain rights to fishery. Individual licences to fish year-round were given for very small amounts. Sindh was also under a very feudal regime. Major mortality of river dolphins occurred when community rights were realised in this way. In Kerala, fisherfolk had called for culling of cormorants in the Kerala backwaters/ Vembanad fisheries a few years earlier as they were perceived as competitors. There were also conflicts with otters. Interestingly, in the Kochi area, there is farm-based and fishery-based tourism. Otters which were considered a problem earlier may now become important as people like to see them (as wildlife) near fish cage farms etc. These are complex changes that are witnessed on either side. There are some species that cannot live with fishing, for example, the Gharial crocodile – for which fishing is probably the primary threat even now, after extensive habitat loss. In contrast, the marsh crocodiles in Gujarat are allowed to persist in community-based enhanced fishponds. Villagers prefer having crocodiles there as it avoids theft of fish from ponds – a positive example of fisheries benefitting from competitors. Finally, he cited the example of the Irrawaddy dolphin near Satapada, Chilika. Chilika fishermen have a positive cooperative fishing relationship with this species. Individual plots are given to fishermen for box and stake nets. Apparently dolphins push fish into them, perhaps because it is easier for them to herd the fish there; but people believe that the dolphins help them fish. This begs the following conclusion: Could such mutually positive relations have existed if the present tenure system were not in place? Escalating tourism in Chilika has now resulted in some negative impacts on dolphins. These examples highlight the complexity of managing both fisheries and biodiversity.

Fisheries biology theory states that the CPUE (catch per unit effort) will not always be proportional to the stock available. This could be because of environmental pulsing – that is, even if the overall stock of fish goes down, the amount of unit effort that is invested, whether in terms of time or nets or distance, remains the same. So people might not perceive declines, while the actual stock is diminishing, referred to as hyperstability, where catches might be stable but overall stocks might be in decline. In the case of hyperdepletion, when less is caught but the actual stock keeps increasing, it is not ideal from an efficiency perspective. These are interesting aspects of fisheries management and also the realisation of benefits from the tenure system. Secondly, many legislations and policies in India often tend to assume (and they have probably good reason to do so) that what is traditional and customary is also ecologically good. This may not always be the case. An example is the issue of bycatch – catching of species that are not the main catch of fishing. River dolphins as bycatch occur in large mesh size nets, not in the new small mesh size nets – mosquito nets. There is data suggesting that dolphins die after getting entangled in large mesh size nets.

While mosquito nets affect juvenile catches and hence are not good, they do not negatively affect dolphins directly. Of course, in the long-term there might be changes in fish stocks etc. In a way, traditional practices might endanger the species further. With tenure secured, traditional practices continue and it is not necessary that fisheries management will also do well. This is why these are complex trade-offs: realisation of conservation priorities along with social justice. Based on what is prioritised, fishers may have to be prepared to lose a bit of both sometimes. There is also a need to explore if there synergies and how the best of both can be co-managed through education, outreach and capacity building.

## **Discussion**

Pradip Chatterjee said it was very important for the national policy to affirm tenure rights. No consent was taken from fishers when waterbodies were used for other purposes or encroached upon. Farmers were consulted but not fishers. Community-ownership does not necessarily mean cooperative-ownership. Cooperatives do not function in a proper way and most of them are built from top-down. Here too, tenure rights are very important. If tenure rights are vested with primary fishers or fishworkers, then cooperatives have to abide by cooperative rules and the interest of primary fishers. But often cooperatives take waterbodies on lease and give it to someone else to fish. At the time of the annual general body meeting, members are given a token amount. Secondly, why should there be a leasing system at all? Rights should be given to those living by the side of the waterbody. Even if the waterbody is to be leased or auctioned, it should be given only to fishers' cooperatives. In West Bengal, rights have been given to FPGs (Fish Production Groups). For fishers' livelihood – water is an inalienable right.

Sugunan, responding to Chatterjee agreed that the quality of cooperative societies was bad. But cooperatives were the only instrument that could be depended on now, as groups of people working together, either as SHGs, cooperatives or bodies by any name were organising themselves into viable groups. When corrupt practices seeped into them, problems arose. FAO talked about hiring NGOs to motivate them. If people were empowered, they would not allow cooperatives to be corrupt. An unempowered community would tolerate a corrupt society but once empowered, it would not. The policy should ensure that community bodies are empowered, motivated, and trained.

Sugunan agreed that a right that belonged to a community could not be leased out. If the policy recognised that fishery resources belonged to the community, then nobody else could avail of it and there would be no need for auctions, but the community had to be a proper one. Citing flat associations as examples that were recognised as legitimate bodies, Sugunan said by-laws of the community cooperative could become part of its constitutions and there could be dissent, leadership tussles, but it was all part of democracy. A decision needed to be taken preventing community-owned resources from being auctioned away. In reservoirs and lakes, the fish grew by themselves; it was an ecosystem service even if it was stocked. On the other hand, in aquaculture, it was a return on investment as investments were being made on seed, feed, lease etc.

Sebastian raised an issue that needed to be clarified at this point. He said some fishing communities were asking for the right to sand extraction from riverbeds or reclamation of commons for real estate. Such occupational rights could completely divert from fishing to commercial and environmentally destructive activities. Extraction of river sand was ecologically damaging to the riverine ecosystem and hence banned by the government. Such issues underlined the fact that responsibilities of fishers towards the environment also needed consideration, as much as their rights did.

Pradip said that regarding displacement from waterbodies, there were no rights over them. Like the *patta* on land, fishers needed *patta* on water. This way, when displaced from one place to another due to development, they could find equivalent livelihoods.

Sugunan responded that when people were displaced from their livelihood, there was no doubt that they should be compensated, but water was a resource not comparable to land since waterbodies had multiple users. Water was used for irrigation, hydroelectric power generation etc., and hence, ownership could not be claimed for one group alone. Fishers should demand right to fish, stock fish, grow fish and catch fish. If someone wants to change the configuration and convert the waterbody into land for real estate, that is something that affects them and should be challenged. But *patta* on water is too much to ask for.

BK Mishra said it was necessary to understand what a cooperative was. India was a mixed economy and in addition to the public and private sectors, the cooperative sector needed consideration as it was the balancing sector. A cooperative was a democratic institution; a collection of people registered under the government; a purely fishermen community. A fishery cooperative had a common objective with members involved in fishing or related activity, with by-laws and guidelines. There were problems in some states and fishermen were responsible for this. If principles of cooperation were followed, cooperatives would function as they were designed to. Cooperation was now an important subject and was taught at various levels. If fisheries wanted to emulate the dairy sector, they must make use of cooperatives. There were possibly 13 lakh (One lakh = 100,000) cooperatives and around 50% were bad or defunct. But they were registered and were government entities.

Both fisheries and cooperation are state subjects. There can be no questions on the formation of cooperatives; questions can be raised on their functioning. What they require is democratisation and professionalisation. Putting a professional at the helm of a cooperative will make it successful. Even if 10% of the cooperatives function properly, fishers can do wonders. .

Manas Roshan suggested that this was where the discussion could shift from theory to bring in the actual cooperatives in the room because the discussion here was between power capture and subversion of cooperatives and the good work that had been done on their capacity building.

Srinath Mondal, Chairman of the No. 4 Bheri Fishermen's Cooperative Society Limited of Kolkata Wetlands said in their cooperative, elections were held every five years along with

annual audits. Their turnover was over Rs 3 crores annually. They had some problems. The water from East Calcutta was treated and released, and remained in their ponds. There was siltation and it had caused reduction in production. There were six board members. There were five-six cooperatives registered with the government. All of them had elections every five years following the government system. The process was totally legal as per government specifications. Agreeing that not all cooperatives were bad, he said anyone was welcome to check their books at any time to see what the cash flow was like.

Mondal was asked about the period of lease. He said he had not spoken regarding lease as his cooperative did not get one. It had registered in 2003, paid some people and sub-leased it to someone in the state fishery corporation. At that time, the members of the cooperative had been unaware that fishery cooperatives could not be sub-leased. About INR 2 lakh had to be paid. In 2017 the cooperative was pressurised to pay the money – a sum of INR 27 lakh had to be paid to the state government. He said there was a project, but his cooperative was told that it was not paying lease to the government which it refuted, stating that it had paid up all the money by cheque and not cash. It was then stated that the government did not have any such records. The cooperative then asked how that was possible when it had been paying the lease since 2003. The government told the members that their cooperative would have to take the lease again and they had reapplied for it but had not got it so far.

Mondal said that his cooperative had participated in the lease process but had not known that it would have to pay a price more than the bid value until the bidding took place. The members were then told there would be a re-tender. The cooperative had copies of the payments it had made. He was then asked about the size of the waterbody and he said that it was 400 bighas with land and his cooperative had 247 members. Each member worked and received a 'mahina', which was a sum of INR 600.

He was also asked if they did any culture by getting fingerlings and growing them, to which he replied in the affirmative and said they were also involved in seeds and natural breeding in winter.

Ganesh Chandra explained that his cooperative was functioning well, marked by good record-keeping and the benefits were shared by all. He said it was very similar to the Assam cooperatives. Around 50% of its money went for lease and other expenses and the remaining 50% was shared.

A participant from Maharashtra felt that the lease should be via a cooperative society as savings were less and government society rules were good. They had been working since 2006. He said once registration was done, the role of the government should be over. He was of the view that if cooperatives were formed by rehabilitated groups they would get daily wages. Another participant said that from 2007-2014 a programme was organised by CIFRI in which different departments like the tribal and forest departments etc. worked together, in which the divisional commissioner was the convener. The tribal department gave fishers seed, fishing craft etc. CIFRI gave training. If this kind of training was given, then cooperatives would function properly. But if budget cuts occurred, it would affect them badly. He felt

cooperatives should be given importance in the upcoming policy. Right now, they were being given lease for five years which he thought was less and should be extended to ten years.

Ranjita from Assam said that from 13<sup>th</sup> of July this year, Assam had undergone floods. Almost 32 of its 33 districts were under water. Data revealed that 1, 79,000 ha crop area was damaged including fisheries; 54 lakh people were impacted and of these more than 1 lakh fishers and fish farmers were affected.

She said another representative from Assam, Barman, who was also present at the workshop, was widely acknowledged as the state ambassador of fisheries of the Assam. The area which he came from, Khopur Nalbhari area was completely under water. The authorities had advised the farmers that the embankments should be 1 metre higher than the latest flood level, but when the complete area was under water, how could the people be expected to survive? The farmers were approaching the state government and various authorities for support, but nobody had come forward to help them. The state government had announced insurance cover for other categories such as crop, livestock etc., but fisheries had not been included. Ranjita was from an NGO that had approached various governmental departments, NGOs and other organisations to support the fish farmers of Assam. Of these, some companies were helping through their CSR initiative. From the government sector, Gopal Krishna had given his consent to support farmers. She felt insurance coverage was imperative and was not part of the national policy and such natural calamities must be covered under it.

With reference to the suggestion for insurance, Ganesh Chandra said, earlier, the Commissioner of Fisheries, Assam, had made a group and had called all the insurance companies. When they were asked about their annual charges the commissioner had discovered that it exceeded the rate of seed and the insurance companies were not prepared to provide insurance for more than three months. This had happened in 2010.

BK Mishra said unfortunately, there was no crop insurance in India in the fishery sector, or it was available only at a very limited level. Accidental insurance for fishermen existed. FISHCOPFED was implementing the scheme. Earlier it had been involved in implementing group accidental insurance schemes for fishermen. Now the scheme has been combined with the Pradhan Mantri Suraksha Bima Yojana (PMSBY) for which the premium has been drastically lowered to INR 12, 50% of which was subsidised by the Centre and 50% by the state. Farmers, fish farmers, paid nothing. For north-eastern states, only 20% of the premium which was INR 2.20 per year, needed to be paid. This was only accidental insurance and also covered permanent disability. However, it was only for the fishermen community and not for the crop.

Sugunan intervened to say that the point regarding insurance was well taken. The benefits enjoyed by the agriculture sector were not available to fishermen. NFDB had tried several times, but no insurance companies were agreeable. While the government compensated for the loss suffered by the agriculture sector, it did not do the same for fisheries.

Another fisherman pointed out that a recent survey that had studied house damage, loss of livestock, crop loss had not bothered to look at the fisheries sector as it was not in the drought code.

Fishing in inland bodies was still a customary right, said a participant, but fishers could still be displaced on the grounds of conservation. For e.g. the Sundarbans came under the Forest Act and was a Ramsar site, a wildlife heritage sanctuary; a large number of fishermen were dependent on it for fisheries. Maybe a day would come when fishers would be denied entry on the grounds of conservation. Could fishing then be considered a legal right rather than a customary right?

Pradip said that in the Marine Fishing Policy, there was a clause that fisherpeoples' livelihood interests should be protected in protected areas. This clause should also be included in the National Policy for Inland Fisheries. Also, the security of the lease of pond-based fish farmers was very important. Once their lease agreement was over, they were thrown out, and the lease rent was doubled, tripled or quadrupled. There should be some regulation that if a fish farmer fulfilled all the conditions, in the next term, the lease rent could be increased reasonably but the fish farmer could not be evicted.

Sugunan said that the last point raised was very important because Marine Protected Areas (MPAs) were managed essentially by the Forest Department, so their concept of conservation was to make a big boundary so that nobody could enter. That was not applicable here because well before all the developments started, the subsistence fishers were present there. In forests, forest dwellers (*Girijans*) were allowed to collect firewood, and did not cut big trees or timber. Similarly, if people went fishing on a lower scale as was done by traditional fishers, it could not be viewed as a violation of MPA. The same premise applied to rivers. If it was a Protected Area, the Ministry of Environment, Forest and Climate Change (MOEFCC) thought totally barricading it and banning all entry amounted to conservation.

Sebastian concluded the session saying that livelihood protection subject to conservation and sustainable use needs to be accommodated within the policy so that there was compliance with the policy of conservation.

## **SESSION 2: FISHERIES LEGISLATION, POLICY IMPLEMENTATION AND THE ENVIRONMENT**

**Chair: V. Sugunan, Assistant Director General (Retd), Indian Council of Agricultural Research (ICAR), New Delhi**

- **Ganesh Chandra, Senior Scientist, Agriculture Extension and Training Cell, ICAR- Central Inland Fisheries Research Institute (CIFRI), Barrackpore, Kolkata**
- **P.S. Ananthan, Senior Scientist, Social Sciences Division, ICAR-Central Institute of Fisheries Education (CIFE)**

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### **Ganesh Chandra**

Ganesh Chandrabegan with an overview of the types of inland resources, their size (total area in hectares) and management method. He said India was the second largest fish producer of Inland fisheries after China. Inland fisheries in India comprised water resources like rivers, reservoirs, floodplain wetlands, lakes, derelict waterbodies and tanks. Most fishers lived in rural and remote areas, preferably adjoining waterbodies. Access rights of inland fishers to resources depended on the state fisheries law. In marine fisheries, waters beyond 12 nautical miles came under the central fisheries law. But here, fisheries come totally under state law. There were multiple users / ownership/ stakeholders as every waterbody had different owners. Reservoirs came under theirrigation department though fisheries rights were under the fisheries department. This system was practised everywhere except Bihar where all the waterbodies were under the fisheries department. The fishers were unorganised, and fisher cooperative societies in India had extremely weak governance systems.

Laws and regulations governing fisheries could be classed under pre- and post-Independence eras. In the pre- Independence Era, the most important law was from Bihar and began in 1567 during Emperor Akbar's reign. The 1793 law – the Zamindari Act – gave all the lands to zamindars (landowners). In Bihar, eastern UP, Odisha and Assam, zamindars leased out fishing rights to farmers, moneylenders and occasionally fishers, taking almost 70% of the catch. The Indian Fisheries Act, 1897 is reflected in every state's fishery law through which most of the convergence has taken place. The other laws listed here are from Madras, Hyderabad and Mysore. The Punjab Fisheries Act 1914 still continues in Punjab and Haryana and the province of Punjab in Pakistan. Most of the laws in the Indian Constitution have come from The Government of India Act, 1935.

Articles and Rules related to water and fisheries under the Constitution of India are Article 48(A) under 42<sup>nd</sup> Amendment incorporated during the Emergency in 1976 which states that the 'State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country'; here wildlife also includes fish. Another aspect falls in Article 48 and 51 under Fundamental Duties, which come under the Directive Principles of State Policy and is under the scope of states, and is not enforceable. Article 51A says that 'It shall be the duty of every citizen of India (g) to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures.'

While state law governs waterbodies in the states, Article 262 governs cases for transboundary rivers like the Narmada, Cauveri, Krishna, and Brahmaputra. It states: *Parliament may by law provide for the adjudication of any dispute or complaint with respect to the use, distribution or control of the waters of, or in, any inter-State river or river valley.*

Which is why there are boards for the Narmada, Cauveri and Brahmaputra; all boards exist as dispute resolution mechanisms. The second part of the article (Article 262 (2)) is also related to this and states: *Notwithstanding anything in this Constitution, Parliament may by law provide that neither the Supreme Court nor any other court shall exercise jurisdiction in respect of any such dispute or complaint as is referred to in clause (1).*

Article 246, Schedule 7 distributes responsibility to Centre, State and Concurrent list. No. 57 related to Fishing and fisheries beyond territorial waters (Marine Fisheries) is falls in the Central List. No. 21 regarding fisheries is in the State List. Sebastio had asked in an earlier session how the policy would guide the State law to change when the Indian Fisheries Act of 1897 has guided every fisheries Act. The first paragraph in every state law comes from this law. So if it is present in the Policy, it will guide the state law. The list of the State Inland Fisheries Legislation goes back to 1914 (Punjab Fisheries Act); in 1948, Uttar Pradesh was known as United Provinces and Madhya Pradesh was called the Central Provinces and their Acts date to that period; the case is the same for Chhattisgarh. West Bengal has its Marine fisheries Act and Inland Fisheries Act. Similarly, Karnataka has had an Inland Fishery Act since 1996, Kerala since 2010 and most recently, the Jammu and Kashmir Fisheries Act was promulgated in 2018 but this will be short lived as Jammu and Kashmir became a Union Territory (UT) on October 31<sup>st</sup>.

**Convergence of State Acts:** In every state law there are points that have come from the Indian Fisheries Act, 1897: *Control, regulation and ban on destructive Craft and Gear, Wanton killing of fish juveniles, fish brooders and other organisms shall be treated as cognisable offence, Mass killing of fish and associated fauna using poison, plant origin or synthetic, dynamite and so on shall be treated as a punishable act and Encroachment or reclamation of Rivers, Lakes and Wetlands, either for arable land or human habitation or any other purposes, which leads to colossal loss of aquatic resource and associated utility functions shall be deemed as a criminal act.*

Allocation of fishing rights in waterbodies of 1-300 ha (in some states up to 1000 ha) by the tri-level Panchayati Raj system. It is 1-50 ha in Bihar, in Assam it is 1-50 ha because the Panchayati Raj Institution (PRI) does not have rights in bheel fisheries. In Madhya Pradesh it is 1000 ha and goes to tri-level panchayats. The lease period is not less than 5 years. In Uttar Pradesh, the state is probably opting for a ten year lease.

In Madhya Pradesh, the Zilla Panchayat gives lease for 100-1000 ha. For 1-10ha, the lease is given by the gram panchayat, whereas for 10-100 ha, the lease is given by the janpat panchayat, for 100-1000 ha the powers to lease rest with the Zilla Panchayat, while for 1000-2000 ha the lease is given by the State Fisheries Department and for waterbodies >2000 ha, it is the Coop Federation that gives the lease..

Closed season or fishing holidays for 60 days exists in all states, in some states it extends to 75-90 days. Enforcement of size regulation on fish catch and application of mesh regulated gears so as to conserve the breeding population in sizeable number is included in every state law.

**Divergence of State Act:** *Different period of lease for ponds and tanks:* This was a question asked by many. In some states, it is still one year, in others it is three years and still others it goes up to a maximum of five years. In one state it is five years extendable to another five years.

*Rule on size of catch differs state-wise:* In some states, riverine fisheries are under the private leasing system: earlier Uttar Pradesh was known for this system. Upto 1990, it was the same in Bihar. In parts of Assam it still continues the Lakhimpur and Nalgaon districts.

*Ownership of waterbodies for fisheries:* Only in Bihar it is with Fisheries Department.

*Lease value fixation:* This will be discussed later by comparing three states – Assam, Madhya Pradesh and Bihar, moving from progressive to regressive systems. Assam law is one of the most reformed laws in India. Almost 25 times cases have gone to Supreme Court.

**Institutional Processes and Governance: Assam, Bihar, Uttar Pradesh, Madhya Pradesh, Chhattisgarh and Gujarat:** Ganesh Chandra discussed how tenure management was taking place in different states.

**Assam** – the floodplain, wetland and riverine fisheries are the two existing types of fisheries. Private fisheries (100 ha) also exist but were not discussed further; Government fisheries are classified as those proclaimed as fisheries and those not proclaimed as fisheries (open-access, free for traditional fishermen and fisheries cooperative societies), and deemed as sanctuaries or forests.

Under formation of ownership, control and transfer of fishing rights, the following controlling agencies have been recognised: Revenue Department, Department of Fisheries (Director of Fisheries), Assam Fisheries Development Cooperation, Department of Environment & Forest (divisional forest officer), Panchayat Department (gram pradhan). All these agencies are under open tender system, the criteria being the highest bidder among fishers, either individuals or cooperatives. No one else can get licence to access the system. The department of fisheries gives sustenance rights to fishers – living rights and not livelihood rights.

**Bihar:** There was a decree from Emperor Akbar's time when two water lords (panidaar) Mahesh Chand Bose and Sultan Ahmed got the lease on a stretch of the Ganga from Bhagalpur to Sultanganj. The right continued during the British era, through post-independence upto 1990. A documentary on Doordarshan on the Sultanganj-Bhagalpur *mathas uttej samiti* – fishworker committee – reveals how they fought really hard.. From 1990-2006 it was under open-access to traditional fishers. From 1773-1950, wetlands and tanks, (Bihar has a history of water lords or panidaars) panidars took 75% of the catch and 25% went to fishermen. In 2006, the Bihar Fisheries Jalkar Act came into existence and riverine and wetland fisheries were made totally open-access to traditional fishers, fishery cooperative societies and traditional fisher SHGs. The 2006 law was amended in 2010 and is

one of the most progressive laws. The ownership of waterbodies has gone to the Fisheries Department and no other department has authority over them.

Uttar Pradesh has one of the most regressive laws but most reforms have come through government orders (GOs), not as rules or Acts. They have clubbed wetlands, tanks and reservoirs as one and call them Jalashay (जलाशय) in Hindi. Earlier it was under the Irrigation Department which first gave the management right of 45 waterbodies to the Uttar Pradesh Fisheries Department, Uttar Pradesh Fisheries Development Corporation and Uttar Pradesh Cooperative Federation and they in turn leased it out to fishermen cooperative societies and others. The sharing arrangement was that 25% of the lease amount went to the irrigation department and 75% to the fisheries department.

Waterbodies in Uttar Pradesh are classified into seven classes as per a government order. Lease of a waterbody is allocated only in the first four classes. Classes 5-7 are open-access, mainly rivers. Class 1 and 2 may be considered most regressive as Fishermen cooperative societies and contractors can both bid for fishing rights in the waterbodies.

In the leasing system in Class 3-4 waterbodies, there are five cycles that begin with priority being given to Primary Fishery Cooperative Societies (PFCS) or Self-Help Groups (SHGs) registered in gram sabhas that fall within the geographic boundary of waterbodies. Lease is given to contractors.

In Madhya Pradesh, 2000 ha plus reservoir comes under Madhya Pradesh Fisheries Cooperative Federation, a government body and a federation of all cooperatives of Madhya Pradesh. Here Fishing in reservoirs is allowed only to members of fishermen cooperatives who were affected during the construction of the dam and reservoirs and whose houses come within 1 km area of impoundment. This may be considered a positive right, a progressive right. In 2000 ha plus area, fishing right is vested with members of cooperative societies. Leasing is a different matter. In the case of India's largest reservoir, Indira Sagar spread over 94000 ha, in three districts, the fishing right is with people in a P4 model (People, Public, Private, Partnership). Fishing in the reservoir is the sole right of members of cooperative societies (People). The Madhya Pradesh Fishermen Cooperative Federation is the nodal agency of fisheries of the reservoir (Public Authority). Lease is only for selling the harvested produce. Lease is given to the highest bidder on the basis of an open tender system (Private). Fishing right is always with fishermen. Stocking is to be done by the lessee. The lessee will collect the fish catch from members of the fishermen cooperative society and sell it on the condition that 10% of the catch must be sold in local markets (Private). There is also some restriction on catch, it was 15 kg/ha some years ago. The average area is 49000 ha. The lessee has to buy from the fisher at prices fixed by the government. Earlier it was INR 25 per kg and has now gone up to INR 52 per kg.

*Lease Value fixation in Assam:* The minimum lease value will be fixed at 15% of the gross revenue from the fishery, which will be calculated using a formula that assumes that cost of production is 50%. lessee's profit is 20%, managerial expenses are 15% and revenue given to

the government is 15%. The cost of production is really the sale price of fishermen. The price of fish is fixed on January 1<sup>st</sup>. The rate of fish is highest on 13<sup>th</sup> January every year because of Boghali Bihu (a harvest festival celebrated in Assam).

*Lease value fixation in Madhya Pradesh:* For Seasonal ponds (0-10 ha) it is INR 300/ ha, for Non- seasonal ponds (0-10 ha) it is INR 500/ ha; Above 10 ha it is INR 300/ ha (for seasonal) and it is INR 500 /ha (for non-seasonal). In the case of reservoirs with areas above 2000 ha, the lease is fixed based on the value of total allowable catch (TAC). If the total allowed catch per ha is 40 kg, the lease value will be fixed as INR26 each to the fishermen and the government, respectively. Thus, 26x40x49000 is the minimum lease value of Indra Sagar.

**Gujarat:** In all places, the lease value is calculated based on water area which changes month-wise and the formula for calculations also changes. Month-wise figures of the last six years are computed based on the formula which changes from September 1x to May 4x. The sum total of this is divided by 21 and the result is known as the effective water area. The base price for lease fixation is calculated on the water area estimated through this calculation. When Ganesh Chandra went through cases in the Gujarat High Court, he found several litigations related to this – most of the medium and small reservoirs were dry by January. If the average water area is 2000 ha, it dwindles to 300ha by January, leading to maximum litigations in court over this issue. Rann of Kutch and Sardar Sarovar are open-access. The base prices are such that they have not given any chance to fishermen to get the lease. They have fixed the rate in a way that one has to go and bid at least INR 10 more than the asking price. This lease system is for cooperatives.

**Bihar:** lease is only for primary fisheries cooperative societies or traditional fisher SHGs or fishermen. If the waterbody is in a particular block, then that lease will only go to a fisheries society in that block. Because of this, every year, subleasing occurs. This is one of the most regressive aspects of the fisheries cooperative societies in Bihar. The lease of one waterbody of 200 ha is given at INR 53,000 and is being subleased at 50 ha per person for INR1 lakh, 100 ha per person for INR2 lakh etc. So with an initial investment of INR 53,000, a lessee can earn up to INR 4 lakh through subleasing. The cooperative society subleases to fishers.

In the case of reservoirs in tribal areas, it is different. In Chhattisgarh the lease is given only to a tribal society.

**Human rights to fishers:** The human right to water is *sine qua non*, indispensable, for leading a life in human dignity. Water is considered the most important part of life for any person. Livelihood is the core of society-fisheries interaction. Right to livelihood is enshrined in India's Constitution. Several judgments from the Hon'ble Supreme Court have upheld this right. Right to Life has been broadened to cover livelihood through employment. Most states support the customary right of fishers, especially tribal fishers, to fish in open waterbodies.

Article 21 is a Fundamental Right. Anyone can move the Supreme Court or High Court under article 32 or 226 in case of its infringement.

The most important part of human rights is considering 'who is a fisherman'? In Assam, persons belonging to the scheduled castes (Maimal community in Barak Valley) engaged in any of the following professions: that the persons undertake fishing by themselves in a fishing group, that the persons directly undertake fish trade such as marketing of fresh fish, preserved fish, other preserved fish, fishing implements etc. and members of the fishermen cooperative societies undertaking fishing or fish trade etc. as indicated above.

The same definition is used in Bihar with one word added - trained fishers. Lease of ponds is allowed only to trained fishers. Kerala has given a new definition, 'The person engaged mainly in inland fishing activity for his livelihood including wife of fisherman engaged in selling fish and the widow of the fisherman'. In Madhya Pradesh, Uttar Pradesh, Uttarakhand etc., it is a caste-based definition - several castes who undertake fishing are marked as fishermen.

The preference to bid goes to primary fisheries cooperative societies in varying degrees in Assam, Haryana and Rajasthan. In terms of exclusivity, preference is given in Bihar, Madhya Pradesh, Gujarat, West Bengal, Uttar Pradesh (except in class 1,2 of water bodies), Kerala, Chhattisgarh and Odisha for primary fisheries cooperative societies. In West Bengal, it was clarified (by Pradip Chatterjee) that if the bid by PFCS fails, it is open to all.

**Benefit-Sharing arrangement in Assam:** Wetlands was explained on the basis of management regime as well as fishing practices and gear use. In the case of cooperative management, it is 50-50. In the case of individual management, it is 60-40. Assam has a practice called Katal. In the first harvest, it is 50-50. From the second harvest onwards, fishermen get a greater share (60-40).

Conservation Measures in state law are mainly taken from the Indian Fisheries Law.

**Constraints and Challenges:** There is competition for lease of waterbodies between fishermen and contractors (in Uttar Pradesh). Unequal power relation with other sectors in terms of socio-economic-political space is seen with even horticulture getting greater preference. Overfishing is a problem and maintaining sustainability is desperately required. Scattered distribution, a diverse management regime and weak governance are issues with the latter being the most critical, especially in case of cooperative societies. Lack of credit support is a problem and credit through Kisan credit cards has been initiated in Uttar Pradesh and Bihar. Weak or defunct cooperative societies are extensive. Lack of alternative livelihood during the closed season: the 60 days ban is a big challenge. Madhya Pradesh fisheries has come up with a good solution to address this issue: they are taking INR 2 per kg of catch and putting it in the bank and on 10<sup>th</sup> of July, at the start of the closure season, the money is put in fishermen's accounts. Access to higher education and basic healthcare is limited. Fishers are also facing a declining share in consumer rupee. Pollution, environmental degradation, climate change impacts and natural and human-induced disasters are also major challenges in this sector.

**Dr.P.S. Ananthan**

Ananthan highlighted some of the cross-cutting themes and focused on inferences that can be drawn from policy and legislation in the inland sector with some examples.

He began by recalling that K.K. Ghosh, while speaking on the Status of the Fisheries Sector in India (2005) had said: 'Fisheries is a Residual Activity in a Residual Land having Residual Water by Residual People.' This is the perception among people who are probably not here, regarding the state of fisheries and the people who depend on it. He said he was not sure to what extent it has changed now. While this is a general statement, it is more applicable to the case of inland fisheries and must be understood in this context.

He said minimal right to water for fisheries and aquaculture as against the residual status was mentioned by an earlier speaker. There are a couple of overarching themes which the policy has to certainly address and the present policy has to some extent addressed them though there are gaps. The minimal right to water for fisheries and aquaculture as against their residual status is one of the basic departures that any new policy in the present era should take into account; it is something which fishworkers should strive for and demand to ensure that it is incorporated. This will lead to a kind of regulated market that is fair and equitable in the long-term. Water has multiple competing and conflicting demands from several sectors. It is necessary to realise that it is a cross-sectoral issue that requires a cross-sectoral dialogue. That is the only solution. Fisheries being at the receiving end cannot come to the dictating end and can only force other users to come to the discussion table. If that is done, it would be a major departure from the norm.

There is multiple ownership and trusteeship. Lack of coordination and conflicting interests among them has led to the utilisation of less than half of nearly 6.1 million ha with potential for fisheries and aquaculture. It is necessary to accept multiple ownership as an inevitable evil and deal with it. One way is to make a distinction between ownership rights and management rights for fisheries development: transfer and vest lease rights with the department of fisheries. Ownership rights can be retained by the parental departments but management rights should be transferred to the fisheries department as it is the only technical agency with competency, capacity and mandate to develop them for fisheries.

Ananthan said it was time to overhaul the dichotomy of 'welfare-oriented' and 'revenue-oriented' management regimes in inland fisheries, with more appropriate 'development-oriented' models. The first two (or a mix of the two) are common, but 'development-oriented' models can combine both livelihood as well as resource-development components accounting for both resources and resource users, realising both development and livelihood potential. The welfare or revenue models are not helpful in the long run as they either ignore resources or resource users.

He also said dealing binaries (e.g. private contractors fishing versus preferential rights to tribal fishers) would limit the scope in improving inland fisheries development and governance. He indicated that fishers needed to be critical, but also accepting of the benefits of both systems in development-oriented models.

A few states have comprehensive leasing policies mostly governed by GOs and ad hoc rules. Citing the case of Rajasthan where the revenue model of leasing management is practiced, Ananthan said, that this is probably the only state where the waterbody is classified based on the revenue whereas most states have classifications based on area. The state has four categories from A to D wherein category A earns more than INR 5 lakh revenue per year. Accordingly, the leasing agencies vary. Where the revenue is more than INR 5 lakh, the fisheries department is the leasing agency whereas upto INR 5 lakh the leasing is done by the PRI.

CIFE have looked at five large reservoirs in Rajasthan ranging from 3000 to 10000 hectares in area. In the two largest reservoirs, Mahibajaj Sagar and Kadana backwater, the productivity was low, being an average of 3.1 and 17.5 kg per hectare. In Ranapratap Sagar and Beesalpur, the productivity was 129.4 and 53.2 kg, respectively, while it was almost 100 kg per ha in the Jaisamand reservoir.

Unless one knows about the waterbody, one may not be able to appreciate the reasons. The leases in Ranapratap Sagar and Beesalpur are based on auction and private contractors are leasing them whereas the other three, located in the tribal area in the Udaipur division, are given in preferential leasing to project-affected families.

Ironically, those leased to cooperatives had the lowest productivity while those leased to private contractors had the highest productivity. The lease value of Ranapratap Sagar is about INR 1 Crore every year whereas Mahibajaj Sagar carries a lease amount of INR 7 lakhs even though it is bigger than Ranapratap Sagar. These were not leased to fishermen cooperatives as there were no habitations in nearby areas. The contractors hire people from 'parties', usually from Odisha or Bihar who fish for three to six months and the catch is sent to the Delhi market. Jaisamand is a success story with productivity almost as high as the two private contractors. The society/ department have good officers who train people and provide handholding support. The success was also partly because Tilapia was dominant and the species was able to establish itself. In Mahibajaj Sagar, there was no stocking and hence, the catch was low. It also shows that when there is some handholding or facilitation, tribal fisher cooperatives can do wonders.

With respect to lease procedures and processes, many of them are varied, obscure, outdated and contradictory. Recollecting the Gujarat example, he said the process was similar in Maharashtra where the lease rent was fixed arbitrarily. Showing a table that gave the lease value for different waterbodies, he said, that if the waterbody was <20 ha, the value was INR 300 and it went up, accordingly; the amount was slightly higher than Gujarat. In the Dimbhe reservoir, the price was initially about INR 50,000. At one point a contractor bid (as there was no society) for INR 1.3 Lakh and after a year, he defaulted and left. When a society is formed, it has to lease it for INR 1.3 lakhs. In 2017, all of a sudden, the Maharashtra government transferred all reservoirs >1000 ha to the Maharashtra Fisheries Development Corporation which started leasing the waterbodies through auction. Many societies protested but nothing happened. They increased the reserve price from INR 50,000 to INR 7 lakh. When

questioned about the source of this number or if there was any scientific study or whether it was based on a committee discussion, one discovered that it was quite arbitrary. It was just an age old practice the corporation had followed. A productive waterbody with 20-30 years old fish stock and good production potential had the same lease rent or reserve price as a new waterbody with the least productivity. A sum of INR 7 lakh for a newly formed waterbody with a total catch that was probably less than the value of the lease. Fishers protested and went to the High Court. Some negotiations took place but even now they are being forced to pay INR 7 lakh. Three months ago, the Maharashtra government has come out with a new GO which confused things further and only when tendering starts will the process that will be followed, become known. It all looks progressive on paper because preference is given to societies. The leasing right is also given differently.

Another concern mentioned regarding reservoirs or open waterbodies is conflict / contestation between livelihood and the environment. Ananthan said that he knew of at least three such cases. The first was the Tawa Reservoir in Madhya Pradesh which was suddenly notified as a sanctuary. The fisher cooperative society, the Tawa Matsya Sangha which was one of the success stories till 2004 was pushed off its livelihood. Similarly a bird sanctuary was declared around the Jeyakwadi Reservoir region in Maharashtra. Here, some amount of traditional fishing still goes on; but it is largely out of bounds. Sundarbans in West Bengal is another well-known story. There appears to be no solution. But there are some pointers in the Forest Rights Act (FRA) which has provisions to give some kind of rights to traditional forest dwellers, overriding the Forest Act. It is time to relook / amend provisions in India's Wildlife Protection Act 1972, Indian Forest (Conservation) Act of 1980, and a host of other such legislations – to usher in Joint Inland Fisheries Management similar to Joint Forest Management (JFM) allowing fishing ( subsistence fishing or livelihood-based fishing) to be a permissible activity in the Protected Areas. He spoke about the tragic case in the Keoladeo bird sanctuary in Rajasthan where a 1100 ha waterbody which had 88 species in the late 1980s now has only 11 species because the African catfish has entered it through farming activities upstream of the river feeding into the waterbody, rapidly multiplying and completely wiping out the native fish biodiversity. When some species were still left, suggestions were made to the Director of the sanctuary that the African catfish could be removed by fishing so that the remaining biodiversity could be saved. He cited the Wild Life Protection Act (WLPA) saying that fishing was prohibited in that area and therefore it could not take place even to remove the exotic fish which had entered and damaged the environment!

In inland fisheries data inadequacy is highly constraining. The original policy which was submitted had a detailed paragraph mentioning this gap, but the draft policy now available has only a cursory mention of the issue. There should be an inland fishers census on a regular basis which should form the basis for a census of both the resources and resource-dependent users. Ananthan said that they had also done a review of the inland policies of the different states such as Tamil Nadu, Karnataka, Odisha, Gujarat, MP, HP etc.; and that the larger picture was the same though there were local variations.

Like the database, the inland policy should also take into account that the fisheries department now has a very skeletal (basic or minimal) staff. For example, Maharashtra underwent recruitment only two years ago after 1995. In Rajasthan the average age of the staff is 58. There is about 20-60 % vacancy. It is known that the government is not going to recruit more people, but they should evolve an institutional mechanism by which they can involve pluralistic groups of actors such as NGOs (non-government organisations) and CBOs (community-based organisations) and engage people like the matsya mitras as in Jharkand. There needs to be a refocus in research and development; very little work has been done in inland fisheries, and there are few socio-economic and governance studies. While there are some answers, many questions still remain.

Referring to the questions regarding central and state lists in earlier sessions, Ananthan said, what was being proposed at the centre was like an umbrella which would be overarching and general. The state capacities have to be strengthened so that they develop a more context-specific legislative framework. With reference to defining inland fishers, Ananthan said when they had helped the Bihar government in drafting their fishing policy about a decade ago, they had asked for basic data regarding the number of fishers; they were given a figure of 40 lakh which was the population of the Mallah community. But when discussions began the discovery was made that only 5 to 10% of them were involved in fishing now. Ananthan said this was a big question that the national platform needed to address – are we still going to stick with the age-old caste-based identification of traditional fishers? It is not going to work and nobody is going to buy that argument as now the occupations have become mobile. People from the traditional fishing communities are exiting and people from other communities or caste groups are entering the sector. Using the FAO definition is one starting point. Livelihood should be the focus rather than caste or any other criteria as the old parameters were not going to stand up to scrutiny. But unless the fisherfolk groups themselves address this issue, it will be very difficult to tackle it. Ananthan concluded his presentation showing a Pieter Brueghel sketch of a big fish eating a little fish, observing that in inland fisheries, the contractors were the big fish as they took the lion's share of the income.

**M.K. Das, Head and Principal Scientist, Fisheries Resources and Environmental Management, ICAR-Central Inland Fisheries Research Institute(CIFRI), Barrackpore, Kolkata**

Manas Kumar Das spoke on an aspect of fishery where environmental constraints played a vital role in enabling the environment for the sustained production of inland fisheries. He said the production potential of most of India's rich, important, diverse aquatic resources such as reservoirs, wetlands, rivers were not being achieved. Various constraints that have already been mentioned including instructional governance but a very important constituent of the habitat which has not yet been specifically discussed is the environment. All inland water resources are common property resources. They provide goods and services utilised by a large number of people and stakeholders which include provisioning, regulating, cultural

and supporting. They are all important and relevant. Common property resources are used effectively for own and societal benefits.

At this point in time, with a growing population which will soon be pretty sizeable, limited inland aquatic resources, multiple stakeholders, a growing demand for water and decreased water availability for fisheries is what is expected in future. The projection at present of the per capita water availability is 1545 m<sup>3</sup>/person/yr (2011 census). It is projected that by 2020, it will reach 1000 m<sup>3</sup>/person/yr which is really a water-scarce condition from the water-stressed condition today.

Rivers are among the most important areas for inland aquatic resources. Already, of 30 basins marked as global priority for the protection of aquatic biodiversity, nine are from India and these are the Ganga, Brahmaputra, Godavari, Krishna, Indus, Krishna, Mahanadi, Narmada, Pennar, Tapi and Cauvery. With the exception of the Brahmaputra basin, all others are marked as 'strongly affected' by flow fragmentation and regulation. Flow fragmentation refers to various barriers in the pathways of rivers, either in the form of barrages or dams. Regulation is when because of the dam, the water and flow is regulated.

In rivers, the sources of degradation are pollution, water abstraction for irrigation, altered flow due to damming, sand mining which alters habitat, siltation seen in most rivers results in diminishing habitat and climate change.

According to the Central Pollution Control Board (CPCB), 15% of the riverine length is severely polluted, 19% is moderately polluted and 66% is relatively clean in the major rivers in the country. The condition is such that in many of the river systems bathing is impossible, leave alone fishing. The major source of pollution in most rivers is sewage.

A result of siltation in rivers and wetlands is that spawning and nursing grounds of important fish are affected. This has led to a decline in their population. There is reduced water availability and the habitat potential of fish living in such waterbodies – wetlands and rivers – is diminishing. The depth in many rivers is close to the minimum depth of one metre. In wetlands, depth has greatly diminished due to siltation. There is proliferation of rooted macrophytes such as water hyacinth leading to swampification. The outcome has been increased (water) temperatures leading to stress in organisms.

Obstruction to fish movement due to dams is a problem. There are a huge number of dams in construction mode in our various river systems. At present, there are nearly 5100 large and medium dams and more than 500 in the pipeline. There are 135 dams on the tributaries of the Brahmaputra in Arunachal Pradesh and 330 dams coming up in Uttarakhand. All of them are not in the non-fishing zones. In the Alakananda and Bhagirathi, many dams are coming up in the fishing zone where Mahaseer and other fish are found. There is absolutely no regulation regarding pathways for fish movement. Vital ecosystem services including fisheries and biodiversity are being neglected through construction. A major decline of fish populations witnessed in rivers and wetlands can be expected. Hilsa and Mahseers are classical examples

of fish being affected. This is why we Hilsa populations have ceased to exist in the upper stretches of the River Ganga.

The Report of the Working Group on Fisheries and Aquaculture of the 12<sup>th</sup> Five Year Plan acknowledges that water abstraction for irrigation and power generation is perhaps (one of the) biggest problems of inland fisheries, causing reduced or no flow in the main channel to support fisheries and other riverine flora and fauna'. While realisation has dawned among planners, it has not been implemented at the ground level. There have been changes in river channel morphology because of reduced flow, erosion/siltation, water quality degradation, biodiversity changes, landfills, encroachments and salinity changes; in the Hooghly-Matla estuary salinity has gone down upto 130 km downstream due to release of (fresh) water. In Diamond Harbour, the salinity is 1 ppt. In the Prakasam Barrage on the Krishna estuary, the flow has reduced and as a result, downstream of the barrage, salinity is about 30 ppt. As a result, changes in fish fauna have occurred. Many saline species such as mullets are dominating the Prakasam barrage downstream, whereas in the (Bhagirathi) Hooghly, estuarine species have gone more downstream towards the Diamond Harbour. Factors such as reduced flow, thus, have an important impact on fishing communities.

Das then briefly presented a case study of the River Ganga. He said concerns over the deteriorating quality of the Ganga in the past several decades resulted in launching of the Ganga Action Plan (GAP I) in 1985. This was followed by Mission Clean Ganga in 2009 and the 'Namami Ganga' project in July 2014. The specific component of the plan was to restore and maintain the biological or ecological integrity of the national river. Partial improvement in river quality is seen but ecological integrity has not yet been restored.

Non-biological measures like chemical and physical water quality dominate to improve ecological integrity of the Ganges. Planners have always thought about the physico-chemical terms such as BOD (Biochemical Oxygen Demand) load for measuring water quality. The biotic components have got less priority. Chemical monitoring has failed to consider the ability of water resources to sustain desirable biological processes and appropriate levels of biological organisation. As a result, there has been deterioration in water quality, in rivers and wetlands.

Assessing the environmental flow of the river Ganga/other rivers to maintain its ecological integrity is a major challenge for scientists. It is important because the closer the decision-maker wants the aquatic system to be natural, the greater the volume of original flow would be required in the environmental flow regime. One of the major problems policymakers have with developing environmental flows in India is the lack of knowledge on how the various ecosystem components respond to changes of flow. Often, biologists are unable to provide answers and thus, in many cases, environmental flow calculations are very flawed. River flows for some rivers systems are set to achieve specific pre-defined goals. For example, during the Kumbh Mela in Allahabad, water was released so that pollution does not occur. How much water is released in the river may be based on pre-defined ecological, economic or social goals. The question is whether policymakers are thinking in this line or environmental

flow decisions are made arbitrarily? In other situations/countries, for specific irrigation purposes, flow is released from the dam. It is important to understand if the flow will be released for other biological purposes.

The National Wetland Atlas 2011 prepared by the Space Application Centre estimates that there are 56,000 wetlands with a total area of 15.3 million ha accounting for nearly 4.7% of the total geographical area of the country. Freshwater wetlands alone support about 20 % of the biodiversity in India. India has lost more than 38% of its wetlands in the last decade with the loss rate being as high as 88% in some districts. They provide valuable production services. Chilika Lake, Vembanad Lake, East Kolkata wetlands are known to be very important for nutritional and livelihood security. The same is true for all the wetlands in various parts of the country. These wetlands are gradually getting degraded due to pollution, macrophyte infestation caused by encroachment as was found in the case of the East Kolkata wetlands and because of water abstraction and climate change.

Institutional strategies in India regulate only selected wetlands such as (1) wetlands selected under the Ramsar Convention, (2) wetlands in ecologically-sensitive and important areas, (3) wetlands recognised as UNESCO World Heritage site, (4) high altitude wetlands (at or above an elevation of 2500 m with an area equal to or greater than five hectares), (5) wetland complexes below an elevation of 2500 m with an area equal to or greater than 500 ha and (6) any other wetland identified by the Wetlands Authority Rules, 2010. The crucial smaller wetlands in urban and rural areas which historically functioned as urban common property facilities with socio-ecological functions such as washing, drinking, fishery etc. are excluded. These urban wetland ecosystems have been transformed to protect lakes, parks, and mangrove forests that belong to the state, valued for public ecosystem services such as ground water recharge, recreation, and flood protection. They may be used for tourism or other purposes. The rights of people who historically used wetlands have gradually depleted. Many of the floods that occurred during recent times are attributed to the destruction of many of these wetlands. The urban poor living at subsistence levels, whose livelihood resilience, health and nutrition depended on access to provisioning ecosystem services of these wetlands, are affected. Thus, the existing national legislations on wetland regulation are inadequate to protect a majority of the wetlands in India. It is necessary for some measures to be taken.

Reservoirs are also affected by pollution, water abstraction, altered flow due to damming, siltation and climate change. Industrial development and urbanisation in the catchment of reservoirs has caused eco-degradation. Industrial effluents, thermal power plants, domestic water and siltation have degraded various reservoirs like Musi, Byramangala, Hussain Sagar, Tungabhadra, Rihand, Panchet, Hirakud Dam, Gorakhpur, Harangi, Bhavanisagar, Govindsagar, and Nizamsagar to name a few.

Rivers, reservoirs and their floodplains should be taken as a single ecological entity for implementation of any comprehensive environmental plan. A holistic assessment of the instream water needs of rivers involving all stakeholders is imperative for developing an effective conservation plan. Clear river health objectives synchronising water quality targets

and environmental flow requirements should be determined for policy implementation by governments and stakeholders. A common framework needs to be created for river basin areas that can be used towards implementing the integrated watershed management strategy for rivers starting from gram panchayats (village council) to the river-basin level in a unified manner; this is one of the aspects of the comprehensive Ganga action plan. Unison of political will of the central and state governments is needed to stringently implement the measures adopted in the plan. A mass movement involving all communities and ordinary people in implementing the ameliorative measures for the restoration of the ecological entity is urgently needed. Some of the recent assessments on climate variability in India predict increased incidence of flood, drought and tropical cyclones. Without additional mitigation, the global mean temperature is expected to increase by 3.7 to 4.8°C and sea level is predicted to rise by ~50 cm by 2100. This will result in increasing water stress. Under such a scenario, the multiple benefits that inland fisheries and aquaculture provide in terms of protein, food, livelihood security and poverty alleviation are threatened. The question is whether climate change really affects the habitat in which fish live. To sustain the benefits of fisheries and aquaculture, it is necessary to understand the specific alteration in the quality of inland aquatic habitats occurring over the years due to climate change.

Even with normal monsoons in 2016 and 2017, 34 and 18% area experienced deficit rainfall while 19 and 21% underwent excessive rainfall, respectively. All these affect the quality of water in which fish are being cultured or reared. Aquatic environment differs from terrestrial environment. The sector is threatened by various factors such as pollution runoff, land use transformation, competing aquatic resource uses and over-exploitation of resources. Climate change is expected to compound the effect.

Analysis of the monthly data of rainfall of the middle stretch of river Ganga split into three equal periods (Jan-April), (May-August) and (September-December) for a 30 year analysis, showed that total rainfall declined 7% in (May- Aug.) whereas it increased by 4% in the post-breeding period of fish. This has direct implications on recruitment and spawning. During the breeding period, spawning of the Indian major carps requires rainfall. Rainfall results in spreading of the floodplain waters. This is a cue for the breeding of Indian major carps. With decreased rainfall, spreading of the flood plain waters does not occur and they do not get the breeding cue for breeding migration and spawning. In the plains, too, the annual total rainfall (May-August) declined by 5% and increased by 5% in post monsoon months (Sept-Dec) at Dumdum in North 24 Parganas. Here there has been a negative impact on wild Indian major carp species. Similar patterns of rainfall distributions were observed at Alipur district of West Bengal during 1980-2009. The other trend has been an increase in the occurrence of extreme events like droughts and cyclones. When droughts occur, there is increase in temperature and reduced rain. In case of cyclones, salinity increases from 12 ppt to 23 ppt in coastal areas because of intense storm surges.

A positive impact of enhanced temperature and altered rainfall on spawning of Indian major carps is evident in aquaculture where there has been an advancement of the breeding period in the hatcheries of West Bengal, Orissa and Assam in the last two decades. It shows an

extended breeding period by 45-60 days with the breeding season extending from 110-120 to 160-170 days at present. Thus, there has been a positive impact.

The impact on river basins due to climate change needs to be assessed together with other environmental changes. Hydrological impacts of two most important drivers of change in the Ganga basin viz., development of reservoirs and barrages, can be felt within 10 years but the impact of climate change cannot be felt before 30 years. First, the climate change in our country must be viewed in the broader context within which a variety of other environmental changes are taking place at different temporal and spatial scales. Second, an understanding of the distinct characteristics of the social-ecological system in any particular region of the country is a prerequisite for development of a sound adaptation strategy. An effective and pragmatic approach is to find interfaces through which climate change adaptation activities are integrated with routine policies, measures and activities which are undertaken on a regular basis by the government and different stakeholders. Climate-Smart Sustainable Agriculture is agriculture that sustainably increases productivity, resilience (adaptation), reduces/removes greenhouse gases and enhances achievement of national food security and development goals. This is also true for fisheries. A multi-criteria analysis was adopted. The first step was to scout all the available technologies from literature, expert judgement, stakeholders, feedback, etc. The second was to identify potential technologies based on expert judgement. Third, to rank all the technologies based on technological, economic and environmental criteria; this was Ranking 1. The fourth step was to send this list to reviewers (~20) for their ranking and the fifth was to identify top ten technologies. Ranking 2 was to prioritise the top 10 technologies based on policy and socio-cultural criteria. The seventh step was to identify non-conventional, innovative and disruptive technologies and finally, to suggest big-ticket projects. In case of fisheries, 17 technologies were prioritised based on the initial ranking.

For prioritisation, the STEEP (Societal, Technological, Economical, Environmental and Political) methodology was followed which takes into account socio-cultural, technological, economic, environmental and policy factors. In the two-step prioritisation, Step 1 was technological, economic and environmental, and Step 2 was socio-cultural and policy. Under the technological criteria, the parameters taken into consideration were the impact on production, ease of implementation, mechanisation/compatible and readiness level of adoption of the technology. Under economic, enhanced income of farmers and economic feasibility were considered. Under environmental, energy efficiency/renewable energy, greenhouse gas mitigation and climate vulnerability/risk reduction were considered. The specific parameters were given weightage out of 100. There were many sub-sectors in which fisheries was a sub-sector. Weightage varied for different sub-sectors. A ranking sheet was prepared for fisheries.

Under the second step, socio-cultural and policy criteria were considered. Under Socio-cultural, Socio-cultural complexity and No-regret characteristics were included and under policy, institutional complexity, urgency and small-farmer friendly criteria were considered. No-regret means where even if the ranking of a technology is adopted or not, there is no regret as far as the technology is concerned. The weightage was equal for these criteria.

Ranking of technologies for the fishing sector was carried out. Eight technologies were selected. Final weightage for each factor was 35 for Technological, 25 for Economic, 15 for Environmental, 10 for Socio-cultural and 15 for Policy criteria. Final ranking was given taking 75% weightage for technological, economic and environmental parameters and 25% weightage for the socio-cultural and policy parameters. Technologies scouted by the GTWG (Global Technology Watch Group) Sustainable Agriculture group were validated in a workshop.

The top ten technologies in fisheries and aquaculture were found to be: Brackish water aquaculture, Periphyton-based carp culture, Cage culture fish, Fish-cum-paddy culture, Integrated-fish-livestock farming, Pen culture of fish, Waste water aquaculture and Drought tolerant fish culture.

## **Discussion**

Sebastio Rodrigues asked Manas Das about the ecological and biodiversity impact on the rivers and coast and also about the declaration of 111 rivers of India as national waterways. Das responded that this was recent, having come up in the Ganga Mission. Prior to this, barges used to ply in a regular manner, for e.g. in the Hooghly. But once the waterways come up, and boats start plying, then impacts could be studied. Till then, specific assessments regarding the possible impacts could not be made. A lot of other anthropogenic factors were affecting fisheries in these waterways. It would have an impact but the exact extent cannot be estimated.

Fishing will get impacted, said Pradip Chatterjee. Das responded that when barges ply once again, there will be an impact on fishing, they may get hit or nets may get cut. But these impacts can only be estimated once the navigational use begins.

Sugunan added that the waterways project started in Kerala ran into problems due to conflicts with fishers because of Chinese nets coming in the way. Some issues were being resolved, some were yet to be resolved. A participant (fisherman) from Kerala said the deepening of the waterways had resulted in the destruction of the fish habitat.

Another question related to lease amounts, was addressed by Ganesh Chandra, who said in Maharashtra there was no rationality in fixing lease amounts. Ananthan added that it was well known that the criteria used in different states for fixing lease rent were arbitrary and not based on any scientific assessment of production potential. Now, in Maharashtra this case had come up only because the cooperative society had persisted in demanding the right to fish; in many reservoirs, where cooperatives were not organised, they had lost out and contractors had taken over. In Maharashtra, most waterbodies were leased to cooperative societies on paper but in reality they were with the contractors. People based in Bombay controlled almost 50-60 reservoirs in the Vidharba and Marathwada region and invested crores of rupees on them. They stocked prawn seeds and engaged fishers who used trap fishery and caught prawns which were then brought to Bombay for exports. Commercial-scale prawn farming was

taking place in Maharashtra but local people were working only as wage labourers. In Gujarat too there were similar cases. It was a question of how to bell the cat.

Nachiket Kelkar asked Das about the climate change trends in subsequent years after the data was shown. Das said the data shown was from the ongoing National Initiative on Climate Resilient Agriculture (NICRA) project wherever extreme events had occurred and which had been investigated. For example, a case study was conducted after the Aila cyclone in North 24 Parganas. In 2009 when there was a drought, a case study had been carried out. People were still working on the various extreme climate events in various places which were part of the ongoing NICRA project.

Debasis suggested that canal fisheries in the Sundarbans which was influenced by twice-a-day tides and was extremely important for local food security should also be included in the policy. Das said most of these canals came under the irrigation department. Sugunan stated that there were also natural canals where fishing was carried out and should be included in the policy. Debasis mentioned that aquaculture was being carried out on both sides of the canal apart from agriculture. In addition, there were very wide canals that almost looked like rivers and here fine meshed (mosquito) nets were being used. Plastics from houses nearby reached the seas through the canals. Siltation was also a problem.

Chatterjee said there was nothing in the policy against intensive prawn aquaculture and should be taken up since this was also an aquaculture policy. Sugunan agreed that the environmental impact of intensive prawn culture should be highlighted in the policy. Pradip also asked about a move in West Bengal where small check dams were made to collect water and the Chief Minister had suggested culturing of fish wherever waters were available but the whole matter was mired in inter-departmental conflict. Chandra explained that he was referring to Assam in his presentation and that the policy differed in each place. In response to a question by Subhasis Dey on the dredging that would be required as part of the inland waterways scheme, Das said the impact of dredging on fish habitat and fisheries has not been studied much. Sugunan concurred and suggested that perhaps some research needs to be carried out on it by some university or institution.

There was another question on the formation of cooperatives by a group of 22 villages living near a lake (jheel) where an NGO working for their unity had started engaging in fishing. Chandra said it was a case of open-access, where only fishermen could fish with no restrictions. The Uttar Pradesh Government had a list of waterbodies and this was outside that list. For those waterbodies outside the list, the Uttar Pradesh government had not created any lease system. Till the government registered the waterbody and handed it to the fisheries department, it would remain open-access. Customary rights to the waterbody could be retained and a community-based fisheries management system could be implemented.

A participant from West Bengal cited a problem regarding a waterbody that was initially fed by waters from the Padma. Now because of siltation, the channel was blocked and some houses had been built in the area. The natural flow was hampered and fisheries were affected. Historically, thousands of fishermen used to live there and their livelihood security had been

impacted. Sugunan said this was a common type of conflict where riverbeds were encroached. It had been included in the policy. Specific issues had to be addressed through local conflict-resolving mechanisms.

Pushpanjali Satapathy asked a question regarding community forest rights of fisheries. Ananthan explained that in the case of Chilika, the forest service officer was in charge of Chilika Development Authority for a long time and took a lot of initiative. He involved the communities and the livelihood of fishers was one of the priorities. This was the only state where the Director of Fisheries was a forest service officer and there was good coordination. This was also the reason why in Odisha, marine fisheries got a bad deal because its rights had not been taken into account. In Gahirmatha and Rushikulya, bans were imposed under the Wildlife Protection Act without taking livelihood issues of small-scale fishers into consideration. Dr Sugunan concluded the session with an overview of the topics that were discussed by various speakers during Session 2.

## **DAY 2: 7<sup>th</sup> September 2019**

### **SESSION 3: SOCIO-ECONOMIC DEVELOPMENT, GENDER ISSUES AND ROLE OF COOPERATIVES**

**Chair:** Puspanjali Satpathy, Vasundhara, Odisha

**Speakers:**

- **B.K. Mishra, Managing Director, The National Federation of Fishers Cooperatives Ltd. (FISHCOPFED), New Delhi**
- **Bibha Kumari, Guest Faculty, P.G. Department of Zoology, Patna University, Patna**
- **Aparna Roy, Scientist, Agriculture Extension and Training Cell, ICAR-Central Inland Fisheries Research Institute (CIFRI), Barrackpore, Kolkata**

**B.K. Mishra: 'Socio-Economic development, gender issues and role of Cooperatives?'**

B.K. Mishra began by saying that the inland fisheries sector was much neglected despite producing more than the marine sector. There were a lot of programmes in inland fisheries, and the focus should be on the socio-economic development of fishers, identification of gender issues and the role of cooperatives.

Pointing out that there were some negative notions about cooperatives, Mishra said cooperatives were an important sector of the Indian economy. It was one of the three major sectors of the economy which comprised public, private and cooperative. The cooperative sector was formed by a collection of like-minded people with a common objective. Those who were dealing with fishery, catching fish by caste or profession, had the sole objective of staying involved in fish production or fish marketing. Their life was dedicated to fisheries. So they formed a cooperative which is governed by the Cooperatives Act. Each state has a State Cooperative Societies Act, headed by the Registrar of Cooperative Societies. The state decides how a cooperative should be formed and the minimum members it should have. There are by-laws in which everything is specified. The Cooperatives Act varies from state to state. FISHCOPFED (the National Federation for Fishers Cooperatives) is governed by the Multi-state Co-operatives Act. A Cooperative is a legal identity. Cooperatives have a federal structure. There is the National Federation of Fishers Cooperatives Ltd., State Federations, Regional Federations and District Federations. This is a tiered structure that varies from state to state. For example, while Andhra Pradesh has a three-tiered structure, while it is a single-tiered in Arunachal Pradesh. Odisha has a four-tiered structure whereas West Bengal has a three-tiered structure.

Data from three years ago indicate that there are 21 state fishery cooperative federations with a total business turnover of over Rs. 1530 crores. Their immediate total fund requirement is around Rs. 500 crores. This does not take into account district or primary level cooperatives.

Giving a brief overview of state cooperatives, Mishra said these were registered under the prevalent State Cooperative Act and members were generally ignorant about the prevalent rules, their rights and responsibilities. They needed guidance, training and funds, and were prevalent among the poorest of the poor (SC/ST). They needed technical support for infrastructure, inputs and up-to-date technology. Other areas of support included managerial, policy (leasing of water bodies etc.), financial and parity with agriculture. Cooperatives were weak because of these reasons. All cooperatives were good. Sometimes they did not get the right type of guidance or training and their needs should be fulfilled. Democratisation and professionalisation were essential for effective functioning.

Constraints of PFCS members include the following: Lack of knowledge and skill required for fishing/ fish farming, limited fisheries inputs and implements resulting in adoption of traditional aquaculture methods resulting in low productivity, non-availability of variety and size of fish seed at culture-friendly price, poor access to fish medicines and probiotics in rural areas, insufficient soil and water testing facilities, limited training and exposure visits., lack of institutional / financial support, mainly extensive fish cultivation and exploitation by unnecessary intermediaries in auctions, transportation and marketing.

The National Federation of Fishers Cooperatives Ltd., popularly known as FISHCOPFED, is an apex fisheries cooperative federation in India which represents all fishery cooperative organisations/ societies in the country. It has members in all district and state federations; all primary societies are district and state federation members. They represent around 20,000 cooperatives and have about 13 lakh members, growing every year. It was established in 1980 as an All India Federation of Fishermen Cooperatives under the Maharashtra Government and was renamed the National Federation of Fishermen's Cooperatives Ltd. in 1981. It is registered under the Multi-State Co-operative Societies Act 1984, amended to the 2004 Multi-state Co-operative Societies Act. The federations are registered by the Central Registrar of Cooperative Societies, Government of India. As registered bodies, they can work in any state. FISHCOPFED is the global spokesman for the Indian Fisheries Cooperative Movement. Its role is to promote and develop the fishery cooperative movement in India, to educate, guide and assist fishers in their efforts to build up and expand the fishery cooperative sector and serve as an exponent of the cooperative opinion in accordance with cooperative principles. They are under the administrative control of the newly formed Ministry of Fisheries, Animal Husbandry and Dairying. They have a board with elected officials from six zones of the country – north, north-east, east, west, central and south. There are two board directors, either from the state or district federations. There are 12 directors, two from the Ministry of Fisheries, one from NCDC (National Cooperative Development Corporation). The Managing Director (MD) is the member secretary. The board meets once every quarter to take broad policy decisions. It is implemented through the MD. Their role is work on anything related to fisheries for the benefit of fishery cooperative members. They also take care of other fish farmers and work to develop and attract more and more fishermen to the cooperative fold as cooperatives are best for development as long as they follow certain business ethics, principles and philosophy of cooperation.

FISHCOPFED has unit offices in Telangana (Hyderabad), Tamil Nadu (Chennai), Bihar (Patna), Maharashtra; project office in Rajasthan, regional offices at Assam (Guwahati), Chattisgarh (Raipur), Odisha and proposed offices at Uttar Pradesh, Manipur, Madhya Pradesh and Karnataka. This is to network and promote fishery cooperatives. Their activities can be distinguished in three parts. The first is *Developmental or Promotional* including training programmes and knowledge-exchange exposure, seminars and workshops, demonstration programmes facilitating transfer of technology, agriculture/trade fairs/fish melas/Swachhata Abhiyan, mobile advisory services etc. *Welfare activities* include implementation schemes like the Pradhan Mantri Fasal Bima Yojana (PMFBY); the Pradhan Mantri Jeevan Jyoti Bima Yojana PMJJBY has already been introduced in some states; other schemes include Special Contingency Policy (SCP), Distress Alert Transmitter (DAT) etc. *Commercial activities* include aquarium and ornamental fish promotion, reservoir fisheries, fish marketing, popularisation of scientific aquaculture inputs and extension.

They provide insurance cover for fishermen between 18 and 70 years under PMFBY. A premium of INR 12 is paid by the central and state government on a 50-50 basis. For north-eastern and hill states, the premium is borne on an 80:20 basis between the central and state

government. In the case of UTs, 100% premium is borne by the central government. Insurance cover comprises INR 2 Lakh for permanent disability and death. It covers about 30 lakh fishermen but statistics say there are 1.4 crore fishermen in the country. It appears that state governments were not sending data in the right format with all the relevant information; it is the responsibility of the state government to identify beneficiaries. On the settlement of claim, the money is desposited directly into the beneficiary account through DBT – Direct Benefit Transfer.

The highest number covered so far was in 2015-16 and declined after that because the data did not arrive from the states. Data needs to be collected and sent, is stored at multiple levels and has to be authenticated. The premium being less, a mass movement is needed so that a large number of fishers can be covered, as there is no dearth of funds and the central government has agreed to cover any number of fishers who are carrying out fishing by caste and profession and are in the 18-70 years age group. Membership in a cooperative is not required. Mishra said coverage was taking place in most states and there was a problem only in West Bengal and Andhra Pradesh. In West Bengal, the data was not received on time. In Andhra Pradesh, there were four or five schemes. They settle 400 claims every year. Various hazards such as tsunami and cyclones were covered under this scheme.

The insurance coverage was highest in Odisha with about 11 lakh fishermen being covered. In UP, while the fisher population was supposed to be 1.5 crore, the data for all the fishers was not being provided. Bihar was earlier covering three lakh fishers, but its data was only reflecting one lakh. Participants pointed out that in Kerala and Andhra Pradesh fishers were getting INR 5 lakh as against the INR 2 lakh from this policy. Mishra said that it was due to convergence of schemes and the premium was high.

FISHCOPFED also carries out capacity building and training. Thrust projects include National Fish Seed Farm, Bhimpur, Rajasthan, Aqua One Centres (AOCs) which are like agricultural clinics to serve as platforms for all types of services to fish growers and fish farmers. It markets CIFAX, a sanitizer used to prevent Epizootic Ulcerative Syndrome (EUS) developed by ICAR scientists and other inputs. It also supplies the Distress Alert Transmitter (DAT) for marine fishers. It is also involved in the all-India marketing of dry fish; it markets ornamental fish in Delhi and NCR and is active in the Swachh Bharat Abhiyan announced by the Prime Minister. It was involved in cleaning fish markets to ensure hygiene and adherence to HACCP (Hazard Analysis and Critical Control Point) standards. Mishra said he had been told that they had to organise FPOs (farmer producer organisations) as they would be more competitive and the government wanted to support more of them, as they would provide more dynamism.

The National Fish Seed Farm in Rajasthan spread over 110 ha was leased to FISHCOPFED for 10 years in the year 2017-18. They had tie-ups with MPEDA and would be producing Tilapia and other seeds. They had a 50- person capacity training centre in Odisha that was well located and well furnished. They wanted to develop it as a national centre for fishery cooperative management as there was no national-level training institute for fishery cooperatives.

FISHCOPFED Vision 2020 has a number of plans. It has planned mobile fish retail marketing in the national capital and in at least ten state capitals. Mishra said that unlike online buying where fish could not be seen, this was not the case in mobile fish retail marketing. It also planned to set up at least six ice plants-cum-cold storages. FISHCOPFED was looking for allocation of space in the Ghazipur wholesale fish market to make it to at par with international standards for at least ten waterbodies for demonstration-cum production units in the country. It planned to establish at least six training centres i.e. one in each zone of the country. It hoped to set up six more carp hatcheries as there was a requirement for quality seeds. It also aimed at computerising 20,000 PFCs for faster information sharing and data generation and was planning to have mobile advisory services for the fisher community. It wanted to provide training to atleast 20,000 fishers every year on skill development. It also planned to enhance the marketing of trout fish in the country and promote marketing of dry and ornamental fish. FISHCOPFED hoped to open two more unit offices and 100 aqua centres in the states. It wanted to cover at least 5 million active fishers in the country under the PMSBY and at least 2 million fishers under PMJJBY. It planned to organise workshops on capacity building for fisheries cooperatives and update their database every two years and aimed to become the best service delivery system in the fisheries sector in India. Mishra concluded with a list of fund requirements. He said FISHCOPFED wanted to propagate organising fisheries cooperatives wherever possible or at least strengthen those in existence. Being the custodians of the fishery cooperatives movement, it was prepared to share its knowledge and provide guidance.

Pushpanjali Satapathy appreciated the presentation and wanted to know the number of women in their cooperatives as a figure was not mentioned in the presentation. Mishra said it was not in the presentation as there was no bias. In fisheries profession, 50% of the work was done by fisherwomen. Production was done by fishermen while marketing and processing was carried out by women. They had conducted a study and found that about 36% were members of cooperatives and COPFED was trying to push it up to 50-50. There were some exclusive women's fishery cooperatives in some states. Mishra said there was no gender bias; in fact the name of the organisation had been changed from Fishermen's Cooperatives to Fisher Cooperatives.

### **Bibha Kumari**

Bibha Kumari has been studying women fish workers of Patna since 2008. In 11 years she has been getting different kinds of information and the scene is changing, daily. Patna is the capital of Bihar and the second largest city of North India, after Kolkata. They have the largest riverine area in India indicating that there should be a very large fisher community living there. Their only profession is fish capture but in recent times, fish culture has also started in a few areas. In Patna itself, one of the major rivers is the Ganga and others include Gandak, Son, and Punpun. Different types of ponds were present inside and outside the town. There were other local waterbodies – the *jalakshetra* – wetland areas inside the town, now totally constructed over in the new town area. There were also larger basin areas. Fishing Communities live along the river and other floodplain areas.

The status of the fishing community around Patna is mostly 'Below poverty line' (BPL). Resident: Some are urban dwellers; most are living in the surrounding area/village. Literacy rate is 39% but slowly increasing. By profession, men catch fish and wholesale marketing is carried out totally by them; retail/trading is carried out by both men and women. Fishery worker/labourers are men. In Bihar, all rivers are government property. Stretches are licenced for fishing and auctioned. Many leases are taken by members from the non-fishing community who hire fishers to do the fishing. People from the fishing community do other work such as running grocery shops, agriculture, labour in construction sites etc. Now sand removal is also seen in the Ganga because of a lack of water, though earlier it was only in rivers such as Son.

Before 1990-2000, men were engaged in capturing fish and selling them onsite and women actually worked in post-harvesting. In Bihar, there was no fish processing beyond refrigeration. Women have very low literacy. In spite of low/no literacy, they were confident and experts in negotiations during the sale and purchase of fish. They were efficient in calculations of the amounts involved and in the fraction of weight of fish. This was the skill of women.

Patna has expanded and includes nearby small towns which have formed the heart of the city. Urbanisation and high population have driven up the demand for fish which is escalating everyday. In the market area, authorised market places are limited and situated in the main town; there is no market formation in new areas. Street markets exist on footpaths, colonies and wherever it is possible to fulfil consumer demand. Fish vendors are mostly men. Participation of women is seen but is lower than men. Migration of the fisher community from village and surrounding areas towards the urban area and inward migration has been observed. Men from villages come into the city, purchase fish from the wholesale market and sell on the streets and return. Women stay in the village as they have domestic responsibilities; also, travelling from the village to the city is difficult.

Her research indicated a decline in the presence of women in fish markets as compared to men. Showing a picture in Patliputra where fish was sold on the footpath, She explained that a footpath was an unauthorised area for selling fish. Every day, the vendors brought their equipment and set up stalls for three hours in the morning and two in the evening. When there was a government encroachment drive, these markets were removed; men and women hastily move all their belongings from that location. These were sudden unannounced disturbances to the fish trade.

Reasons for women moving out from marketing/trade are many. Literacy is low (high numbers are uneducated) and people have gone mostly to primary school. Lack of knowledge and awareness as well as difficult transportation and communication facilities are compelling women to stay away from markets. Inter-market competition is high as fish sellers increase according to population and demand, but there is no increase in the market area. There is gender-based discrimination. Because inter-market competition is high, women do not try to compete in the market. Men can fight but women do not. Safety and security is of concern.

The overall condition of the market is poor due to lack of space and facilities even in the main market and so women are not comfortable there. Poor hygienic conditions are also a problem.

Their survey showed that over 45% of those involved in fish markets were uneducated and about 20% had primary education. Graduates and those who had completed intermediate were working in the wholesale market. Some men were matriculates. In the case of women, about 10% had primary education and the rest were uneducated. Fish vendors were mostly illiterate. Those in the wholesale markets and transport sector may be educated upto the secondary level.

There was no adequate marketplace according to the population of consumers. Footpath and open fish markets were more (unauthorised and uncertain). There was no proper water supply even in the main fish market. Drainage and sanitation conditions were bad and waterlogging was a problem. Toilet facilities in the main market built by the government were inadequate. Infrastructure and transport facilities were poor.

Due to gender-based discrimination and dominance, most of the space in the main fish market of Patna was occupied by men. Till 2014, 45 % were women; their numbers have now declined to 20%. Men were more efficient in succeeding at inter-marketing competition, whereas participation of women was declining in the fish market. They were compelled to sell on streets or foot paths (unauthorised and uncertain). In spite of women's skill in negotiation, calm (not rude or aggressive), compromising attitude and maintenance of hygiene to the extent possible, their presence was on a daily decline.

There was a fifteen-day ban on selling fish in Patna after the presence of formalin was detected in fish. Initially, there was a complete ban for four days. After that, only live fish and some local fish were permitted to be sold. This resulted in extensive unemployment leading to fishermen going to work for daily wages. Women were in distress as they were dependent on the daily income for their livelihood. While men were able to find employment in construction sites, women did not get work quickly. There was a lack of awareness about formalin. They only knew that it was used to preserve fish, they were not aware of its harmful impact on the fish or themselves. A section of the media flashed the news that they had presented in a seminar about the presence of formalin in fish. The government in turn questioned the fisheries department regarding the presence of formalin, which denied it. Samples were sent to Kolkata and Kochi and high content of formalin was found. A ban for 15 days was put in place. Subsequently, cooperative societies requested the government to lift the ban with the assurance that no formalin would be used in the preservation of fish thereafter; the government subsequently withdrew the ban.

Traditionally, sand was mined from the Son River. Now sand mining was taking place in the Ganga. Queries elicited information that the people extracting sand from the river were from the fishing community. With no fish being captured, women do not have fish to sell and hence there is migration from the riverine area. Male dominance is not the only reason for women keeping away from the market. The responsibility of earning for the family traditionally rests upon men. Hence, men work to earn money and women stay away. This is

why men migrate and the fisher community is moving towards the town and the fish selling activity is slowly being taken away from the women. The inability to generate their own incomes and possess their own funds has reduced the confidence-levels and skills of women and will lead to loss of skills which in turn will increase poverty levels.

To promote and protect the role of women, action needs to be taken. Improving literacy is important as it will increase awareness. Intensive programmes are needed for literacy as literacy status plays a vital role in efficient participation and operational skills in all income generating activities. Training programmes must be conducted during times that are convenient for women. Regular arrangements for skill development programmes (personal as well as professional) are necessary. There is a need to strengthen the 'extension service system and human resource development' to improve the knowledge, skill, attitude and practice of women to sustain the fish market. An adequate, safe, secure and hygienic market place for everyone, men and women, must be assured as it is a matter of food. There must be regular awareness programmes for government strategies and policy: people should know about food safety and security policies, the fish ban due to formalin should not have happened. There is a need to fill the gap between government policy and regulation and the relevant fisher communities. When training programmes are run by ICAR institutes, Bibha's query regarding the number of women participants always elicits a 'nil' answer'. She felt that those organising such programmes should find out why women are not attending their programmes and suggested that they should go to areas where women sell fish and discover what is relevant. Ensuring the engagement of men in the fish culture programme would open up spaces once again for women. If some favourable strategies and implementation steps were adopted, women would definitely be back again in their own role, she concluded.

### **Aparna Roy: Socio-economic and gender issues in inland open waters**

She presented her experiences on socio-economics and gender issues in inland open water fisheries. Inland capture fisheries are dynamic in nature. Inland fisheries sector in India largely comes under small-scale fisheries and can be defined as an easy, individual or household (family) venture, entailing low levels of technology.

Inland fishers, usually socio-economically backward, belong to the traditional fishers' community. Small crafts, mainly non-motorised boats, and simple gear are used to harvest fish or other aquatic organisms. Fishers largely work as share-workers or operate individually. They do have traditional knowledge of fishing activities, biodiversity, resources which has been passed from generation to generation. Activities of small-scale fisheries usually comprise supplying fish and fishery products to local and domestic markets as well as for subsistence consumption.

Inland fisheries and aquaculture have grown in absolute terms, but their potential is yet to be realised. The vast and varied resources are still un-utilised and under-utilised. Public and private investments in inland fisheries are minimal. Very limited policies and schemes are available and those available need to be streamlined to take research and development (R&D) benefits to farmers and fishers.

Rivers are the richest in fish genetic resources and are the habitat of precious fish germplasm, supporting vast biodiversity. Multi-species, multi-gear fish assemblage in these rivers support the livelihood of fishers. Challenges in riverine fisheries are: ownership issues due to 'common pool' nature of rivers, pollution due to heavy industrialisation, plastic and other pollution. In some places the fishing ban period is implemented; overfishing is a major problem. While traditional methods are used, destructive fishing gears and methods including electro-fishing and pesticides are used for fish harvesting.

To understand the decline in fish production in the Hooghly River by looking at the perception of the fisher community, a study was carried out with about 300 fishermen. Use of destructive fishing gear was a major reason for decline in fisheries, the second reason was erratic rainfall/climatic hazards/variation, the third was due to huge catch of fish in the lower part of the Hooghly /sea mouth, the fourth was industrial pollution in the river, fifth was siltation and the last was fresh water discharge/influx into the river.

Floodplain wetlands (locally known as bheel/baor/haor/ox-bow/chaor) are highly productive and are breeding and nursery grounds for a number of aquatic organisms including commercially important fish. Challenges include - ownership issues due to 'common pool', conflict with agriculture sector, encroachment, loss of river connectivity, poor governance and institutional arrangements, lack of awareness in the use of sustainable fish production and water abstraction.

The current needs in the case of wetlands include conservation and restoration of ecological integrity of important natural wetlands, promotion of culture-based fisheries in identified floodplains, wetlands and ensuring easy availability of quality seed for stocking them. For this, pen culture can be used as it is economically viable and technologically feasible for in-situ raising of desired stocking material. Fishers perceive some problems in opting for pen culture. A study indicated that a lack of awareness of this technology was the first reason for this deterrence. Ownership-issue among fishermen was another as they were not residing by the side of the wetland. Management of the pen in wetlands was a third reason, while conflict with the agricultural and technological feasibility and risk of theft/poaching were cited as other reasons. Reservoirs are a major resource where fisheries enhancement tools can be applied for the production of animal protein and can combat poverty and malnutrition in the country.

Challenges in reservoir fisheries include ownership issues due to 'common pool'. Displaced people live beside the reservoir and social conflict is very high. Reservoir areas are large and villages are scattered which means that implementation of any type of fish enhancement technique is not easy. The needs in the case of reservoir fisheries include transfer of management rights of all man-made waterbodies to the state fisheries departments, promotion of cage culture in reservoirs and optimisation of production through culture-based fisheries.

Derelict waters/canals are often exploited for small-scale fisheries, but the harvest from these canals is not taken into account in inland fisheries production. The major issue is socio-political dynamics in developing fisheries in these waterbodies.

Another major issue is climate change. Drought, shift in seasons (prolonged dry spell/ erratic rainfall), flood and extreme climatic events lead to decline in fish production, breeding failure, increased abundance, introduction of invasive species, siltation etc. Aparna Roy spoke about a study they had conducted to quantify the climate-induced stress in wetland fisheries through a stakeholder-driven approach. They found that water stress, wetland accretion, aquatic weed proliferation, loss of wetland connectivity, periodic recruitment failure of small indigenous fish (SIFs) and the occurrence of ulcer-like diseases were the major climate-related factors for stress in the wetlands of West Bengal.

They had carried out a study on the socio-economic condition of inland fishers in 2013 and had found that the overall literacy rate was 70% among inland fishers, less than the national literacy rate. About 52% of their income was from fishing, while the rest was from labour, agriculture, business and other sources.

The problems faced by fishers included declining fish production from open water resources, extinction of certain indigenous fish species, no assured income and a lack of alternative income in lean seasons; climate variability, lack of government support because most of the inland open water fishers were not identified by the state department were listed as other problems. There has been no recent fisheries census and the data from the 2013 livestock census stated that 48 million inland fisheries existed. There was a lack of credit facilities and insurance policies and fishers faced loss of livelihood and nutritional security.

Assessing how threats in inland fisheries affected society, Aparna said that decrease in fish production led to reduction in income and unemployment which led to migration resulting in social tension as the women were often left behind. This led to insecure livelihoods and low standards of living. To overcome these issues, fish stock enhancement in rivers/wetlands/reservoirs needed to be done. Action to combat declining fish biodiversity, awareness campaigns and policy intervention to control juvenile fishing, were essential. Use of plastics, pesticides and pollutants needed regulation. Organised marketing channels to reduce price spread, income diversification and off-season income generation for fishermen could also address this issue as could policy interventions to settle governance issues and linkages.

The way forward primarily required human resource development. Training and capacity building of the fishers and line department officials based on their needs was a must. Institutional finance (credit and insurance) and financial inclusion of fishers and fisherwomen were also required. The fishers needed to be recognised as legitimate stakeholders in rivers, wetlands and reservoirs. Minimal right to water for fisheries must be recognised considering that it was a primary food production sector. There must be regulation of exotic aquatic species. Even in Sundarbans, people are fonder of Shark catfish (*Pangasius*) and Tilapia than small indigenous fish; this is not good for native fish biodiversity. Fisheries cooperatives need to be strengthened by ensuring good governance, business, accountability and values.

Aparna then looked at gender dimensions in small-scale fisheries. The term 'Gender role', refers to activities performed by men and women in different situations and times, within the

boundary of different cultures, classes, castes, ethnic groups etc. The roles of men and women are shaped by various forces such as social, cultural, economic, environmental, religious and political and vary from one socio-cultural system to another. In the inland open water fisheries context, Moser's Triple role framework helps researchers to understand the division of time and labour within the household and community. Moser introduces the idea of women's 'triple role', i.e., their three-fold role in production, reproduction (household work and childcare), and community affairs.

An overview of women's involvement in SSF in Sundarbans shows that in creeks and canals, estuaries, mangrove swamps, rice fields and water channels, women are harvesting fish by using traditional nets and gears. They are more interested in exploiting resources that are easy to collect and cook. They also harvest crabs and sell fish. Men on the other hand are more interested in harvesting fish of economic importance.

Roles of women involve the following.

*Production role of women:* women are involved in collecting fish seed, catching fish, processing and marketing fish catch, making and repairing nets and gears, helping in the preparation of fishing trips, and unloading and sorting fish which contribute significantly to household incomes and local economies.

*Reproduction role of women:* women are involved in various types of productive and reproductive activities but have very less time of their own. As a result, they are vulnerable to malnutrition which coupled with long working hours, causes sociological, economic and health implications for women. The community roles comprise their degree of participation in community events which help them to gain knowledge and information, leading them towards empowerment. This role also involves taking on extension activities and skill development programmes.

Over the years, general roles of women have changed. Data from the Sundarbans shows that in the last 20 years, indirect and direct roles have changed. Earlier there was no involvement in running petty businesses or shops or financial management. Now women have better roles in financial management and family welfare as well as fish seed collection and fish drying.

A study of the seven islands in Sundarbans on women's access and control over resources showed that women had limited access to housing, extension services, gear, craft and formal capital resources. In family labour, external labour and land, they have mostly limited or no access. But they have absolute access and control of about 40% of the simple farm tools and gear. Only 5% have absolute control over craft as they do not go for fishing in big rivers. The low score in family labour is because even their sons do not listen to them. When they are children, they go with their mothers but when they grow up, they stop accompanying them.

Pradip interjected that in one of the islands, there was a big community of women fishers. Aparna said that they were not part of this study.

She finally compared the various sections in the SSF Guidelines with the National Inland Fisheries and Aquaculture Policy(NIFAP) and their impact on Sundarbans. She said the fourth section in the SSF Guidelines related to gender and equity. However, there were many barriers related to SSF in the Sundarbans.

In terms of tenure rights (5.3-5.4 of SSF Guidelines), issues related to Sundarbans are as follows: women have limited access or control over fisheries resources such as lease for ponds, waterbodies etc. Women do not have membership in fishermen cooperative societies or trader's associations. Regarding access to fishing resources (6.4), women have limited or no access to fishing-craft. The situation is the same with regard to their access to markets and marketing resources(7.6); markets and auction-yards are dominated by men. Women suffer from financial exclusion and have less decision-making power in handling finance. As far as recognition of opportunities for fisheries labour (6.5),gender-sensitive policies/programmes are not available.The situation with regard to recognisingthe role of women and ensure amenities and services appropriate for women (7.2) is as follows: women labour engaged in fisheries are often paid less wages than men. Women labour in a fisher household is often not accounted for. Education, healthand social development (6.2) is also dismal: access to general education is restricted for girl children from fishermen families, as they have to look after their siblings when their mothers go out for fishing or other related activities. Advanced healthcare facilities are not available in the Indian Sundarbans. The situation with regard to food security(5.2 & 5.8) is just as bad; women are caregiversfor their families and ensure food for all members of the family. Fisher women sometimes have to sacrifice their own meal for other members/relatives. The occupational health and safety(6.12) is of equal concern;tidal flows, saline water, crocodile or tiger attack are the main occupational health hazards for both men and women fishers. As far as violence and access to justice(6.9) is concerned, violence and abuse sometimes restricts womenfolk in Sundarbans from exercising their occupational and social rights. Policy coherence (10.1) is also a matter of concern as there is no policy for gender equity and equality particularly for the fisher-women of Sundarban. Capacity development (11.7,12.1) is also an issue for disquiet as training programmes organised for small-scale fisheries management or development are inadequate; most of the time, fisher women are not targeted for extension training or skill enhancement and are often unable to participate in such programmesdue to social barriers. In the case of research and monitoring(11.1,11.10,13.3),there is lack of gender-disaggregated data in the SSF sector of the Indian Sundarbans. There is a lack of documentation of the role of women in fisheries and less priority is given to gender-sensitive research.

Aparna showed a fishbone diagram that highlighted the problems along with their roots. Low education, poor health and sanitation, environmental vulnerability, domestic problems and nutritional insecurity were some of the practical gender problems. Strategic gender problems included low social participation, low media exposure, socio-cultural restrictions, low institutional and market linkages, lack of decision-making power, lack of control over assets and resources and an absence of vocational training.Strategies for meeting practical gender needs included mass literacycampaigns, health awareness campaigns, gender sensitive

technologies, training for occupational health hazards, sanitation and toilets and infrastructural facility for health education. Strategies to meet strategic gender needs included financial inclusion and support, institutional linkages, SHGs/Mahila Mandals, use of women extension workers to motivate women in inland fisheries, gender-sensitive training, nutritional and livelihood security and ensuring a component for women in the development policy.

In their roles as researchers, she concluded that they could carry out valuation studies of women's livelihood roles, develop an entrepreneurial model for fisherwomen and build an integrated livelihood and gender security model with gender perspective for the inland fisheries sector. Pushpanjali complimented all the presenters in the session suggesting that all questions could be asked together.

## **Discussion**

Ranjita addressed Aparna and said in Assam, demarcation of river-floodplain boundaries was one of the basic challenges in the management of bheel fisheries. She was associated directly with some of the bheel fisheries management programmes and had seen women participants staying out of the sector. Even participatory approaches brought forth only a few women. With reference to riverine challenges, discussions with fishermen (no women are seen in the main stretch of river) indicate that there is no Early Warning System (EWS) especially for sudden floods. This needs to be added in the policy.

Sugunan wanted to know whether other associations registered under various acts got the same benefits as cooperative societies. Mishra clarified that cooperatives were public type of institutions. Now only government and private players were allowed. If government cooperatives were allowed, it would be much better because in reservoirs and such places, it was government cooperatives that took leases. Were those kinds of reforms possible? It was agreed that cooperatives were the best instrument, but everyone knew that they were not functioning properly. Mishra said some cooperatives were good while some went wrong because of corruption and lack of awareness regarding their rights; but were there any efforts by FISHCOPFED to correct their weaknesses and make them function properly?

Nalini Kant from Jharkhand said cooperatives were not new entities. In the pre-independence era, it had brought people together to work collectively. The meaning of cooperative had changed with time and it had become like a bazaar outlet similar to those that functioned in the agriculture sector, selling to multinationals. He wanted to know from Mishra where he placed the cooperative sector in this set up since he had had a long innings in the sector. He emphasised that the relationship between cooperatives and farmers/fishers needed scrutiny. The Bill Gates foundation has promoted pulses (dal) crops to reduce malnutrition but the farmer producer groups actually served like agents. In Bihar, Acute Encephalitis Syndrome (AES) was prevalent and was seen mainly among poor Dalit and Mallah children. Two reasons cited for its presence were acute malnutrition and litchi consumption. There was a new High Court order regarding making Patna a smart city and conducting a study on the impact of fishermen in the new town planning. He made another

point related to the production of makhana (fox nut) and said more than 60 % of the production was done by women who worked in highly unhygienic conditions.

Ananthan addressed Mishra and said that in his presentation, he had highlighted that in 2017, FISHCOPFED had leased out the national seed farm. He referred to FISHCOPFED's vision document and said its decision to lease out a national seed farm and its plan to set up a number of other seed farms was beyond its mandate and as a result it was not focusing on reviving and strengthening cooperatives.

Nalini Nayak questioned Mishra about improving fish markets. She wanted to know how many fish markets had been improved. She said they had found that the minute a fish market was improved, the men took over. Was it not possible to make some positive discrimination and say that when they put money to improve a fish market, its main thrust would be to target women. She said they had surveyed several fish markets in the country which had been improved with this money but had been taken over by men, including male merchants who were not in fisheries, earlier. She suggested that to be gender conscious, some positive gender discrimination was necessary with some very detailed regulations for the way this money would be utilised even for cooperatives.

Dilip Kumar said that to develop bheel fisheries, resources had to be developed, the ecosystem restored and rehabilitated; but the first step was demarcation and then prevention of encroachment by agriculture. He was in complete agreement with Ananthan regarding cooperatives. The policy document stated that the first and foremost step was to strengthen cooperative institutions and not to take seed farms and seed production. He pointed out that FISHCOPFED did not have the technical capability or human resources to support such activity.

Pradip told Mishra said they had some experience with cooperatives and had not seen them operating to fulfil their mission. Either they were not running at all or were functioning for some other purpose. The membership data and other things were largely meaningless to the rank and file of fishers or fishworkers. How could cooperatives function meaningfully for the purpose they were meant for? His second question was about the accident insurance policy. Earlier, he said they were getting accident insurance policy from the department. Now it was being tacked with PMJJSY. Even a common person could get PMJJSY. By fastening it with PMJJSY, fishers were allowed to have only one scheme per person which meant curtailment of their rights. Referring to Bibha's statement regarding the woes of fish vendors in Patna, he wanted to know if there was any resistance there, and how were they coping with these problems. He pointed out that her presentation made no mention about the rights of the fish vendor even though the Street Vendors Rights Act was in existence.

Sebastian Mathew said it was very interesting to see the huge interest in cooperatives. Mentioning that ICSF worked in several countries, he said that worldwide there appeared to be a trust-deficit with cooperatives; this powerful institution was seen as being captured by local elites and was rife with corruption. There were many such examples in South America. In the Indian context, it would be interesting to review cooperatives and see if they could also

reflect the inland fisheries policy and legislation and marine fisheries state-wise as there had been a gamut of changes since the Cooperatives Act was enacted. He wanted to know if it was possible to enhance the state of cooperatives, set up a kind of grievance mechanism for them, make institutional changes to make them more transparent and equitable, so that they could also take up new responsibilities such as resource management.

Mishra responded to all the questions together. He said there were two types of Cooperatives Acts; one was the Multi-State Society Act by the Government of India under which FISHCOPFED had been registered. All state and district federations were governed by the state Act. The NGOs were governed by the Societies Act. Cooperatives had their by-laws and were audited. If there was some lapse, the Registrar of Cooperative Societies looked into it. FISHCOPFED only played a guiding role and spread the message of cooperation. Democratisation and professionalisation were important. Dairy cooperatives provided the best model in the country, while fisheries cooperatives had some inherent weaknesses. For instance its members were illiterate and were not organised etc. Things were changing. Parity was discussed although there was no parity. Data was not updated. Some states were doing well, e.g. the Matsyafed in Kerala and Maharashtra. Major problems existed in Bihar and UP.

With reference to the PPP mode, he said that they were now recommending CPP (Cooperative –Private partnership) mode. FISHCOPFED had done a study and had found that there were 30,000 fishery cooperatives. FISHCOPFED was an implementing agency; not a funding agency. Government had given it only one scheme to implement.

Regarding FPOs from Bihar, Mishra said, they had dismantled district federations and made them taluk-level societies. FPOs had not been created in the fisheries sector. With reference to the fish markets, he said it had taken place through the NFDB funds. FISHCOPFED only participated in the Swachata Abhiyan in cleaning them. He added that when the fish market was done, the federation would ensure that it was HACCP-compliant and would also keep the gender issues raised here, in mind. FISHCOPFED supported the hatchery construction in Rajasthan on government land.

Aparna responding to some questions agreed with the need for demarcation during the development of bheel fisheries. She said the total waterspread area in the monsoon should be demarcated (referred to as jalkar area in Bihar and West Bengal) by the government. She said there was some mismatch between fisheries and irrigation activities with wetlands being encroached upon. Since open waters were diverse and unorganised, the gender-disaggregated data was not yet available. In the Brahmaputra, low participation of women was witnessed. In Bengal, there were women members in cooperative societies but they were widows of members and mostly such women did not have any engagement in the cooperative and bheel fisheries activities. Inland open water programmes were targeted for conservation and development, and participation in such cases was low. But in aquaculture, especially in ornamental fisheries development, there was huge participation as it was an organised sector and could also be done in backward areas. Hence, need-based training was essential. Also,

training should be done according to their free time. Women extension workers could be organised to encourage women.

Bibha said with reference to resistance to displacement, often led to intra-family conflict. Another problem was inter-market competition. To achieve space occupation – men occupy. There was intra-societal conflict. Women tried to compromise saying ‘oh you go occupy this space otherwise my space will be taken by others. When asked, women would say that they were not leaving the place as their husbands would be there and they would go to elsewhere to sell. She felt that this problem should be controlled by the government through some policy or else it would not be possible to sustain the participation of women in the markets.

With respect to fish vendor rights, the literacy level was low and there was no knowledge about rights, they only know – ‘if I am using this space, it is mine’. Whenever a government drive occurred, they merely accepted that the space was not theirs and moved on. They were not interested in knowing about their rights. Hence education and literacy were very important. Transfer of knowledge to fish vendors was necessary. Target-achiever programmes were needed to provide direct information to persons to whom training was imparted. Otherwise there would be no awareness.

Pushpanjali summed up the session stating that the high interest shown in cooperatives indicated their importance. The big question was how to make them more effective. Collectives have greater bargaining power and the loss was realised only when they were abolished. She referred to sericulture in Odisha which was a cooperative venture. When they sold cocoons to cooperatives the price they realised was INR 1.50, but when they sold them to traders outside, they had obtained a price of INR 5. But if cooperatives were abolished middlemen could also slash their rates. But people should obtain the right price. She said women were natural protectors of tradition. In Odisha, there were casuarina and mangrove forests. It was the women who conserved them. They were linked with fisheries and also provided protection from cyclones.

Sand mining was also a problem because of the sand mafia. In places where traditional fishers were not allowed, women were suppressed. With respect to destructive fishing, she mentioned how trawlers in marine areas used chain nets which caught fish weighing 2g-2000g. Traditional fishers used traditional nets. Dolphins could get caught in large nets but they could be taken out from them. However, in fine mesh nets when prawn and other small creatures got caught, they could not be removed, live. Traditional knowledge needed to be given emphasis.

Referring to Pradip’s statement that ownership was very important, she responded that some kind of ownership over water would be good for women, too. Industry and mining were affecting fisheries. Displacement was a major issue and the displaced should be given special rights as many of them became fishers from farmers as there was no land. While giving them priority, their rights should be protected. With reference to the Indravati reservoir, there were large numbers living near the reservoir but no fishing was taking place. They did shifting cultivation for their livelihood which was destroying resources. However, if they were

inducted into fisheries, their livelihood would be secured and the natural resources would also be protected. She concluded stating that women's health should be given importance as they did not refer to it much but struggled a lot with it and this should also be brought into the policy.

### **Group Discussions**

Group discussions were held with the participants, grouped according to language and the number of participants. The discussions focused on the following:

- To develop short-term and long-term recommendations for secure tenure; policy reforms; and development of legislation, from the SSF Guidelines perspective
- To develop short-term and long-term recommendations for protection of environment; social development and gender equity from the SSF Guidelines perspective

The highlights of the group discussions were presented in the afternoon session and are given in **Appendix 1**.

## **PLENARY: SHORT-TERM AND LONG-TERM RECOMMENDATIONS FOR THE IMPLEMENTATION OF DRAFT NATIONAL POLICY ON INLAND FISHERIES AND AQUACULTURE 2019**

**Chair: Dilip Kumar, Fisheries Sector Planning, Policy and Development Adviser and Ex- Director and Vice-Chancellor, ICAR-CIFE, Mumbai**

**Presentation: Nachiket Kelkar, Ph.D. Student, Academy of Conservation Science and Sustainability Studies, ATREE, Bengaluru, and Sebastian Mathew, Executive Director, ICSF**

Nachiket Kelkar made a presentation of the draft recommendations which are available in **Appendix 2**.

At the end of the presentation, Dilip Kumar made some comments. He said that while proposing the action points, the action plan should be consulted as there appeared to be overlaps. Who was responsible for the actions suggested, must be stated. He noted that the draft had been hurriedly prepared and could be updated. He felt that it appeared as if recommendations were being given. For example, the issue of participatory management of resources emerged several times and it was already there in the document. He suggested that only missing provisions should be included. Pointing out that there were several NGOs and platforms where most fishery communities were represented, he felt, that it should be stated in the participatory regime, what civil society organizations/fishworkers organization can do

and what the Government can do. He said that the structure of participatory regime should be strong enough.

## **VALEDICTORY SESSION**

**Chair: Pradip Chatterjee, Convenor, National Platform for Small-Scale Fish Workers (Inland)**

**Valedictory and concluding remarks: Dilip Kumar, Fisheries Sector Planning, Policy and Development Adviser and Ex- Director and Vice-Chancellor, ICAR-CIFE, Mumbai**

After the presentation by the seven groups, Dilip Kumar delivered the valedictory address. He said the entire document (NIFAP) puts emphasis on small-scale aquaculture, small-scale fisheries and fisheries development for nutrition. The second issue is participatory development. Co-management is explicitly mentioned. PPP should be public-private and community partnership. With reference to a suggestion that open waters should be open-access, he said it would be a disaster. While it may be beneficial in the short-term, it would be disastrous in the long-term. He recalled what a minister from Odisha said at a meeting: we want, not mass production but production by masses and that is the spirit of the document. Cooperatives, he felt were a chronic problem in the country. Instant cooperatives were formed to obtain specific benefits and were not working in the spirit of cooperation. Extensive social mobilisation was required for one or two years, repeatedly, to function properly. People need to be convinced that if they work together, they will benefit together. Only then should they be asked to form a cooperative. If cooperatives were formed without this premise, they would not work. Secondly, they got money for training programmes for aquaculture and setting up hatcheries but did not have the requisite technical capacity. They also did not possess the social mobilisation capacity. The question was how to give some foundation of democracy in the institution. They first needed to develop capacity and sound principles of cooperative institution establishment. In the current context, they should have skills in business management. He said that when insurance charges were low people did not pay. In Bangladesh, they had a project where 20,000 coastal communities participated. It took two to three years to form village-level institutions. Women wanted a separate organisation at the village level; something that was different with different functions but with some commonalities such as a schools, clean water and the ability to manage resources. Then they came together and the women cooperatives were far ahead of their male counterparts. There were many widows in fishing villages because of poor sea safety and fishing being a highly hazardous profession. The money was put into an account and allowed to build. If something happened to someone, they would be alerted through the network and money would be delivered to the person without asking. Every month, 2 lakh takas was collected although mortality did not occur each month; the money built up and they now have 10 crores in their bank account. They don't depend on any insurance and are self-dependent.

Dilip said another thing to be mainstreamed was the ecosystem approach to aquaculture and fisheries. With respect to database, this is one of the most deficient in the fisheries sector. With internet and other tools, it was necessary to have good database of all farmers and

fishers and the resources they were using. A good reliable database for appropriate interventions was a must. He pointed out that different groups worked in different dimensions and the linkages were weak. Research must become relevant to primary producers; the gap between researchers and the primary sector should be bridged.

He concluded his address stating that Gopala Krishna had agreed to explore holding a workshop on how to develop cooperatives and especially on how to remove the weaknesses, with people who are directly involved. Such a participatory workshop could give very good suggestions to the ministry.

**Vote of thanks: Manas Roshan, Programme Officer. ICSF Trust**

Manas Roshan of the International Collective in Support of Fishworkers (ICSF) Trust thanked all the participants for their invaluable contributions to this workshop. He expressed his gratitude to the fishworkers and their organisations from 16 states (Mizoram, Manipur, Tripura, Assam, West Bengal, Odisha, Bihar, Uttar Pradesh, Rajasthan, Gujarat, Madhya Pradesh, Chhattisgarh, Maharashtra, Goa, Andhra Pradesh and Kerala), for their diverse experience and knowledge.

He also thanked Trilochan Mahapatra, Director General, ICAR and. AK Jena, Deputy Director General of Fisheries, ICAR for supporting the workshop along with Dilip Kumar, V. Sugunan, Gopalkrishna, BK Das, MK Das, BK Mishra, PS Ananthan, Ganesh Chandra, Bibha Kumari and Aparna Roy, for their enlightening presentations and for coordinating informed discussions during the workshop.

He also extended his appreciation to the group rapporteurs and translators at the workshop, G. Rohith, Sudhanshu Dey, Sudipto Bhattacharya, Sriyayee Bhattacharjee, AJ Vijayan and Ranjita Bani for facilitating discussions. He thanked Nachiket Kelkar for developing the background paper, the draft action points for implementation and for all other support during the workshop. He singled out Manoj and Akash, photographers and videographers, for a special mention of gratitude for documenting the two-day workshop.

Roshan also extended his gratitude to Ahana Lakshmi and G Geetha, consultants with ICSF, for workshop documentation and ICSF trustee, Nalini Nayak, for her valuable contributions during the workshop. He also expressed his appreciation to the National Platform for Small-Scale Fish Workers (Inland) for their invaluable support, without which, he said, this workshop would not have been possible.

Finally, said Roshan, ICSF's workshops would not have been a success without the committed and tireless efforts of its secretariat and consultants. He thanked S Ganga Devi, R. Manjula, Santhosh Kumar, Sathish Kumar and the management and staff of Seva Kendra, Kolkata, a friend to ICSF and fishworker organisations.

## APPENDIX 1: REPORTS OF GROUP DISCUSSION

### **GROUP: States of Madhya Pradesh, Chhattisgarh, Manipur, Gujarat, Rajasthan, Uttar Pradesh, Maharashtra and rapporteur is SrijayeeBhattacharjee**

This report represents the first part of the Hindi speaking (majorly) states and their representatives. This group comprised nearly 15 members representing the states of Madhya Pradesh, Chhattisgarh, Manipur, Gujarat, Rajasthan, Uttar Pradesh and Maharashtra. The CSO/NGOs and stakeholders included the MachimaraAdhikar Union, SagarmanthanMachimaraUthhanMadal(Gujarat), Jeevan Jyoti Adivasi MachhuaSahakariSamity (Madhya Pradesh), DhaniramShahu&AnusuchitJatiMahilaBahut Desi SankalaySamity (Chattisgarh), Dimbay Fish Cooperative(Maharashtra) etc.

### **Key questions for discussion and analysis under the three broad workshop themes**

#### **Theme 1. Tenure systems, institutions and governance**

Since the group comprised different states and each have tenure systems specific to the nature of their waterbodies, this question could not be resolved uniformly. States like Manipur opined that tenure rights to fishing (they were representing a confined waterbody such as a lake), should belong to villages and residents around the waterbody and specifically to those who are actively participating in fishing and its allied business. There should be open-access to water for these villagers and tenure rights to water and fishing in it should not go to outside beneficiaries through tender/auction/Thhikadari system.

The other states said in a populated country like India, it is very difficult for the government to secure rights and public benefits for actual fish farmers and persons associated with capture fish, unless tenure rights are specific and handed over through auction/tender/Thhikadars.

Given such conditions, rights should be handed over after forming specific cooperatives or societies of fishermen. They also opined that if fishermen or residents around the said waterbody were not interested in forming societies or cooperatives, then allied villages should be contacted and asked to form such cooperatives and tenure rights should be given to them. Under no condition, should tenure rights be handed over to private individuals or companies who are not directly involved in the act of fishing or its allied components through generations as they have witnessed vicious circles of corruption rampant in their activities.

The basic problem of governance that they faced was that they were not aware of the situation or law or if the government, was responsible for handing over tenure rights; and when such rights over water and the activities therein were violated, who they should approach for remedy. Proper training and awareness campaigns must be organised to facilitate small-scale fish workers regarding their rights over a waterbody even after the cooperative takes responsibility. Even if the panchayat or any other government body violates their rights or legal claim over the water or their produce or if corruption brings in private

beneficiaries over their share of rights, then the official process of complaint and claiming their rights back should be known to them.

## **Theme 2. Fisheries legislation and policy implementation**

Firstly, all policies regarding tenure rights and its implementation should be very specific to different kinds of Inland waterbodies. Tenure rights (as learnt from various representatives of different states) vary according to different waterbodies such as rivers, ponds, dams and their reservoirs, lakes, estuaries, wetlands.

Secondly, the policies should clearly mention in writing the duties of the government and the beneficiaries such as the minimum level of water that should remain in all waterbodies, 'no fishing during' breeding periods etc. should be clearly written in the policies which have to be maintained by the beneficiary or the fishermen sector. The policies should also mention in writing that if these are rules are violated, the measures that shall be taken against violators and clearly enunciate the implementing authority. Again, regarding protection of fish from other non-beneficiary communities like poisoning, dumping of garbage into fishing water, theft of fish produce shall be whose responsibility? If such responsibilities belong to the societies or cooperatives, then if these are being violated, then how do fish farmers, fish catchers or any fishermen get protection and coverage from such losses and from whom? These questions should be clearly mentioned in the coming policies.

Thirdly, insurance should cover not only fishermen but also fish and most importantly extend to the fish culture sector.

Fourthly, if various government departments like fisheries, electricity or irrigation overlap and collide, then the group's view was that the priority should go to fisheries sector as availability of water is very important for their livelihoods. Minimum level of water for the fishing sector should be secured, and the other sectors may harness the waterbody for their produce thereafter; for example electricity and irrigation, during the dry season. The irrigation department should have proper written laws stating that they should build infrastructure to protect fish from flowing from their culture area into fields or into more open waterbodies.

Fifthly, The Dimbay Fish Cooperative from Maharashtra has shown that if the inner formation and working of any cooperative can be strengthened, then it erases many problems of policy implementation. The Dimbay Fish Cooperative has won the Equator Award and is working with new generation fishermen. They have checked the outside private profit seekers from getting tenure rights over water. They have urged all the different government departments like transport, irrigation, forest etc. to move towards sustainable employment and benefit for the greater community. They have been regularly experimenting with cage and pen culture, and also with the ornamental fish sector. They have trained their members for the efficient marketing of various value-added fish produces and they now act as resource persons for training of fishermen and fisherwomen in other states. They maintain their

accounts in Tally. Various educators and scholars of fishery now work in collaboration with them.

Sixthly, any Government funds or other financial benefits should be legally transferred to bank accounts of registered societies or cooperatives which are direct beneficiaries of the fishing sector and not to any intermediaries such as NGOs which are just mediators between fishermen/fisherwomen and the Government to aid them.

Lastly, there are legislations but their implementation is not monitored. The means to obtain remedy when legislations are violated is also unknown to the fisherfolk.

### **Theme 3. Socio-economic development and gender issues**

Firstly, health initiatives and education services should be provided to children of parents who are in the fishing sector by profession. Both parents leave for their fish catch or marketing, leaving their children at the whims of uncertainty. Responsibility should be taken by someone, specifically with regard to the health and education of these children. Secondly, infrastructure for the preservation of fish after their procurement from waterbodies should be imparted through various capacity building workshops or trainings for fishermen and fisherwomen. Thirdly, knowledge, training and awareness regarding export possibilities of fish and fish produce should be imparted to fishermen and fisherwomen. Proper skill development and literacy so that formalities to attain credentials are met, so that they profit from the export sector, should also be given to them. Fourthly, knowledge regarding fish species and the value of their products should be imparted to fisherwomen as they are mostly engaged in this sector. Fifthly, Maternity leaves and menstruation benefits should be given to women. Sixthly, fish markets should be developed for each district and they should have infrastructure like toilets, sanitation and a gender-sensitive atmosphere. Seventhly, all cooperatives should have a reservation of 50% for women members. Eighthly, training and surveys should be done to check if fisherwomen have their own bank accounts.

Inland fishermen and fisherwomen should also get scholarships to know the technical developments in the fishery department in reputed educational institutes in India. Lastly, SSF guidelines are known to those who are literate and privileged enough to be present in such national-level workshops. To understand the true goal-oriented results of the SSF guidelines, it should be brought out in simple rural regional languages and should be imparted through various target-oriented workshops among various small-scale fishermen and women across the country.

## Group: Odisha

### Rapporteur -Sudhansu Sekhar Deo

#### Group members-

- Banamali Jena- fisher.
- Maguni Jena- Leader of the fishers.
- Bhabagrahi Behera- Fisher and cooperative leader.
- Braja Ghadei- Fisher.
- Chitta bhai- Fisher activist.
- Puspanjali Satapathy- Vasundhara member.

### Theme 1

#### Tenure systems, Institutions and governance-

##### Rivers-

- Traditional right of fishing of everybody resides in riverbanks. Leasing part of river for one to three years to fisher co-operative societies by revenue department.
- Brackish water Lake Chilika: Few castes which are considered fishers have customary right of fishing from Chilika Lake. In shallow parts of the lake lease is given to fisher co-operatives by revenue department.

##### Reservoirs-

- Lease by fishery department to fisher co-operative of displaced families and locals.
- Fishing right has been recognised in the name of fisher cooperative society in the framework of the Forest Right Act, 2006.

##### Ponds-

- Lease by panchayat to SHGS/Co-operatives/Individuals for 1 to 5 years.
- Suggestion – Long-term lease should be ensured and rights under the Forest Right Act, 2006 need to be recognised.

#### Management of waterbodies-

- Rivers- Water resources department.
- Reservoirs- Water resources department.
- Chilka lake- Chilka development authority.

Long-term lease or right will ensure ownership of users and they will manage the resources in a sustainable way. Boundary demarcation in rivers and lakes will reduce conflict. Legal right and long-term lease will ensure ownership which will lead to conservation, sustainable use

and environmental pollution. SSF guidelines will help in the process as it focuses on the improvement of quality of life of small-scale fishers.

## **Theme-2**

### **Fisheries legislation and policy implementation**

Odisha government has a state fishery policy. There are bottlenecks in implementation. Dialogue with the government can improve the implementation. There are examples of participatory tenure regimes in inland waterbodies that are inclusive of fishing communities.

SSF guidelines and NIFAP can assist in improving legislation and policies in relation to the conservation and sustainable use of inland fishery resources and protection of human rights of fishing communities as fisher organisations can hold dialogues with the state governments by using and showing the documents.

### **Theme3. Socio-economic development and Gender-**

1. Ban of fishing for certain periods leads to the loss of livelihood and there is no legislation to address it.
2. Due to lack of proper infrastructure and marketing systems traders get more benefit than fishers in the whole value-chain. Strengthening of co-operatives and direct marketing by them can ensure a better share to fishers.
3. Odisha government has a Matshyajibi Unnayana Yojana (MUY) which addresses socio-economic development of the fisher community.
4. After introduction of prawn cultivation in some places women are engaged in processing of prawns. Traditionally they are engaged in sorting, grading and marketing fish and dry fish making.
5. Women can be trained in scientific methods of post-harvesting mechanisms. Credit-linkage for dry fish making can ensure them a better income.
6. No one in the group could not explain the impact of migration.
7. SSF guidelines can be used as advocacy materials for the improvement of existing schemes.

## **Group: Uttar Pradesh, Madhya Pradesh, Jharkhand and Bihar**

### **Theme - 1**

1. Tenure rights – Tenure rights on natural resources should be recognised and given to the local traditional fisher community living near and around the area where the resource is located.
2. Tenure rights should be allocated by the panchayat of the local area in which the resource is present.
3. Tenure rights should always be formal and legally recognised.
4. Tenure rights should be for a term of at least 10 years.
5. Tenure rights should be given strictly to a group from within the traditional community and not to an individual.
6. Long-term rights will ensure stable incomes which in turn will drastically reduce conflicts over the resource which again in turn will help in improving the living condition of the fishers community.
7. Lease amount fixed should be taken by the allocating body in instalments.
8. Welfare provision for fishers should be at par with farmers.

### **Theme - 2**

1. Compensatory policy should be adopted and practiced in various forms by different stakeholders for sustainable development and protection of the traditional fishing practises.

### **Theme -3**

1. Involvement of fisherwomen in different fishing activities like culture fisheries, post-harvest activities (marketing and processing) and creating awareness among the female and male fisherfolk regarding the advantage of both getting genders involved in fisheries.

## Group: West Bengal and Tripura

Shyamendu Biswas  
Bibartan Bhattacharya  
Somnath Karmakar  
Sujoy Jana  
Milan Das  
Bidhan Chandra De  
Jotin Mahato  
Ratna Majumdar  
Debashish Shamol  
Debobroto Khuntia  
Sudip Majumdar  
Kanaila Majumdar  
Bidwan Das  
Srinath Mondol  
Jharna Acharya  
Soumen Roy  
Milan Sinha  
Sudipta Mukhopadhyay (Rapporteur)

- Need data bank on waterbodies and inland fisheries census (old data of number of persons associated with inland fishing is being used).
- In West Bengal for open waterbodies there is free access. There is no legal recognition of rights of fishing workers for open waterbodies.
- For private waterbodies – lease period should be long-term e.g. 10 years.
- Leasing out government waterbodies should not be allowed.
- Need government assistance in renovation of ponds (including those owned privately) – currently this is not the case in Tripura. In West Bengal this assistance is provided by panchayats but private owners do not get profits from sale of mud.
- Wetland Development: Prevent unregulated development of wetland which might destroy the ecosystem. Example: East Kolkata Wetland Development. The fishing community has been left out of the development. The wetland faces challenges of encroachment, pollution, reduced water level and overall reduction of catchment area.
- Fishing ban period – ensure implementation of the ban period.
- Need better implementation of ban on use of formalin and pesticides.
- Need protection for preservation of indigenous species. Should not promote exotic species.
- Conservation efforts should be with informed consent of the fishing community. Conservation efforts must include dialogue and active participation of the fishing community, e.g. Sundarbans.
- Women fish workers need to be prioritised in government schemes. There need to be creches for children, mahila cooperatives, hostels for children.
- Socio – economic development by cooperative – e.g. of Bon Hooghly Cooperative in North 24 Parganas in West Bengal. The Cooperative has a permanent lease of the lake. It has an education centre and a community centre.

- Ensure NFDB (National Fisheries Development Board) benefits/ reaches small fish workers.
- Need system of checks for fish imported from other countries – currently there is no system.
- Need organised fish market. Need for a survey of fish markets. Currently retail fish markets are part of other agriculture/vegetable markets.

## **Group: Assam and Manipur**

### Members

1. Bapukan Borman
2. Amal Medhi
3. Rupjyoti Bora
4. Chumi Bordoloi
5. K H Deben
6. Rapporteur: Ranjita Bania

### **Theme 1. Tenure System, Institutions and Governance**

1. Some of the Wetland areas are leased by the government by an open tender system for 3-5 years.

An informal system of lease also exists in case of ponds. A lease agreement is not registered to escape from the revenue amount which is 3-7% depending upon the land type (low-lying, highland etc). In such cases, the leaseholder cannot claim insurance or go for financial support from banks. All the members agreed that a formal recognition of tenure was required.

2. While opting for lease in the private sector proper documents should be taken to avoid future conflict/to get financial assistance.

When a particular waterbody is leased, a large number of fisher get engagement in the area to earn their livelihood. As the leaseholder has invested money he /she ensures better production from the system. The involved fisher can get access to protein (atleast to some extent) for their family in an affordable way. The income from the waterbody gives them economic and social security.

3. To grow fish good quality water is needed. So the quality of water is maintained to achieve higher production. Thus both the resources are secured.

### **Theme 2- Fisheries legislation and policy implementation**

1. In the lean season when fishing is banned under the Assam Fisheries Act, around 10 fish are prohibited for catch in the Act, but when fisher catch other species they are harassed by government officials.
2. Policies exist, but their implementation is not effective.

### **Theme 3- Socio-economic development and gender**

The major concerns in fisheries are:

1. Decrease in fish stock
  2. Pollution
  3. Unavailability of input- seed, feed etc. and their high cost
  4. Lack of credit facility
  5. Construction of dams which will affect the downstream population
- Some of the NGOs viz JEEVA SURAKSHA, one of the NGOs working in Assam provide necessary technical and input support with exposure visits to different aquaculture farms for motivation and exposure.
  - The contribution of women fisher is still not focused. They should be brought to mainstream aquaculture.
  - Involvement of women in value-addition of fish viz. preparation of dry fish, fish pickle etc. will provide handsome amounts to the womenfolk which will ultimately upgrade their livelihood, social and financial position.
  - Due to migration, workers for fish farms are decreasing and ultimately the production from the system is going down.

## **Group: English Speakers (Goa, Institutions)**

### **Members:**

Dilip Kumar, Sebastian Mathew, Pradip Chatterjee, Sebastiao Rodrigues, Margarida Silveira

### **Rapporteur: Manas Roshan**

1. Tenure rights, institutions and governance
  - a. Protection of tenure rights of fishing communities should be explicit in the NIFAP (Initial draft contained this, but was not included in the final draft).
  - b. Tenure policy should be uniform for the state – local variations can exist.
  - c. Odisha (reservoir fishery policy process led by UNDP) and Maharashtra recognise fishers' rights in reservoirs for a 5 year period. But a longer term is needed (at least 10 years).
  - d. In most places, the fishery department has no jurisdiction over waterbodies. Establish inter-departmental committees at the state-level (as in the Uttar Pradesh Agricultural Production Commission) to manage waterbodies.
  - e. Leasing policies that restrict access to bonafide fishing communities should be reviewed to make these communities the only participants in the leasing system.
  - f. Instead of identifying communities solely on the basis of caste, use the “active fishworkers” criteria (primary source of income from fishing).
  - g. As in Bangladesh, adjacency principle should apply (fishing rights to communities living in the vicinity of the waterbody).
  - h. Leasing policies that restrict access to bonafide fishing communities should be reviewed to make these communities the only participants in the leasing system.
2. Legal and Policy Frameworks
  - a. Customary tenure arrangements under tribal councils (land, forests, water) should be considered as good practices for access, use and control of resources (such as tribal councils in Meghalaya).
  - b. Norms for access, use and management of fishery resources should be made at par with agriculture, power sectors.
  - c. Input prices of resources such as water for irrigation should be at par with agriculture.
  - d. E.g. Inclusive tenure regimes: In the Dimbe reservoir in Pune, Maharashtra, tribal fishers have secured the right to fish.
  - e. Relevant provisions of the Code of Conduct for Responsible Fisheries (CCRF) and SSF Guidelines with respect to conservation and sustainable use should be integrated into all state fisheries legislation.
  - f. Existing state legislation to regulate inland fisheries and aquaculture should be implemented by introducing requisite rules; identifying destructive gear and practices; and by enforcing penalties.
  - g. Ecosystem approach should apply to the use and management of aquatic resources.

- h. The authority for regulating use of inland fishery resources should be vested in the fisheries department, such as in Bihar. Water resources should be equitably shared between sectors.
  - i. Example of Vidarbha tanks, jointly managed at the panchayat level by fishery and agriculture stakeholders).
3. Socio-economic development and gender
- a. Human rights concerns: Land and water area grabbing; sand mining and fishery mafia; police harassment, misuse of the law by fishery officials; threats and attacks on human rights and environment defenders
  - b. Delimit villages around waterbodies
  - c. Fisheries should be recognised in the National Water Policy
  - d. The rights to resources of traditional fishing communities should be recognised, emulating provisions of the Forest Rights Act for forest dwelling tribal communities.
4. Gender
- a. Collect gender-disaggregated data on socio-economic status of fishing communities.
  - b. Develop women-specific fisheries schemes to improve the capacity of women fishworkers. Give priority to women for access to government schemes.
5. Implementation
- a. When adapting the NIFAP 2019 at the sub-national level, States and UT's should pay due attention to the action points developed by this process, for the equitable development of small-scale inland fishing communities.

## APPENDIX 2

### **Recommendations from the ICSF National Workshop on Improving Inland Fisheries Governance in India, Kolkata, 6-7 September 2019**

This set of recommendations has been revised after incorporating all suggestions made during and after presentations and state-wise group discussions throughout the ICSF Workshop. Some recommendations might overlap with the short-term, medium-term, and long-term action points that have been included in the expert committee-prepared draft National Action Plan (NAP) to implement the guidelines of the draft National Inland Fisheries and Aquaculture Policy (NIFAP, 2018) at the state-level.

#### **Recommendations for short-term/immediate time-frames (1-3 years)**

##### Awareness and outreach

- Translation of NIFAP into vernacular languages relevant to inland fishers across India and the use of translated documents in capacity building and awareness programs across states.
- Build a common platform (e.g. through a workshop or conference) for rights and tenure awareness, via exchange between marine and inland small-scale fishers, in states where both systems interact. Where relevant, common platforms need to be built for exchange between forest dwellers' and fishers' rights, both at the community-level and individual level.
- Include duties and responsibilities of inland fishing communities in definitions and demands for fishing rights, the right to water, and tenure security (especially with respect to environmental conservation, pollution, etc.).
- To recognise that “ecological flows” and not just ‘minimum flows’ in rivers are crucial for conservation of riverine biodiversity (endangered fauna and flora), sustaining fisheries productivity, and human communities dependent on fishing for their livelihoods. Ecological flow criteria do not apply only to protected areas or sanctuaries, but to all flow- regulated rivers in general.
- There is a need to emphasise the non-consumptive use of water, availability of diverse ecosystem services, and critical dependence of fishery-based livelihoods on India's rivers. Wider awareness of this is considered necessary to address concerns over dominant discourses of water development.

### Data gaps and review needs

- Proposed inland fishery census plans should involve collection of data beyond demographic and socio-economic variables. These exercises should involve data collection on fishing practices, institutional arrangements, migration, seasonality of fishing activity (part-time or full-time), post-harvest and market-linkages, fishing behaviour, local knowledge, role of women in fisheries, etc.
- Data on fish yield-effort-catch statistics for different inland fisheries systems may be collated by agencies like CIFRI / CIFE and made available on open-access data platforms.
- State-level reviews of cooperative institutions; their functioning, effectiveness, and relevance to fishing rights and tenure, through model studies on selected systems and institutions.
- A status report on the impacts of pollution and hydrological change for all major inland water fisheries systems must be undertaken immediately.
- Encourage research on poorly known fishing systems in inland waters, e.g. man-made irrigation canals, derelict waterbodies, temporary storage ponds (e.g. *Balram* ponds) etc. to augment local fishers' and farmers' incomes.
- Describe emerging conflicts between fisheries and business interests (e.g. tourism projects, waterfront development, urban planning, etc.) with an aim to protect fishers' rights and interests, and disallow/discourage land or water-grabbing.
- Study the impacts of upcoming large-scale water infrastructure projects (especially river-interlinking and waterway projects, etc.) on fisheries, fishing rights, access, and fish breeding habitats. In particular, examine the impacts of practices like maintenance dredging and pollution on fish breeding success in rivers and estuaries. Where needed, utility of ecologically-friendly interventions for de-silting of shallow wetlands should be assessed for measures to deepen such wetlands to increase fisheries productivity.

### Pollution, sanitation, and health risks

- Strong bans must be enforced on the use of dangerous substances during fish capture and culture operations, post-harvest activities, fish preservation, storage, and marketing, etc. (e.g. especially bans on pesticides, poisons, carcinogens, bio-contaminants, etc.).

- Rapid implementation of programmes to improve sanitation conditions at fish markets
- In existing water pollution monitoring programmes, emphasise biological assessments along with physico-chemical assessments of water quality.
- Access to soil and water laboratories must be made easier. In remote regions (e.g. in the north-eastern hill states), the absence of soil and water analysis facilities might predispose communities to risk from fish consumption.

#### Legislation, policies, interventions

- Revise/amend the National Water Policy for explicit inclusion and recognition of inland fisheries and fishers' rights.
- Locality-based fishing rights (based on spatial access, traditional identity, and preference of local communities) need to be a priority of processes formalising fishing rights and access to waterbodies.
- Removal of auction-leasing systems on all river stretches in states where they exist and granting community rights and access arrangements, to avoid open-access conflicts.
- In forest areas, fishing rights should be included with the “bundles of rights” of forest-dwellers, with appropriate monitoring of risks to and from biodiversity.
- Policies must address gaps in disaster-relief programmes and schemes for fisherfolk who are usually more vulnerable to disaster impacts, and are also often involved in rescue operations and assisting government authorities.
- Increase leasing periods up to 10 years, to prevent overharvesting due to short-term intensive fishing.
- Examples indicating a positive role of self-government (especially panchayats or tribal societies) and participatory approaches in the protection of fishing rights need identification and promotion.
- Identifying opportunities to ensure fishers' minimal right to water, along with management of fishing rights, tenure and access, competing uses, and resource conservation.
- Protect fishers from crime-related activities carried out along waterbodies (especially sand mining mafia activities, harassment by local police or other departmental agencies)

- Enable provisions for improving staffing and technical capacity in state fishery departments. There is a need to increase extension and training capacity for culture fisheries development, especially in remote areas.
- For waterbodies with practices for enhanced fishery practices, modify policies to allow fisher involvement and ownership in stocking activities.
- Attempt to revive values of urban wetlands for fishing benefits to urban poor.
- Policies need to flag the importance and encourage the uptake of climate-smart fisheries technologies, in the aquaculture sector.
- Restrictions (including quarantine) on exotic and invasive fish species must be strongly implemented and native fishes must be conserved.
- In estuaries and rivers subject to tidal regimes, large-scale flooding, or frequent erosional processes, rights of fishers to fish near or from islands must be protected. Tenure around islands (especially temporary islands) is often uncertain and a matter of recurring conflicts.
- Redressal of fishers' grievances by the state-level fishery departments (and their national and regional administrative links) is sought where there has been a constitutional violation of human rights in fisheries at the hands of government authorities (e.g. police departments, forest departments, etc.).

#### Women in inland fisheries

- Women must be recognised as fishers in their own right. Present legislations that identify women as 'dependents of fishermen' in any form should be revised.
- The creation of separate "womens' cooperatives" must be undertaken.
- Urgent attention is needed to address poor literacy, limited social security, capabilities, access to sanitation, and market access to women in inland fisheries. The priority of interventions must be to stem the trend of decreasing participation of women and the risks faced by them, in all activities related to inland fisheries. This goes beyond extension and training programs for women alone.
- Need to promote gender-sensitive and gender-disaggregated research on issues of women's involvement in inland fisheries

#### **Recommendations for intermediate and long-term time-frames (5-10 years)**

##### Awareness and extension programmes

- Need to identify ways to foster community engagement and awareness regarding fishing rights and tenure, to gradually move existing institutional regimes towards greater community-based and participatory management.
- Consultations with inland fishers should be initiated by government, not as reconciliation, response, or reaction; but proactively.
- Expand the demand for fishing rights and tenure to voluntarily include duties and responsibilities of fishing communities towards: 1) environment and biodiversity conservation, 2) prevention of crime, 3) prevention of exploitation (child labour, enforced labour, etc.).

#### Data gaps and review needs

- Generate biological and ecological knowledge to assess and define environmental flows for rivers regulated by dams and barrages. Use this knowledge to inform and monitor dam reoperations, re-engineering (e.g. fish passes), or restoration efforts where needed (e.g. in case of important fisheries like that of Hilsa, or Mahseer).
- Conduct studies to review the extent and magnitude of ‘destructive fishing practices’ on fisheries sustainability and social conflicts to identify state-level or fishing system-level policy implications of fishing bans, restrictions on mesh sizes, etc. Accordingly, seasonal, species-based, size-based, and other forms of bans and restrictions must be revised and updated.
- In a changing economy and climate, aim to understand and monitor long-term changes in ecological baselines, and the meanings of tradition, custom, locality, and community; and their relevance to knowledge and adaptation. This becomes important especially with recognition of the impacts of caste-based and religion-based politics on the process of demanding access and seeking rights to fishing areas.

#### Legislation, policies, and interventions

- It is crucial to reconcile national and state-level priorities and institutional controls to protect secure tenure and rights of fisheries (e.g. in transboundary riverbasins, wetlands, tidal deltas, estuaries, etc.).

- Promotion of “development-oriented” and value-chain-oriented approaches towards fishery management at all levels (instead of revenue-oriented or welfare-oriented only).
- Reduce the length of market chains, regulate the involvement of market intermediaries.
- Creation of independent fishery departments in all states (not nested under agriculture or animal husbandry).
- Different concerned departments should manage multiple-use waters equitably. For waterbodies with major dependence on fisheries, the management authority should be the state fisheries department in such cases. In these cases the ‘first right to water’ must be extended to fishing communities. Mechanisms for inter-sectorial and inter-departmental coordination at the state-level, between states, and between the state and national levels need to be identified and sustained.
- A review of fishing policies in relation to biodiversity and the environment, to suggest amendments to existing state- and national-level fisheries and environment laws, such as the Forest Rights (Traditional and other Forest-Dwellers) Act, 2006; the Wildlife (Protection) Act, 1972; and other environmental legislations and acts.
- Implementation of measures towards full social security and safety of fishworkers and fishers during work (safety from crime, extortion, harassment, disturbance to fishing etc.).
- Replication of community rights provisions of the Forest Rights Act (2006) in fisheries rights.



**International Collective in Support of Fishworkers (ICSF)**

**NATIONAL WORKSHOP:  
TOWARDS DEVELOPING AN IMPLEMENTATION PLAN  
FOR INDIA’S 2019(DRAFT) NATIONAL POLICY  
ON INLAND FISHERIES AND AQUACULTURE (NIFAP) AND THE SSF  
GUIDELINES Seva Kendra Calcutta, Kolkata, West Bengal, India**

**6<sup>th</sup> and 7<sup>th</sup> September 2019**

<b>Friday, 6<sup>th</sup> September 2019: Day1</b>	
8.45- 9.00	REGISTRATION
9.00- 11.30	<p style="text-align: center;"><b>INAUGURAL SESSION</b></p> <p><i>Welcome:</i> Shri. N.Venugopalan, Programme Manager, International Collective in Support of Fishworkers( ICSF) Trust</p> <p><i>Inaugural address:</i> Shri. Gopal Krishna, Director / Vice Chancellor, ICAR - Central Institute of Fisheries Education, Mumbai</p> <p><i>Opening Remarks:</i> Shri.Pradip Chatterjee, Convenor, National Platform for Small Scale Fish Workers (Inland) Shri.Nachiket Kelkar, Ph.D. Student, Academy of Conservation Science and Sustainability Studies, ATREE, Bengaluru</p> <p><i>Keynote Address:</i> Shri.B. K. Das, Director, ICAR-Central Inland Fisheries Research Institute (CIFRI), Barrackpore, Kolkata</p> <p><i>Onworkshop objectives:</i> Shri.Sebastian Mathew, Executive Director, ICSF</p> <p><i>Introduction</i> Introduction of participants and their organizations</p> <p><i>Chair:</i> Smt. Nalini Nayak, Trustee, ICSF Trust</p>
11.30-11.45	TEA-COFFEE BREAK AND GROUP PHOTO
11.45-12.45	<p><b>SESSION 1:</b> TENURE SYSTEMS, INSTITUTIONS, AND GOVERNANCE</p> <p><i>Speakers:</i> Shri V.Sugunan, Assistant Director General(Retd), Indian Council of Agricultural Research(ICAR), New Delhi Shri Nachiket Kelkar, Ph.D. Student, Academy of Conservation Science and Sustainability Studies, ATREE, Bengaluru</p> <p><i>Chair:</i> Sebastian Mathew Executive Director, ICSF</p> <p style="text-align: center;"><b>DISCUSSION</b></p>
1.00-2.00	LUNCH BREAK
2.00-3.15	<p><b>SESSION 2:</b> FISHERIES LEGISLATION, POLICY IMPLEMENTATION AND THE ENVIRONMENT</p> <p><i>Speakers:</i> Shri Ganesh Chandra, Senior Scientist, Agriculture Extension and Training Cell, ICAR- Central Inland Fisheries Research Institute(CIFRI), Barrackpore, Kolkata</p>

	<p>Shri P.S. Ananthan, Senior Scientist, Social Sciences Division, ICAR-Central Institute of Fisheries Education(CIFE)</p> <p>Shri M.K. Das, Head and Principal Scientist, Fisheries Resources and Environmental Management, ICAR-Central Inland Fisheries Research Institute(CIFRI), Barrackpore, Kolkata</p> <p><i>Chair:</i> Shri Shri V. Sugunan, Assistant Director General(Retd), Indian Council of Agricultural research(ICAR), New Delhi</p> <p>DISCUSSION</p>
3.15- 3.30	TEA -COFFEE BREAK
3.30-5.30	<b>SESSION 2:</b> FISHERIES LEGISLATION, POLICY IMPLEMENTATION AND THE ENVIRONMENT ( <i>contd.</i> )
<b>Saturday, 7<sup>th</sup> September 2019: Day 2</b>	
8.45 -11.30	<p><b>SESSION 3:</b> SOCIO-ECONOMIC DEVELOPMENT, GENDER ISSUES AND ROLE OF COOPERATIVES</p> <p><i>Speakers:</i> Smt. Aparna Roy, Scientist, Agriculture Extension and Training Cell, ICAR-Central Inland Fisheries Research Institute (CIFRI), Barrackpore, Kolkata</p> <p>Smt. Bibha Kumari, Guest Faculty, P.G. Department of Zoology, Patna University, Patna</p> <p>Shri B.K. Mishra, Managing Director, The National Federation of Fishers Cooperatives Ltd.(FISHCOPFED), New Delhi</p> <p><i>Chair:</i> Smt. Puspanjali Satpathy, Vasundhara, Odisha</p> <p>DISCUSSION</p>
11.30-11.45	TEA-COFFEE BREAK
11.45-12.45	<i>Group Discussions:</i> To develop short-term and long-term recommendations for secure tenure; policy reforms; and development of legislation, from the SSF Guidelines perspective
1.00-2.00	LUNCH BREAK
2.00-3.00	<i>Group Discussions:</i> To develop short-term and long-term recommendations for protection of environment; social development and gender equity from the SSF Guidelines perspective
3.00-4.00	<b>PLENARY2:</b> SHORT-TERM AND LONG-TERM RECOMMENDATIONS

		<p>FOR THE IMPLEMENTATION OF DRAFT NATIONAL POLICY ON INLAND FISHERIES AND AQUACULTURE 2019</p> <p><i>Presentation by:</i> Shri.Nachiket Kelkar, Ph.D. Student,Academy of Conservation Science and Sustainability Studies, ATREE, Bengaluru, and Sebastian Mathew, Executive Director, ICSF</p> <p>Chair: Shri.Dilip Kumar, Fisheries Sector Planning, Policy and Development Adviser and Ex- Director and Vice-Chancellor, ICAR-CIFE, Mumbai</p> <p>DISCUSSION</p>
4.00-4.15		TEA-COFFEE BREAK
4.15-5.15	<i>Group Report Presentations by Interpreters and Rapporteurs:</i>	<p>Rapporteurs: Shri. Gutta Rohith (Telugu) Smt.Srijayee Bhattacharjee (Hindi) Shri Subhasis Dey ( Hindi) Shri.Sudhansu Sekhar Deo (Odiya) Shri. Sudipta Mukhopadhyay (Bengali) Smt. Rajita Bania (Assamese) Shri. A. J. Vijayan(Malayalam) Shri. Manas Roshan (English)</p> <p>Chair: Pradip Chatterjee, Convenor, National Platform for Small Scale Fish Workers (Inland)</p>
5.15-5.45	<i>Valedictory and concluding remarks:</i>	Shri Dilip Kumar, Fisheries Sector Planning, Policy and Development Adviser and Ex- Director and Vice-Chancellor, ICAR-CIFE, Mumbai
5.45-6.00	<i>Vote of Thanks</i>	Shri Manas Roshan, Programme Officer. ICSF Trust
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