Report of the Sixth Regional Training Course on the Code of Conduct for Responsible Fisheries

20 September - 02 October 2014
Chennai, India
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Standing - Row 1 (L-R): S M Sajjad Uddin, Prathvi Rani, Dinali Ranmadugala, Mariyam Nawa, Khadeeja Inaya, Kanchi Bhargavi, Hnin Yu Hlaing, V Cheryl, Md Yeasin Mozunder
Standing - Row 2 (L-R): Anang Wahyu Susilo, PNMP De Silva, A Siva, Antonius Sujanto Siregar, Ko Ko Maung, Soe Linn Kyaw, BAPKR Bamunuarachchi, Aris Budiarto
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20 September - 02 October 2014, Chennai, India

Background

1.0 The 1995 FAO Code of Conduct for Responsible Fisheries (CCRF) or popularly known as the ‘Code’ is one of the most important international instruments devised for comprehensive management of the living aquatic resources of our planet. It is all-inclusive and all-encompassing and is now an indispensable source of reference on good conduct in fisheries. However, the major weakness of the CCRF is its strength – its elaborate and complex nature. Therefore, even after almost two decades, its implementation has been slow and penetration to the grassroots equally dismal. The Regional Training Course on CCRF (RTC-CCRF) has been devised with the objective of building the capacities of fisheries officials at the middle and junior-levels in the member-countries (Bangladesh, India, Maldives and Sri Lanka) of the Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO) and other countries with similar settings who can be familiarized with the objectives and principles of the Code and its Technical Guidelines (TGs). It is also hoped that the RTC-CCRF over a period of time will build a cadre of officers in the region who are well-conversant with the Code and its TGs and this would help in taking the Code to the end-users much faster and more effectively.

2.0 The Sixth RTC-CCRF (RTC-CCRF 2014) was organized during 20 September - 02 October 2014 in Chennai with extensive field visits to places of fisheries interest in Thiruvananthapuram, Kanyakumari and Kochi in Southern India. The RTC-CCRF 2014 was organized in collaboration with the Bay of Bengal Large Marine Ecosystem (BOBLME) Project, which is a regional Project funded principally by the Global Environment Facility and others and executed by the Food and Agricultural Organization (FAO) of the United Nations. A total of 24 participants (4 each from Bangladesh, India, Indonesia, Maldives, Myanmar and Sri Lanka) were nominated by their respective governments to attend the RTC-CCRF 2014. The participants from Indonesia and Myanmar were sponsored by the BOBLME Project. Annexures 1, 2 & 3 contain the Prospectus of the RTC-CCRF 2014, Agenda and Timetable and the List of Participants respectively.

Opening Ceremony

3.0 The opening ceremony of the RTC-CCRF 2014 was held in Hotel Raj Park, Chennai on 20 September 2014. Dr K Vijayakumaran, former Director General, Fisheries Survey of India and Dr E Vivekanandan, Scientist Emeritus with the Central Marine Fisheries Research Institute (Chennai Centre) attended the opening session. Dr Yugraj Singh Yadava, Director BOBP-IGO welcomed the participants from the participating countries. The opening session began with the traditional lighting of the lamp.

4.0 Dr Yadava in his welcome address said that the RTC-CCRF is an important programme in the activity matrix of the BOBP-IGO and aims at capacity building of junior and middle-level fisheries officials to enable them to deal with complex fisheries situation in their respective settings. He expressed his happiness on the participation of Indonesia and Myanmar in the Sixth Training Course. Dr Yadava said that over a period of time this Training Course would be instrumental in building a team of officers in the region who would be more familiar with the Code, its TGs and their application at the ground level. He said that the CCRF is a comprehensive document meant to address fisheries issues in a practical
Presentations at the Opening Session of the Sixth RTC-CCRF
manner and hoped that the RTC-CCRF would be a definite step to bridge the gap that presently existed in the BOBP-IGO member-countries and other countries in the region in adapting the Code to meet their national requirements. He also made a brief orientation on the overall course. Dr Yadava thanked the BOBLME Project for partnering with the BOBP-IGO and Dr K Vijayakumaran and Dr E Vivekanandan for agreeing to be present as guests at the opening session.

5.0 Delivering a brief overview of the Course, Dr Yadava said that the RTC-CCRF- 2014 comprised lecture sessions, field visits, group works, pair presentations and personal assessments. The Course was held in Chennai in two phases: 20-23 September and 28 September- 02 October 2014. In between the participants undertook field trips to Thiruvananthapuram, Kanyakumari and Kochi in Southern India to familiarize with the ground-level situation and interact with the community. The Course also included two seminars to allow the participants to interact with fisheries experts.

6.0 Dr Yadava also provided a brief overview on “The Bay of Bengal Programme Inter-Governmental Organisation: Its mandate, objectives and programmes”. He said that the BOBP-IGO is working to enhance cooperation among member-countries, other countries and organisations in the region and provides technical and management advisory services for sustainable coastal fisheries development and management in the Bay of Bengal (BoB) region. Dr Yadava said that starting as a FAO field project in the late 70s, the Organization has been closely involved with fisheries management and development in the region. Realizing the value and potential of BOBP-IGO in their fisheries development, the member-countries are now considering transforming the Organisation as a regional fisheries management body for the region. In this regard, the Organisation has also developed a Strategic Action Plan and initiated discussions with the member-countries and other regional organizations with involvement in the Bay. Dr Yadava’s lecture (power point) is given in Annexure 4.

7.0 Dr K Vijayakumaran, Guest speaker for the opening ceremony welcomed the participants and made a presentation on the “Regional initiative in managing shared and common resources”. He discussed concepts like ‘commons’, ‘common property resources’ and ‘shared resources’. He said whatever a manager preached needed to make sense to small-scale fishers and this was a big dilemma. He also discussed Illegal, Unreported and Unregulated (IUU) fishing and piracy, which in recent years has added another dimension to regional fisheries management. The power point presentation of Dr Vijaykumar’s lecture is given in Annexure 5.

8.0 Dr E Vivekanandan, Scientist Emeritus with the Central Marine Fisheries Research Institute (Chennai Centre) delivered the special address on “The shared nature of the Bay of Bengal”. He said that most of the talks on the shared nature of the Bay were more from the fish stock point of view rather than on social aspects. He also talked about the lack of a common mechanism for information sharing between countries in the region. Annexure 6 contains the full text of Dr Vivekanandan’s lectures.

9.0 During the post-lunch session, Dr Yadava spoke on ‘Introduction to CCRF.’ In the presentation, he explained about the CCRF, the nature of the Code and the articles and the Technical Guidelines or the TGs. He explained that while the Code was only 43 pages in length, it was highly technical and difficult to understand. To make things easy to understand, the FAO had simplified the Code into a 13 page booklet, which was also translated into several languages spoken in the region by the BOBP-IGO. Further, the articles of the Code have been elaborated in the form of TGs, which are basically meant to help the policy makers and others in implementing the provisions of the Code. The power point presentation of Dr Yadava’s lecture is given in Annexure 7.

10.0 In the last session of the day, Mr Rajdeep Mukherjee, Policy Analyst, BOBP-IGO spoke on “Issues and conflicts in fisheries management system”. His talk highlighted the range of issues and conflicts that
Presentations during the Sixth RTC-CCRF
Presentations during the Sixth RTC-CCRF
Field visits during the Sixth RTC-CCRF

Visit to Muttom Fishing Harbour, Tamil Nadu

Demonstration by ADSGAF on use of solar energy in fisheries sector

Visit to Museum at CMFRI, Kochi

Visit to CIFNET, Kochi

Visit to CIFNET, Kochi

Seminar on the House Boat in Kerala backwaters
fisheries management is challenged with and how CCRF emphasizes on addressing these challenges. Mr Mukherjee said that the lack of coordination between relevant Departments of the Government (e.g. Fisheries and Environment) was a major concern in fisheries management. The power point presentation of Mr Mukherjee’s lecture is given in Annexure 8.

11.0 Day two of the RTC-CCRF (21 September 2014) began with the presentation of ‘Case Studies’ by the Trainees followed by two lectures during the post-lunch session. In the first lecture, Dr Yadava spoke on “International treaties, laws and conventions in fisheries”. In his presentation he elaborated some of the important international treaties and conventions in fisheries sector and also pointed out their scope and application. The power point presentation of Dr Yadava’s lecture is given in Annexure 9.

12.0 Mr Mukherjee delivered the second lecture on “Root cause analysis of fisheries problems”. He explained the importance of analyzing the problems and said that such analysis was essential to understand the root causes of problems, which would go a long way in effective planning of the strategies and solution to the problems. The power point presentation of Mr Mukherjee’s lecture is given in Annexure 10.

13.0 Day three of the RTC-CCRF (22 September 2014) included seven presentations followed by a game on fisheries management. In the first presentation of the day, Dr Md Sharif Uddin, Fisheries Resource Officer, BOBP-IGO spoke on “Managing commercially important and vulnerable species”. He said that effective fisheries management should be concerned with the whole stock unit over its entire area of distribution. Dr Sharif also highlighted on the ‘Regional Plan of Action for Sharks and Hilsa’ that the BOBLME and the BOBP-IGO are working upon. The power point presentation of Dr Sharif Uddin’s lecture is given in Annexure 11.

14.0 In the following presentation on “Understanding MCS in marine fisheries”, Mr Mukherjee discussed on the importance of monitoring, control and surveillance (MCS) in the overall governance and management of fisheries in the region. Citing the current drawbacks in implementing MCS, Mr Mukherjee said that small-scale fisheries in fact could benefit from MCS and such benefits should be explained to the fishers to promote their active participation. Annexure 12 contains the power point presentation of the lecture.

15.0 In the subsequent presentation on ‘Ecosystem approach to fisheries management’ Dr Vivekanandan explained the concepts of ecosystem approach and the benefits that this approach had over the traditional forms of fisheries management. The power point presentation of Dr Vivekanandan’s lecture is given in Annexure 13.

16.0 Dr Shoba Joe Kizhakudan, Senior Scientist from the Chennai Centre of the CMFRI made a presentation on “Information needs and data collection methodology for fisheries management”. In the presentation, Dr Kizhakudan focused on the basic data requirements, survey and sampling procedures and problems in data collection. She also presented a brief overview on fishery dependent data and fishery independent data. Further, Dr Kizhakudan elaborated on important information like spawning season of fish and fecundity that are essential for planning fisheries management. In conclusion she also talked about the limitations of data collection. Annexure 14 contains the power point presentation of the lecture by Dr Kizhakudan.

17.0 The post-lunch session of the day began with the lecture by Dr Md Sharif Uddin, who spoke on “Controlling IUU fishing”. In his presentation, Dr Sharif gave an overview of IUU fishing, the EU regulations on the subject of IUU fishing and also on the need for controlling IUU fishing. The power point presentation of Dr Sharif Uddin’s lecture is given in Annexure 15.
Inter-country groups engaged in preparing the field reports
18.0 In the penultimate presentation of the day, Dr Yadava delivered a lecture on “Understanding participatory management in fisheries”. His talk included concepts such as common property resources, open access and the role of community in sustainable management. Dr Yadava concluded his lecture stating that the success and sustenance of community fisheries is a collective action that depends on a rich interplay of the property rights regime, the attributes of the resources and those of the users. *Annexure 16* contains the power point presentation of Dr Yadava.

19.0 In the last presentation of the day, Ms Ramya Rajagopalan from the International Collective in Support of Fishworkers (ICSF) spoke on “Involving community-based organizations in fisheries management”. Giving an overview of international instruments for fisheries management, she spoke on the role of NGOs and described how NGOs could play an important role in fisheries management. The power point presentation of Ms Rajagopalan’s lecture is given in *Annexure 17*.

20.0 During the pre-lunch session on day four (23 September 2014), the mid-term evaluation was conducted to assess the progress so far. During the post-lunch period, the participants left for field trip to Thiruvananthapuram, located in the southern State of Kerala.

21.0 Day five of the RTC-CCRF (24 September 2014) began with the Seminar on “Role of cooperatives in fisheries management” during the morning session. This was followed by two presentations in the afternoon session. The presentation on “Safety at sea as an integral part of fisheries management” was made by Dr Yadava. He said that safety at sea had to be integrated into fisheries management and not considered separately. The power point presentations from the Seminar and Dr Yadava’s lecture are given as *Annexures 18, 19 & 20*.

22.0 In the last presentation of the day, Dr S Jayaraj, Publication Officer, BOBP-IGO spoke on the “Use of print and electronic media for delivering messages”. He explained the various forms of media and their effective use in communication. He also explained the art and science behind good photography. *Annexures 21, 22 & 23* contain the presentations made by Dr Jayaraj.

23.0 On return from the field trip, the first presentation on 29 September 2014 was delivered by Mr C M Muralidharan, Project Manager, BOBLME Project on “Developing sustainable livelihoods for small-scale fishers”. Mr Muralidharan spoke on the significance of small-scale fisheries (SSF), the FAO’s Voluntary Guidelines on SSF and livelihoods, SSF livelihoods challenges, EAFM approach and sustainable livelihoods, sustainable livelihoods framework and sustainable livelihoods approach to suit coastal livelihoods. The power point presentation of Mr Muralidharan’s lecture is given in *Annexure 24*.

24.0 The last presentation of the day was on “Marine protected areas and fisheries management” by Ms Rajagopalan. Ms Rajagopalan spoke on the history of the concept of MPAs and about the modification of the definition of an MPA over the years. Ms Ramya also talked about the human dimensions of MPAs, including its’ impact on fishery dependent communities. She said that ideally fisheries communities needed to be educated and taken on-board at an earlier stage of the planning of MPAs. The power point presentation of Ms Rajagopalan’s lecture is given in *Annexure 25*.

25.0 The eleventh day of the Sixth RTC-CCRF (30 September 2014) began with a lecture delivered by Mr S Gopikrishna Warrier, Regional Environment Manager, Panos South Asia and Secretary, Forum of Environmental Journalists in India on “Understanding and communicating climate change”. He talked about concepts, approaches, opportunities and challenges of climate changes. The power point presentation of Mr Warrier’s lecture is given in *Annexure 26*.

26.0 The second presentation was made by Mr V Venketasan, former Director of the Marine Products Export Development Authority and now a consultant working on fishing harbor management. He spoke on
Inter-country groups presenting skits on fisheries management issues
the “Basics of managing fishing harbors and landing centers”. Mr Venketasan said that the harbors and fish landing centers play an important role in the fisheries sector and their construction and use needs to be carefully planned and executed. *Annexure 27* contains the presentations by Mr Venketasan.

27.0 In the final lecture of the Sixth RTC-CCRF, Dr Yadava spoke on “Knowledge translation and preparation of policy notes.” Explaining the finer nuances of preparing policy notes and briefs in governmental set-up, Dr Yadava said that the notes should be convincing, with facts and figures to enable the seniors to take a decision. With this presentation, all the lectures stipulated for the Sixth RTC-CCRF were completed. The power point presentation of Dr Yadava’s lecture is given in *Annexure 28*.

**Seminars**

28.0 The first Seminar on “Role of cooperatives in fisheries management” was held in the Meeting Room of Hotel KTDC Samudra on 24 September 2014. The Seminar began with the opening remarks delivered by Dr Yadava and followed by a presentation from Mr X Joseph, Deputy Chief Executive of the South Indian Federation of Fishermen Societies (SIFFS). Mr Joseph presented an overview of the SIFFS and discussed about its activities in details, which included aspects such the role of middlemen, subsidies, registration and licensing or fishing boats, amount and procedures of providing loan to SIFFS members the repayment procedures, fisher women participation in the activities and safety at sea.

29.0 In the next presentation, Mr Vincent Jain, Chief Executive, Association of Deep Sea Going Artisanal Fisher (ADSGAF) spoke on “Evolution and functioning of the Association of Deep Sea Going Artisanal Fishermen” and explained about the objectives, activities and experiences of the Association, the necessity of co-management, and local management initiatives. A knowledge-sharing session was also organized on the issue of co-management.

30.0 On 27 September 2014, the RTC-CCRF team visited Kerala backwaters in Allepey District. During the day-long trip on a house-boat, a Seminar was conducted and Dr VVSugunan, former ADG (ICAR) and former Staff of World Fish Centre at Cairo, Egypt delivered a lecture on the CCRF objectives, principles, approaches and issues for both marine and inland fisheries sectors. Dr Sugunan emphasized on participatory approach rather than on enforcement. He also emphasized on empowerment, awareness raising, institution building and co-management for sustainable fisheries. Following the lecture, a Quiz Competition was held which was very informative and enriched the level of understanding of the trainees.

**Field Trips**

31.0 On 25 September 2014, an extensive field visit was conducted, starting from Muttom Fishing Harbor on the Arabian Sea coast in Kanyakumari District of Tamil Nadu State. At Muttom Harbour, the participants observed India’s largest fishing harbor (under construction) and interacted with the Harbour Authorities and the fishermen. The harbour is being built through a private-public partnership initiative. Demonstrations on use of solar power for GPS, fish finder, signal lighting, etc. in small out board motorized boat were also demonstrated by the ADSGAF. In the post-lunch session, the participants visited Kanyakumari Fish Landing Centre, which is situated at the southern most tip of India’s mainland.

32.0 On 26 September 2014, the participants visited the Central Marine Fisheries Research Institute (CMFRI) in Kochi, Kerala. Dr Grinson George, Senior Scientist, CMFRI made a presentation on the history, activities and achievements of the Institute. The participants also visited the library and the museum of CMFRI, which are prime referral points on marine fisheries in India. Dr A Gopalakrishnan, Director, CMFRI interacted with the participants over a cup of tea.
Inter-country groups preparing the causal analysis
33.0 In the afternoon of 26 September 2014, the participants visited the Central Institute of Fisheries Nautical Engineering and Training (CIFNET) at Kochi and were shown the different types of crafts, gear and engines used along the Indian coast with sample models. Dr R C Sinha, Director of CIFNET briefed about the mandate and objectives of CIFNET. A guided tour of the Institute was also made to show the excellent facilities that the Institute has to train manpower in the field of navigation and other related vocations.

**Participant’s Presentations**

34.0 On 21 September 2014, the participants made brief presentations on the status of fisheries in their country. They also briefly elaborated on the organizational structure of the Fisheries Departments, their scope of work and key issues plaguing the sector in the country.

35.0 On 23 September 2014, before proceeding on the field trip, the participants were divided into inter-country groups to make presentations on their field reports covering the activities carried out during the field visit. The groups were also tasked to prepare a “Skit” on CCRF related issues and present the same on return from the field trip.

36.0 On 29 September 2014, in the morning session the inter-country groups made presentations followed by discussions on their field reports and the activities carried out during the field visits. All the groups also designed a logo for their group.

37.0 During the post-lunch session, the inter-country groups presented a 15-minutes skit on a topic related to the implementation of CCRF. The themes chosen by the six teams (inter-country groups) were: Safety at Sea; Over-Exploitation of Fishery Resources; Need for Training in Fisheries Livelihoods; and Sustainable Fisheries and Fisheries Management. Dr V Sampath, former Advisor in the Department of Ocean Development, Government of India and presently FAO Consultant judged the skits.

38.0 On 01 October 2014, the inter-country groups presented their reports on root cause analysis by carrying out detailed analysis of the topics assigned to them through conceptualization tools and techniques.

39.0 The final presentations from the participants were made on 01 October 2014. This was a pair presentation (from the same country), where each group made a presentation on the topic given to them.

**Fisheries Management Game**

40.0 On 22 September 2014, after the last presentation of the day, a Fisheries Management Game was conducted by Dr K Vijayakumaran. The game focused on the adverse impacts of over-capacity on fisheries resources and all the participants actively participated in understanding the issues and its solutions through the game.

**Concluding Session**

41.0 The final day of the Sixth RTC-CCRF (02 October 2014) saw the programme evaluation and concluding session, which also included award of certificates and prizes. All the 24 participants successfully completed the Course and were awarded with certificates (Annexure 29 shows a sample certificate). Based on the tests conducted at regular interval and also the presentations made by the participants, individually and in groups and extra-curricular and social activities, a total of 27 prizes were distributed in different categories, viz. best academic performances, best case study, best inter-country group, best performance by a pair, best photography, most friendly/popular participant, trainee of the year, etc. Mr Jimmi from Indonesia emerged as the best trainee of the Sixth RTC-CCRF followed by Ms Dinali Ranmadugala from Sri Lanka (Second Prize, Best Academic Performance) and Ms Prathvi Rani from India and Mr Aris Budiarto from Indonesia (Joint Third Prize, Best Academic Performance).
Inter-country groups preparing the causal analysis
42.0 Evaluating the programme, all the participants said that the programme met their learning objectives, viz., learning about CCRF; understanding fisheries issues within national and as well as in international context better, and learning from others. The study material and the delivery mechanism were also evaluated as good and adequate. All the participants said that they would like to recommend the course to their colleagues. While participants mostly found the food and logistical arrangements appropriate, some of the participants suggested that there could be more varieties in the menu. Some of the participants were also of the view that the duration of the programme could be extended by a week or so to allow the participants to better absorb the knowledge.

43.0 The Sixth RTC-CCRF concluded with exchanges of mementoes amongst the participants and between the participants and the faculty.
Sixth Regional Training Course on the Code of Conduct for Responsible Fisheries
20 September – 02 October 2014, Chennai, India

1.0 The Code of Conduct for Responsible Fisheries

The world marine capture fishery is walking a tightrope. On one hand the resources are depleting and on the other hand, there is an increasing demand from the sector to meet nutritional and livelihood security. Striking a balance between these forces needs careful planning and implementation. Formulated in 1995, after years of global consultation, the Code of Conduct for Responsible Fisheries (CCRF) of the Food and Agriculture Organization of United Nations (FAO) is a globally acknowledged document that provides both philosophical and practical guidelines to facilitate transition of a fishery towards sustainable fisheries and maintaining it. The CCRF through a series of technical guidelines (TGs) and International Plan of Actions (IPOA) offers guidance for solving the most pressing fisheries and related environmental problem of our times including conflict resolution for sustainable exploitation of fisheries resources and improvements of fisheries-dependent livelihoods. Although, CCRF is not a legal document, it is closely linked with binding international laws such as the 1982 United Nations Convention on Law of the Sea and the 1992 Convention on Biological Diversity. Hence, adapting CCRF in national setting also meets the commitment of a nation towards such international instruments. However, CCRF as such provides a set of broad guidelines which needs to be interpreted and adapted in the national context. Therefore, it is crucial that there is a clear understanding of the principles of CCRF amongst the fisheries practitioners. Understanding CCRF is a journey itself that empowers the stakeholders to look beyond the traditional management practices and move towards ecosystem based approaches to fisheries management (EAFM).

2.0 The Training Course: Sixth Edition

Introduced in 2008, the Regional Training Course on the CCRF (RTC-CCRF) is one-of-its-kind training programme for junior and middle-level fisheries and environmental practitioners to develop basic skills in understanding CCRF and applying them for conflict resolution and improving resilience of the fisheries system within their jurisdiction. The Training Course was initiated to meet the training and capacity building needs of fisheries personnel in the member-countries of the Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO) and the Bay of Bengal Large Marine Ecosystem Project (BOBLME) in particular and developing countries with similar fisheries settings in general. So far, 92 officers from member-countries of the BOBP-IGO and BOBLME, viz., Bangladesh, India, Indonesia, Maldives, Myanmar and Sri Lanka have successfully completed the training course.

The broad objectives of the RTC-CCRF are:
• To enhance understanding of the implication of Responsible Fisheries to secure livelihoods and fishery resources;
• To develop practical skills of fisheries practitioners to articulate implications of responsible fisheries in their settings; and
• To enhance understanding of multidimensional governance issues and effectively communicating them within the system.

The Course is strategically placed as a refresher and skill building course to elevate officials who have basic familiarity with the governance issues to engage in effective consultation with the stakeholders and system as a whole with scientific insights and novel thinking.

In addition, the RTC-CCRF provides an international exposure to fisheries practitioners and hands-on experience in analyzing complex fisheries problems. The Training Course has also been instrumental in building rapport among the fisheries practitioners of the member-countries and encouraging them to exchange ideas and experiences regarding fisheries management.

3.0 Organizers

BOBP-IGO

The BOBP-IGO (www.bobpigo.org) is a leading regional fisheries body instrumental in fisheries development in the Bay of Bengal Region for the last 33 years. Bangladesh, India, Maldives and Sri Lanka are the member-countries of the Organisation.

BOBLME

The BOBLME Project (www.boblme.org) aims to improve the lives of the coastal populations through better regional management of the Bay of Bengal environment and its fisheries. The Project is implemented and executed by the FAO. Bangladesh, India, Indonesia, Malaysia, Maldives, Myanmar, Sri Lanka and Thailand are participating in the Project.

4.0 Participation

Participants of the RTC-CCRF shall comprise junior and middle-level officers of the Ministries/Departments of Fisheries and concerned agencies (such as the Ministry of Environment) of each of the member-countries of BOBP-IGO and BOBLME (limited to four from each member-country; maximum 24 participants). In addition, it is also proposed to provide four (4) additional seats to participants from other developing countries within and outside the region on organizational sponsorship basis.

Date & venue

The RTC-CCRF will be organized from 20 September-02 October 2014 (excluding journey period).

Requirements for participation:
• For BOBP-IGO and BOBLME Member-Countries (Bangladesh, India, Maldives, Sri Lanka): The concerned Ministry/Department in each member-country may identify and nominate four (04) participants and forward their nominations to BOBP-IGO with copies of their résumé and passport. The BOBP-IGO will provide full sponsorship for their participation. This will include air/train ticket (economy class, shortest route) from the place of duty to Chennai and back; in-country travels in India during the Training Course;
lodging (on twin-shared basis); meals limited to breakfast and working lunch; and course material. Besides, a lump sum allowance of US $ four hundred only (US $ 400 only) will be given to each participant for their visa fee and sundry expenses (not included above).

• For other BOBLME Member-Countries (Myanmar, Indonesia, Malaysia and Thailand): The concerned Ministry/Department in each member-country may identify and nominate four (04) participants and forward their nominations to the BOBLME Secretariat with copies of their résumé and passport. The BOBLME will provide full sponsorship for their participation. This will include airtrain ticket (economy class, shortest route) from the place of duty to Chennai and back; in-country travels in India during the Training Course; lodging (on twin-shared basis); meals limited to breakfast and working lunch; and course material. Besides, a lump sum allowance of US $ four hundred only (US $ 400 only) will be given to each participant for their visa fee and sundry expenses (not included above).

• The Member-Countries, Other Countries and Organizations can also nominate participants on Full-Cost Recovery basis with copies of their résumé and passport to BOBP-IGO. Additional 04 seats will be available for self-sponsored participants. The course fee is US$ Three thousand (US $ 3 000) only per participant. The course fee shall cover only in-country travels in India during the Training Course; lodging (on twin-shared basis); meals limited to breakfast and working lunch; lump-sum allowance for sundry expenses of US$ four hundred (US $ 400) and course material. All other travel and related expenses shall be borne by their nominating organizations.

Common requirements for all candidates

• Minimum three (3) years of experience in the fisheries sector;
• Working knowledge in English (reading, writing and taking part conversations);
• A Letter of Motivation explaining reasons for joining the course and learning expectations;
• A Personal History (CV) containing working experience, educational background, hobbies and other skills and a recent digital image (not scanned);
• A Case Study relating to his/her work settings defining the environment in general and concerned issues;
• Participants should be physically fit to undertake extensive field visits; and

Participants are encouraged to bring their own laptops.

All the documents should be submitted in electronic format to info@bobpigo.org.

Insurance

The BOBP-IGO shall not be responsible for covering any cost or any unforeseen incidence during the Training Course. All participants are advised to ensure that they are fully covered by travel and medical insurance before joining the course at their own cost.

5.0 Course Outline and Training Methodology

The RTC-CCRF will be conducted in English. The course material shall include copies of the CCRF (and its concise version), TGs and IPOAs and lecture notes. Copies of the CCRF, its concise version, TGs and IPOAs translated by the BOBP-IGO in the languages spoken in the member-countries shall also be made available to the participants. Besides the above, other relevant documents (in print or in electronic format) shall also be provided as course material.

Module I: State of marine fisheries in the Bay of Bengal Region

• Ecological status of the Bay of Bengal region
• Regional initiatives in sustainable management of the fisheries resources of the Bay of Bengal
• Climate change

Module II: Understanding CCRF and approaches towards its implementation

• Overview of the CCRF, its TGs and the IPOAs
• Issues and conflicts in fisheries management system
• Tools and approaches (EAFM) for implementation

Module III: Adapting CCRF in professional practices

• Method of interaction with stakeholder (hands-on training)
• Causal analysis and development of policy inputs
• Preparation of case studies
• Reporting and preparation of policy notes

The delivery mechanism will include lectures, group discussion, personal and group assignments, plenary sessions, field visits and personal evaluation.

Interactive presentations and lectures:

Lectures are systematically followed by Q & A and discussion sessions. In the concluding stages of the Training Course, participants will engage in a Panel Discussion with invited panelists (leading experts).

Study tours

Study tours will be organized to allow participants to observe functioning of fishers and their organizations and to engage in interactive sessions with them. Study tour will also include visits to reputed fisheries and other institutions to see the latest developments in fisheries and environmental sciences. The participants will need to prepare a report based on the study tours.

Practical exercises

Practical exercises include case-study analysis in inter-country and intra-country groups, formulation of model work/action plans in in-country teams, personal report writing and tests/evaluations. Teams will be given specific time to formulate work plans on one aspect of the CCRF applicable to their country/workplace and then present their findings in the plenary. Case studies submitted by the participants shall be presented during the Training Course.

Language and communication

The RTC-CCRF will be conducted in English. The course material shall include copies of the CCRF (and its concise version), TGs and IPOAs and lecture notes. Copies of the CCRF, its concise version, TGs and IPOAs translated by the BOBP-IGO in the languages spoken in the member-countries shall also be made available to the participants. Besides the above, other relevant documents (in print or in electronic format) shall also be provided as course material.

6.0 Certification

The Participants will be awarded a ‘Certificate of Participation’. Awards will be given to outstanding candidates.

7.0 Coordination

For any further information, please contact:

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Bay of Bengal Programme
Inter-Governmental Organisation
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Tel: +91- 44- 24936188; Fax: +91- 44- 24936102
Email: yugraj.yadava@bobpigo.org; info@bobpigo.org

23
## Sixth Regional Training Course on Code of Conduct for Responsible Fisheries

**19 September - 03 October 2014, Chennai, India**

### Time-Table

<table>
<thead>
<tr>
<th>Time/Date/Day</th>
<th>19/Sep</th>
<th>20/Sep</th>
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<tr>
<td>1000-1030</td>
<td>Keynote address: Regional initiative in managing shared and common resources (KV)</td>
<td>Presentations of case studies (@8 mins per participants)</td>
<td>Ecosystem approach to fisheries management (EV)</td>
<td>Information need and data collection methodology for fisheries management (SJK)</td>
<td>Wrap-Up (Group formation &amp; primer on preparation of field reports)</td>
<td>Safety at Sea as an integral part of fisheries management (YSY)</td>
<td>Field Visit I (0700-2130 hrs)</td>
<td>Field Visit II (0800-1200)</td>
<td>Field Visit III (1400-1600 hrs)</td>
<td>Field Visit IV (1400-2200 hrs)</td>
<td>Marine protected areas and fisheries management (RR)</td>
<td>Preparation of Field Reports</td>
<td>Understanding climate change (GW)</td>
<td>Group Task</td>
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<tr>
<td>1100-1130</td>
<td>Special address: The shared nature of the Bay of Bengal (EV)</td>
<td>Keynote address: Regional initiative in managing shared and common resources (KV)</td>
<td>Presentations of case studies (@8 mins per participants)</td>
<td>Ecosystem approach to fisheries management (EV)</td>
<td>Information need and data collection methodology for fisheries management (SJK)</td>
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<td>Marine protected areas and fisheries management (RR)</td>
<td>Preparation of Field Reports</td>
<td>Understanding climate change (GW)</td>
<td>Group Task</td>
</tr>
<tr>
<td>1230-1400</td>
<td>Arrival of the Participants</td>
<td>Lunch</td>
<td>Lunch</td>
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<tr>
<td>1400-1430</td>
<td>Test I</td>
<td>Discussion on selected case studies</td>
<td>Controlling IUU fishing (MSU)</td>
<td>Safety at Sea as an integral part of fisheries management (YSY)</td>
<td>Field Visit I (0700-2130 hrs)</td>
<td>Field Visit II (0800-1200)</td>
<td>Field Visit III (1400-1600 hrs)</td>
<td>Field Visit IV (1400-2200 hrs)</td>
<td>Marine protected areas and fisheries management (RR)</td>
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<td>Field Visit IV (1400-2200 hrs)</td>
<td>Field Visit IV (1400-2200 hrs)</td>
<td>Field Visit IV (1400-2200 hrs)</td>
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</table>

**Faculty:** E Vivekanan (EV); Gopi Warrior (GW); K Vijayakumaran (KV); Md Sharif Uddin (MSU); Rajdeep Mukherjee (RM); Ramya Rajagopalan (RR); S Jayaraj (SJ); SJ Kizhakudan (SJK); V Vivekanandan (VV); V Venkatesan (VV); VV Sugunan (VVS) and Yugraj Singh Yadava (YSY)
### List of Participants

#### Bangladesh

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Department/Office</th>
<th>Address</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Md Sayfur Rahman</td>
<td>Senior Upazila Fisheries Officer</td>
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<tr>
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</tr>
<tr>
<td>S M Sajjad Uddin</td>
<td>Inspector</td>
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<td>Tel: +880 31721731, Mobile: +880 1716265709, Fax: +880 312518149, Email: <a href="mailto:sajjaddof@gmail.com">sajjaddof@gmail.com</a></td>
</tr>
</tbody>
</table>

#### India

<table>
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<th>Name</th>
<th>Position</th>
<th>Department/Office</th>
<th>Address</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piyal Sardar</td>
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The Bay of Bengal Programme

Inter-Governmental Organisation

The Inter-Governmental Organisation (IGO) was evolved from the FAO Bay of Bengal Programme realizing:

- Importance of marine fisheries;
- High dependency on fisheries;
- Shared nature of resources and problems; and
- Need for cooperation in science and technology.

Institutionalization

The BOBP-IGO Agreement was formally signed by the Governments of Bangladesh, India and Sri Lanka at Chennai on 26 April 2003 and by the Government of Maldives at Chennai on 21 May 2003.

Organizational structure

- Governing Council
- Technical Advisory Committee
- Secretariat
- Director
- Management Support Services
- Resource Management Services
- Information & Communication Services
- Policy & Programme Development Services

The BOBP-IGO strives to... to promote and establish responsible fisheries in a time bound manner to ensure socio-economic well-being of the marine fishers and ecological security of fisheries resources in the Bay of Bengal while catalyzing the growth of the sector to substantiate economic development of the member-countries.

Strategic Action Plan 2010-2014

- Improving Monitoring, Control and Surveillance (MCS) of fishery resources in the member-countries including formulation of management plans for commercially/ biologically important fish stocks in the region.
- Safety at Sea for Artisanal and Small-Scale Fishermen.
- Taking the Code of Conduct for Responsible Fisheries to the grassroots level.
- Improving health and hygiene in fisheries.
- Adapting to climate change.
- Livelihoods enhancement for fishers.
IGO’s approach is to advocate enabling policies and build effective capacities to address the issues...

**Recent Activities**

**Activities on policy space: Strategizing small-scale fisheries development, fisheries plans and critical ecosystems**

- National Strategic Workshop on Governance of Marine Small-Scale Fisheries – Developing Agenda 2020
  - Bangladesh/
  - Sri Lanka/ India

  - Preparation of Management Plans for Sharks and Hilsa Fishery
    - Constitution of a Hilsa Committee by DANIDA, India
    - Joint studies with BOBLME in Veraval and Thoothoor, India on shark fishery.
    - Stakeholder consultations in India & Sri Lanka.

  - BOBLME+BOBP and IUCN/MFF+BOBP Bi-National programmes on Gulf of Mannar.

**Ensuring well-being of fishers – promoting social security**

- Introduction of Group Insurance Scheme (GIS) in Bangladesh on 18th October 2012
  - BOBP successfully brought together Jiban Bima Corporation and Ministry/Department of Fisheries, Bangladesh to launch a GIS for fishers.
  - The process started in 2008 with launching of Global Safety at Sea Programme.

  Over 0.5 million families will be benefitted

**Greening the fisheries sector – a new initiative**

Thank you!
Regional initiatives in management of shared and common resources—Examining reality and exploring possibilities

K Vijayakumaran
Madras Research Centre of CMFRI
Chennai

Objective
To provide an understanding of the ground truths of transboundary resource management

I stand for
Justice and equality

My biases
Pro-fishermen, Pro-developing coastal states

Law and justice are not always the same
—Gloria Steinem

Structure
Understanding geopolitics of fish
RFMOs their approaches
Limits to science
Drivers and invisible hands
The denominator of injustice
The (hidden) Agendas

A definition of transboundary stocks (Covering straddling and highly migratory (but not discrete high seas) stocks)

...a group of commercially exploitable organisms, distributed over, or migrating across, the maritime boundary between two or more national jurisdictions, or the maritime boundary of a national jurisdiction and the adjacent high seas, whose exploitation can only be managed effectively by cooperation between the States concerned...

Modified from John Caddy (1997)

No one can make you feel inferior without your consent.
—Eleanor Roosevelt

Annexure 5
Why do fish occur in certain places?

The temperature (°C) range in which some commercially important species prefer to live.

Coastal Tunas

Species | Distribution Range | Fishing range
--- | --- | ---
Cod | 1-5 | 2-4
Pollack | 0-8 | 2-5
Halibut | 2-5 | 3-4
Herring | 3-11 | 4-7
Salmon | 4-11 | 6-8
Sardine | 5-25 | 12-16
Squid | 10-18 | 12-16
Pacific mackerel | 12-18 | 14-16
Bluefin tuna | 14-21 | 15-21
Bonito | 12-25 | 15-22
Albacore | 16-21 | 15-21
Bigeye tuna | 11-28 | 18-22
Swordfish | 13-27 | 19-22
Skipjack | 17-28 | 19-23
Little tuna | 17-28 | 18-23
Yellowfin | 17-31 | 18-23

Is Indian mackerel a shared stock?

Is Hilsa a shared stock?
**RFMOs - Structure & Functions**

**Area of competence**

**Mandated species**

**Members**
Cooperating non-contracting parties

**Observers (Third parties)**

**Scientific committee**

**Compliance committee**

Session

---

The seemingly neutral and scientific tools of macro-economic policy constitute a nonviolent instrument of recolonisation and impoverishment.

-Michel Chossudovsky

---

**Approaches to allocation in tuna RFMOs**

- Agreement on an allocation process has often been a long process, in search of an equitable allocation for parties that often benefit from the resources of others.

- Situations are not comparable in all respects; some works for one RFMO might not work for another. Solutions are dependent on the membership and conditions of each ocean, although there is a common theme.

---

**Commission for the Conservation of Bluefin Tuna (CCSBT)**

- No particular procedure adopted yet, has agreed to start discussion on quota allocation rules which may be used from 2015.

- Convention establish some principles in Article 8.4.

---

**Overview: the management process**

Establish a limit to the fishing activities so that sustainability in the utilization of the resource is not compromised.

The allocation question needs to be addressed next: who should be allowed to participate in the fishery?, and what are the fishing opportunities to be assigned to each of the participants?

How do each of the other four tuna RFMOs (CCSBT, IATTC, ICCAT and WCPFC) tackled this?

---

**CCSBT Convention: Art 8.4**

(a) relevant scientific advice;
(b) the need for orderly and sustainable development of SBT fisheries;
(c) the interests of Parties through whose exclusive economic or fishery zones SBT migrates;
(d) the interests of Parties whose vessels engage in fishing for SBT including those which have historically engaged in such fishing and those which have SBT fisheries under development;
(e) the contribution of each Party to conservation and enhancement of, and adherence to, SBT;
(f) any other factors which the Commission deems appropriate.
International Commission for the Conservation of Atlantic Tuna (ICCAT)

- No formal procedure, quotas are negotiated for a three-year period for each stock.
- To be renegotiated after the 3-year period. Allocations are not tradable, and they should be utilised.
- Adopted in 2001, a set of principles to guide the negotiations.

ICCAT Criteria (see Appendix 1)

- Access only to EEZs
- Historical catches and current fishing patterns
- Stock status: Condition of the stock, including geographic distribution.
- Status of participants: needs of coastal states and developing states, and their communities. Dependency on fisheries.
- Compliance/Data/Research
- Rules of use: No trading; application of allocation should be equitable and gradual.

Inter-American Tropical Tuna Commission (IATTC)

- No allocation is conducted. A global quota is adopted, and a date of closure is determined by the Secretariat based on catch reports.
- An attempt to establish an allocation process for coastal waters, combined with a regional licensing scheme, failed in the 1970s.
- In recent years, emphasis on closures as management tools.

Western and Central Pacific Fishery Commission (WCPFC)

- No formal allocation is conducted.
- Convention incorporates guidelines for allocation (Art 10(3)).
- A Vessel Days Scheme, implemented by a number of countries to constrain purse seine effort in their EEZs, is now to be extended to other fisheries.

WCPFC Convention: Article 10(3) allocation guidelines:

(a) the status of the stocks and the existing level of fishing effort in the fishery;
(b) fishing patterns and fishing practices; domestic consumption;
(c) the historical catch in an area;
(d) the needs of small island developing States;
(e) provision of accurate data and scientific research;
(f) the record of compliance by the participants;
(g) the needs of coastal fishing communities;
(h);(i);(j);situation, geographical locations and needs and aspirations of coastal States.

Choice of approach

Research Agenda
There is nothing worse than a sharp image of a fuzzy concept

Ansel Adams

The Drivers and Players

Knowledge without justice ought to be called cunning rather than wisdom

- Plato

Tsukiji: The world’s largest fish market

Turnover: 660,000 t year^{-1}
Sales: $15 million day^{-1}, >$4 billion year^{-1}

Atlantic Bluefin Tuna

A single bluefin sold for $172,400 at the first auction of 2001 at Tokyo’s Tsukiji Fish Market

Thanks to 4 decades of overfishing, it has been driven to just 3% of its 1960 or pre-longlining abundance - a decline of 97%
Bluefin tuna sells for record $1.76 million in Tokyo

A bluefin tuna sold for a record $1.76 million at a Tokyo auction Saturday, nearly three times the previous high set last year. In the year's first auction at Tokyo's sprawling Tsukiji fish market, a 222 kilogram (489 pound) tuna caught off north-eastern Japan sold for 155.4 million yen, said Ryoji Yagi, a market official.

Patagonian Toothfish

A dream fish for poaching

Marketed as Chilean Sea Bass the fish is perfect candidate for the sophisticated fish eater

The way you cut your meat reflects the way you live

Confucius

The largest fishing vessel of the World

Atlantic Dawn

LOA: 145 m, Cost: $50 million, Process capacity: 400 t p.d, Frozen storage: 7000 t

LONGLINERS OF FSI

Yellow Fin Longliner

LOA: 56 m, GRT: 390

Mattea Gujarat

LOA: 27.5 m, GRT: 468

The World of Factory Vessels

The largest fishing vessel of the World

Atlantic Dawn

LOA: 145 m, Cost: $50 million, Process capacity: 400 t p.d, Frozen storage: 7000 t

LONGLINERS OF FSI

Yellow Fin Longliner

LOA: 56 m, GRT: 390

Mattea Gujarat

LOA: 27.5 m, GRT: 468
Entitlement of global commons

Orwellian principle?
Lack of Economic Institutions?
Silence of the lambs!
Legal traps – Neo-colonial agenda!

The Innocent Frauds!!!

I think that God in creating man somewhat overestimated his ability.

— Oscar Wilde.

mare liberum

- Santa Catharina Incident (1603), Dutch seized off Singapore a Portuguese galleon laden with wares from China and Japan
- Dutch East India Company commissioned 21 y/o lawyer Hugo Grotius to prepare a legal opinion in defence of the capture and sale of the galleon mare liberum (1609) freedom of the seas:
No ocean can be the property of a nation because it is impossible for any nation to take it into possession by occupation (contrary to the laws of nature)

Maritime Zones

EEZ of selected countries

(1000 sq km)

<table>
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<tr>
<th></th>
<th>Mainland</th>
<th>Overseas territories</th>
<th>Overseas as a % of total EEZ</th>
<th>Total</th>
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<td>USA</td>
<td>2450</td>
<td>9786</td>
<td>80</td>
<td>12236</td>
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<td>France</td>
<td>335</td>
<td>10700</td>
<td>97</td>
<td>11035</td>
</tr>
<tr>
<td>Australia</td>
<td>6633</td>
<td>2611</td>
<td>29</td>
<td>8974</td>
</tr>
<tr>
<td>Russia</td>
<td>1400</td>
<td>6696</td>
<td>83</td>
<td>8096</td>
</tr>
<tr>
<td>U K</td>
<td>774</td>
<td>6031</td>
<td>89</td>
<td>6805</td>
</tr>
<tr>
<td>New Zealand</td>
<td>3423</td>
<td>3273</td>
<td>49</td>
<td>6696</td>
</tr>
</tbody>
</table>

Adapted from: Peter Nolan, 2013
Allocation of Surplus

Art 62(1) imposes on coastal States the obligation of optimum utilisation of living resources in the EEZ. Reflects concern of DUNPs in the 1970s that coastal States would drastically limit utilisation of the resources newly enclosed in their fishing zones (in 1990 only about 11% of all fishing was outside EEZ). Where a coastal State does not have the capacity to harvest the entire TAC, it is required to give other States access to the surplus of the TAC. Art. 62(2).
- Access fees: - LOSC art 62(4)
Terms and conditions including: “licensing of fishermen, fishing vessels and equipment, including payment of fees and other forms of remuneration, which, in the case of developing coastal States, may consist of adequate compensation in the field of financing, equipment and technology relating to the fishing industry.”

Cases

Piracy has made fishing difficult off Somalia

Sri Lankan tuna fishing vessels caught engaged in illegal fishing in BIOT

How Hong Kong became a British Colony?

You just give me the word, I’ll turn that fucking little island into a parking lot
-JI Hag, American Secretary of State

The Charismatic Species!

Interesting Readings


Thank you and have a Good Day!

Comments Clarifications?

vijayettan@yahoo.com
Shared nature of fisheries resources of Bay of Bengal

E. Vivekanandhan
Central Marine Fisheries Research Institute
Chennai

Structure of Presentation
• Characteristics of Bay of Bengal
• Shared stocks
• Sub-regional fisheries complexes
• Issues and challenges
• Potential cooperation and management

Physical characteristics of Bay of Bengal
• Landlocked on 3 sides
• Broad opening in south
• Sea area: 6.2 m km²
• Combined coastal length: 14,000 km
• Maximum depth: 4694 m
• Mean depth: 2600 m

Characteristics of Bay of Bengal
✓ Numerous rivers
✓ Large brackishwater lakes
✓ Heavy monsoon rains
✓ Destructive cyclones
✓ Unique ecosystems
  - Sunderbans
  - Mangroves
  - Corals
  - Seagrass
✓ Rich biodiversity

National boundaries
• Eight contiguous countries
• Overlapping EEZ

Characteristics of Bay of Bengal
✓ Dense human settlements
✓ Over 400 million people depend on resources
✓ Increasing landuse
- Huge fishing fleet
  ~ 50,000 mechanized
  ~ 350,000 other boats
- Number of fishers: 2.2 m
- Marine fish catch: > 6 million tonnes (7% of global catch)
- Value: 4 billion US$

Shared ecosystems
Fishing by one country affects the availability of stocks in another.

Shared Stocks

1. Transboundary Stocks: fish resources crossing the EEZ boundary of one coastal State into another one, or more
   (i) occurring within two or more EEZs, but showing no clear migratory pattern
   (ii) occurring within two or more EEZs, and displaying a clear pattern of movement

2. Straddling Stocks
   Distributed over, or migrating across, the maritime boundary between two or more national jurisdictions, or the maritime boundary of a national jurisdiction and the adjacent high seas.
   Exploitation can only be managed effectively by cooperation between the countries concerned (perches, trevallies and other carangids)

3. High Seas Stocks: fish stocks found exclusively in high seas (oceanic sharks; tunas; oceanic squids)

   - Fish distribution overlaps
     - A few stocks among all countries (mackerel, threadfin breams, large pelagics)
     - a few hundred species/stocks common to any 2 or 3 contiguous countries (anchovies, scads, hilsa shad)
Examples of shared stocks (source: BOBLME)

<table>
<thead>
<tr>
<th>Species</th>
<th>No. of countries</th>
<th>Species</th>
<th>No. of countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hilsa</td>
<td>7</td>
<td>Indian pellona</td>
<td>7</td>
</tr>
<tr>
<td>Small tunas</td>
<td>7</td>
<td>Lesser sardines</td>
<td>7</td>
</tr>
<tr>
<td>Short mackerel</td>
<td>4</td>
<td>Indian scad</td>
<td>8</td>
</tr>
<tr>
<td>Indian mackerel</td>
<td>5</td>
<td>Indian halibut</td>
<td>2</td>
</tr>
<tr>
<td>Seerfishes</td>
<td>3</td>
<td>Threadfin breams</td>
<td>5</td>
</tr>
<tr>
<td>Oil sardine</td>
<td>2</td>
<td>Bombayduck</td>
<td>3</td>
</tr>
<tr>
<td>Bali sardine</td>
<td>3</td>
<td>Black pomfret</td>
<td>4</td>
</tr>
<tr>
<td>Rainbow sardine</td>
<td>8</td>
<td>Catfishes</td>
<td>7</td>
</tr>
<tr>
<td>Sciaenids</td>
<td>5</td>
<td>Ribbonfishes</td>
<td>4</td>
</tr>
</tbody>
</table>

- Migratory species have wide distribution
- Larvae of sedentary or locally mobile species get drifted: distribution with transboundary dimension.

Sub-regions

- However, fish distribution and concentration driven by ecosystem structure and function
- Need for recognizing sub-regions for managing resources

Sub-regional fisheries complexes

<table>
<thead>
<tr>
<th>Code</th>
<th>Sub-regional Fisheries Complex</th>
<th>Concerned countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Western BoB Oceanic Complex</td>
<td>Maldives - Sri Lanka - India</td>
</tr>
<tr>
<td>2</td>
<td>Gulf of Mannar Complex</td>
<td>Sri Lanka - India</td>
</tr>
<tr>
<td>3</td>
<td>Sunderbans Complex</td>
<td>India - Bangladesh - Myanmar</td>
</tr>
<tr>
<td>4</td>
<td>Middle-east BoB Complex</td>
<td>Bangladesh - Myanmar</td>
</tr>
<tr>
<td>5</td>
<td>Malacca Strait Complex</td>
<td>Myanmar - Thailand - Malaysia - Indonesia</td>
</tr>
<tr>
<td>6</td>
<td>Western Andaman Sea Complex</td>
<td>India - Thailand - Malaysia - Indonesia</td>
</tr>
<tr>
<td>7</td>
<td>Eastern BoB Oceanic Complex</td>
<td>India - Sri Lanka - Myanmar - Thailand - Malaysia - Indonesia</td>
</tr>
</tbody>
</table>

Endangered, threatened and protected species

- Many are migratory (whale shark, sea turtles, marine mammals, sea birds)
  - protection by one or two countries alone will not produce desired results
Bycatch of ETP species

• Another concern is fisheries interaction of these species as bycatch in fishing gear
  - Amount of kills to be assessed
  - common methodology
  - share information & evolve ways to reduce kills

Issues and challenges of managing shared stocks

• Fishing in one country will affect recruitment to the fishery of another country.
• Intensive fishing on the same stocks by many countries, as it happens now, will cause stock collapse in the region
• Habitat degradation and pollution
• What are the shared stocks of the region? Poor statistical information
• Taxonomic inconsistencies between countries

Regional Cooperation for Shared Stock Management

• Primary level consists of cooperation in research alone, without reference to coordinated management programmes.
• The secondary level involves establishment of coordinated joint management programmes.

Potential joint management

I. Description of fishery
II. Objectives of management,
III. Measures to achieve objectives
IV. Indicators and reference points to measure performance
V. Decision on how to change management, if necessary
VI. Information needs and research required to support management.

Potential joint management

• Identifying the sub-regional fisheries complexes
• Identifying transboundary, straddling and high seas fish stocks
• Estimating Potential Yield and Optimum Capacity
• Identifying ETP species
• Advising best methods for implementation of joint management plans.
Potential outcome

- Avoid over-exploitation of shared stocks, while increasing benefits
- Extension of Marine Protected Areas across borders of the countries
- Being a single entity, this will lead to a bay-wide ecosystem approach.

THANK YOU
The Technical Guidelines (TGs)

- The TGs provide more specific technical details and guidance on the articles of the CCRF.
- TGs are intended to assist fisheries professionals in understanding the technical aspects of the articles of the CCRF.
- Some of the TGs address specific articles of the CCRF while others cover specific environments or issues.

The Technical Guidelines- Overview

- So far there are 13 Technical Guidelines (TGs) plus supplements to some of these TGs (Totaling 27 documents).
- Some of the TGs address specific articles of the CCRF while others cover specific aspects or issues.

The Technical Guidelines and their Supplements

<table>
<thead>
<tr>
<th>Year</th>
<th>Related Technical Guidelines and their supplements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>Fishing operations (TG 1)</td>
</tr>
<tr>
<td>1998</td>
<td>Vessel Monitoring System (TG 1 Supp 1)</td>
</tr>
<tr>
<td>2000</td>
<td>Conservation and Management of Sharks (TG 4 Supp 1)</td>
</tr>
<tr>
<td>2003</td>
<td>The ecosystem approach to fisheries (TG 4 Supp 2)</td>
</tr>
<tr>
<td>2008</td>
<td>Managing fishing capacity (TG 4 Supp 3)</td>
</tr>
<tr>
<td>2011</td>
<td>Marine protected areas and fisheries (TG 4 Supp 4)</td>
</tr>
</tbody>
</table>

The Framework of CCRF and its Technical Guidelines

|-----------------------------------|----------------------------------|--------------------------|
### Understanding the TGs...

Contrary to the sheer size and innumerable jargons…TGs are practical guide to address problems.

The first step towards understanding the TGs is to differentiate problems from symptoms.

---

### Introducing TG - I: Fishing Operations

The TG-I include guidelines on

(i) all States engaged in fishing;
(ii) flag states;
(iii) port states;
(iv) fisheries protection;
(v) fishing activities; and
(vi) design, construction and modification of landing places for fishing vessels, etc.

---

### TG-1 suggests...

- Effective MCS with active participation from the stakeholders
- Education, training and certification on crew members and respective officials
- Taking sea safety measures
- Positioning of required infrastructure.
TG-2: Precautionary approach

- The precautionary approach involves the application of prudent foresight. It takes into account the uncertainties in fisheries systems and the need to take action with incomplete knowledge.
- TG-2 calls for setting up of a responsible authority and clear-cut norms for fishing operations. In the subsequent steps, management objective and guidelines can be developed and adopted.

TG-3: Integration of Fisheries into Coastal Area Management

Usually refers to the process of resource management in the interface between the sea and the land.

Problems
- Limited resources-unlimited wants
- Mutual dependency of economic activities
- Habitat pollution from land-based sources and vice versa
- Nursery ground.

ICM
- Take a holistic view- rationalize resource use
- Make enabling institutions - Defining and distribute responsibilities
- Give legislative support
- Bring stakeholders

TG-4: Fisheries Management

- Provide an introduction to the activities encompassed by fisheries management;
- Explains the major constraints experienced in fisheries and fisheries management;
- Emphasis on the range of data required for informed decision-making;
- Discusses the range of possible management actions, such as, gear restrictions, direct catch limitation or effort limitation.
- Examines the management process: process of agreeing on a management plan for a fishery, periodic review of management plans is stressed.

TG-6: FAO Technical Guidelines for Responsible Fish Utilization

The industry that produces fish for food has three major areas of responsibility:
- to the consumer of the food to ensure that it is safe to eat, is of expected quality and nutritional value
- to the resource to ensure that it is not wasted
- to the environment to ensure that negative impacts are minimized.

This TG provides annotation to and guidance on these articles to assist those charged with implementation of the Code to identify possible courses of action necessary to ensure that the industry is conducted in a sustainable manner.

TG-7: FAO Technical Guidelines for Responsible Fish Utilization

The industry that produces fish for food has three major areas of responsibility:
- to the consumer of the food to ensure that it is safe to eat, is of expected quality and nutritional value
- to the resource to ensure that it is not wasted
- to the environment to ensure that negative impacts are minimized.

This TG provides annotation to and guidance on these articles to assist those charged with implementation of the Code to identify possible courses of action necessary to ensure that the industry is conducted in a sustainable manner.

TG-8: Indicators for Sustainable Development of Marine Capture Fisheries

- The guidelines provide general information on the issues of sustainable development of fisheries.
- Also provide information on the type of indicators and related reference points needed.
- Highlight the various frameworks that have been identified and can be used to organize the indicators and reference points, reflecting the objectives, constraints and state of the different elements of the system in a coherent picture.

TG-8: Indicators for Sustainable Development of Marine Capture Fisheries

- Outline the process to be followed, at national or regional level, to establish a Sustainable Development Reference System (SDRS) at sub-national, national, or regional level, focusing on the design of the SDRS, its development and its implementation, including its testing.
TG-9: Implementation of the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing

- It is intended (1) to help familiarize FAO Members and others with the tools; (2) to suggest which tools to use in particular circumstances; and (3) to provide guidance on how to use the tools effectively.

TG-10: Increasing the contribution of small-scale fisheries to poverty alleviation and food security

- Provide a focus on small-scale fisheries and their current and potential role in contributing to poverty alleviation and food security;
- Explores ways through which the contribution of small-scale fisheries to poverty alleviation and food security could be enhanced;
- A vision for the future of small-scale fisheries is presented as a goal towards which the sub sector should develop.

Applying TGs: Data

**Existing/ Traditional**
- More investment on biological aspect;
- Information recorded in various sources;
- Concern with knowledge;
- No or little regional cooperation;
- Emphasis on proof.

**Suggested/ Code**
- Acknowledge importance of techno-economic data;
- Coordinated approach to record data;
- Concern with knowledge and knowledge gaps;
- Calls for regional coordination;
- Calls for foresight-the what-if analysis

Applying TGs: Policy making

**Existing/ Traditional**
- Focus on growth;
- No stakeholder involvement;
- Based on available information;
- Incentive blocking;
- Isolation of fishery from other activities.

**Suggested/ Code**
- Focus on sustainability;
- Stakeholder involvement;
- Based on prudence, information and information gaps;
- Incentive adjusting;
- ICM/ ecosystem approach

Thank you!
Fisheries management is challenged with a range of issues and conflicts. CCRF emphasizes on addressing these challenges.

### Issues vs Conflicts

**Issue**
- Poor system
- Bad technology

**Conflict**
- Ideals
- Interest

**Challenge**
- Solve
- Resolve

### Roots of conflicts

- Socially Desirable Outcome
- Multiple stakeholders
- Multiple uses

### Conflicts

- **Within the sector**
- **With other sectors**

**Fight over RIGHTS: the Conflict between artisanal and semi-industrial fishermen**

Rajdeep Mukherjee
rmukherjee@bobpigo.org
Conflict with other resource users – to whom does the coastal and marine zones belong?

Typology of fisheries conflicts in tropical waters

<table>
<thead>
<tr>
<th>Type I: Who controls the Fishery</th>
<th>Type II: How the fishery is controlled</th>
<th>Type III: Relations between fishery users</th>
<th>Type IV: Relations between fishers and other users of the aquatic environment</th>
<th>Type V: Relationship between fishers and non-fishery issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g. Access issues</td>
<td>e.g. Enforcement issues, quota allocation issues, co-management issues</td>
<td>e.g. Issues between different groups (linguistic, religious, ethnic) issues between different scales of users (artisanal, semi-industrial)</td>
<td>e.g. Issues with tourism, conservation and industrial development</td>
<td>e.g. Issues over the environment, politics, economic change, elites, corruption</td>
</tr>
</tbody>
</table>

Hidden Conflicts: Role of Gender

Issues in the region

However, many such issues result from inter-Ministerial/Departmental conflicts.

Lack of coordination between relevant Departments of the Government (e.g. Fisheries and Environment) is a major concern in fisheries management.

Poor coordination often results from conflicting goals of different Department, clash of egos, etc.
What does CCRF suggest for resolving conflicts?

Understand the historical context of the conflicts!

Participatory Approach

Assigning Property rights... in favour of small-scale fishers!

Do you agree?

Resolving inter-sectoral conflict

Role of the fisheries manager at the local level
Differentiating issues and conflicts

Can the challenge be addressed by the resources available within the system?

Yes  No

Issue  Conflict

Mediation

Using Constitutional Authority

Thank you!
International Treaties and Convention in Fisheries

Yugraj Singh Yadava
Bay of Bengal Programme
Inter-Governmental Organisation

Introduction

• The word ‘resource’ is evolved from the Latin ‘resurgere’ – also the root of the word ‘resurrection’ – the act of rising from the dead.

• The fate of fishery resources depends much on the type of human involvement i.e. fisheries governance.

• Fisheries governance can be defined as the sum of legal, social, economic & political arrangements that are used to manage fisheries. It includes legally binding rules and regulations, such as national legislation or international treaties, and it relies on customary social arrangements as well as on the respective national framework provided for all economic activities (FAO, 2006).

Of treaties, law and conventions

• International Law: International law is the set of rules generally regarded and accepted as binding in relations between states and nations. It serves as a framework for the practice of stable and organized international relations.

• Treaty: A treaty is an agreement in written form between nation-states (or international agencies, such as the United Nations) that is intended to establish a relationship governed by International Law.

• Conventions: Same as treaties. Over history, however, treaties have usually come to be signed by a limited number of parties whereas conventions have been agreed upon by a larger number of nations, even as they remain open for more to join and efforts continue to bring them aboard.

Origin of International Instruments for Fisheries Governance

• Historically, marine fisheries was governed by the ‘freedom of the seas’ concept, dating from the 17th century: All waters beyond national boundaries (3 NM from coast) were considered international waters – free to all nations, but belonging to none;

• The United Nations Convention on Law of the Sea (UNCLOS) 1956 – created an order through its three rounds of discussion (1956, 1960 and 1967);

• UNCLOS recognized the ‘seas’ as the ‘common heritage of mankind’.

• By early 1990s, the international community had recognized a looming crisis in marine fisheries.

• The emerging issues were discussed during the 1992 Cancun Conference on Responsible Fishing and the 1992 United Nations Conference on Environment and Development (UNCED).

• The discussions facilitated enforcement of the 1982 UNCLOS in 1994 and later the 1995 Fish Stocks Agreement and also the much elaborated but voluntary Code of Conduct of Responsible Fisheries (CCRF) in 1995.

International Instruments for Fisheries Governance

• Non-Voluntary (Binding) Instruments

• Voluntary Instruments
Non- Voluntary Instruments

The 1982 UN Convention on the Law of the Sea
• A landmark agreement for comprehensive ocean governance;
• Recognition of EEZ: defining the rights and duties of the coastal States;
• Led to the 1993 FAO Compliance Agreement and the 1995 UN Fish Stocks Agreement.

The FAO Compliance Agreement (1993)
• Imposes obligations for conservation and management needs;
• Brings transparency in fishing and fishing vessel operation.

The UN Fish Stocks Agreement (1995)
• Focuses on conservation and management of straddling and highly migratory fish stocks;
• Introduces precautionary approach to fisheries management;
• Specifies obligation of flag states – innovative enforcement provisions;
• Promotes special needs of developing countries;
• Paves the way for regional fisheries management organizations.

Parallel developments …

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
• To ensure that international trade in specimens of wild animals and plants does not threaten their survival;
• CITES has three appendices

Appendix I include species threatened with extinction. Trade in specimens of these species is permitted only in exceptional circumstances.

Appendix II include species not necessarily threatened with extinction, but in which trade must be controlled in order to avoid utilization incompatible with their survival.

Appendix III contains species that are protected in at least one country, which has asked other CITES Parties for assistance in controlling the trade.

In view of full or over exploitation of many fish stocks, there are proposal to further expanding the list.

Convention on the Conservation of Migratory Species of Wild Animals (1979)
• Also known as CMS or Bonn Convention
• Aims to conserve terrestrial, marine and avian migratory species throughout their range.

• To establish a framework to conserve and replenish depleted marine turtle populations and manage the wide range of threats to marine turtles, including habitat destruction, direct harvesting and trade, fisheries by-catch, pollution and other man-induced sources of mortality.

The 1992 Earth summit
• The Earth Summit resulted in the five major outputs, of which the following four documents have important bearing on re-defining fisheries governance:
• The Rio Declaration put ‘human’ at the centre of concern for sustainable development and acknowledged the sovereign right and responsibility of states to ensure controlling of damage to the environment.
• Agenda 21 calls for international co-operation needed for sustainable development, conservation and management of resources, strengthening of stakeholders and governance issues.
• The Convention on Biological Diversity (CBD, 1995)
  - Landmark treaty for biodiversity conservation;
  - Focus on ‘fair and equitable sharing of the benefits’ from utilization of genetic resources;
  - Building block for the CCRF.
• Framework Convention on Climate Change

Voluntary Instruments

The 1995 FAO CCRF
International Plan of Action (IPOA) to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (2001).

Fisheries Arrangements
• Outcome of UNCLOS and UN Fish Stocks Agreement.
• Objectives:
  - Capacity building
  - Addressing common regional issues
• Types:
  - Regional Fisheries Management Organizations – Management, Institutional, Development.
  - Regional Fisheries Bodies – Advisory, capacity building, development.

Indian Ocean Tuna Commission (IOTC) (Article XIV body of FAO)
Asia-Pacific Fishery Commission (APFIC) (Article XIV body of FAO)
Bay of Bengal Programme Inter-Governmental Organisation
INFOFISH
SEAFDEC

Conclusion - Strengths
• The UNCLOS in conjunction with the Compliance Agreement and IPOA-Capacity aims at controlling fishing fleet and fishing capacity.
• The CCRF along with the Fish Stocks Agreement, CBD and CITES aims at stabilizing fish stocks through precautionary measures, trade restrictions and environmental commitments.
Conclusion - Weaknesses

• Tools are in plenty – workmen missing: In India understanding and implementation is an issue;
• Rules in the book - MCS needs strengthening: Leading to effective implementation;
• Regional and inter-organizational cooperation lacking;
• Poor synchronization of efforts in case of RFBs;
• Global commitment- local implementation need for adaptation.

Thank you!
Root Cause Analysis of Fisheries Problem

Rajdeep Mukherjee
rmukherjee@bobpigo.org

How ‘best’ policies can go astray?

- Sustainable fishing
- Reduce fishing effort
- Increasing production
- Increase fishing effort
- Poverty reduction
- Small-scale centric
- Export promotion
- Capital intensive

Conflict

What is conceptualizing?

Conceptualization refers to the articulation of thoughts, ideas, or hunches and the representation of these in some objective form.

Policy solutions can vary depending on how a problem is conceptualized. It is now being increasingly debated in international fish trade negotiations

An example

Country X has a coastline of xxx km and fishing is carried out all along the coastline. The fisheries is multispecies; fishers are mostly poor & illiterate. There are N number of fishing vessels in the country and only M number are registered (M<N). The shipping department is responsible for registration and the coast guard for checking of registration certificate. In recent years the number of fishing vessels has increased from N50 to N100. Some commercially important fish stocks are depleted and CPUE is going down. There was some unsuccessful registration programmes conducted earlier.

Country X

- Fishing is carried out all along the coastline. (SCALE)
- Multispecies fishery (TYPE)
- Fishers poor and illiterate. (ATTRIBUTE of ACTORS)
- Registered M (M<N). (SYSTEM FAILURE)
- Shipping Department and the Coast Guard. (CAPACITY)
- Recent years. (LACK of Information)
- Fishing vessels have increased (WHO is supplying?)
- Stocks and CPUE is going down. (STATE)
- Unsuccessful registration. (UNPLANNED measures).
**Defining purpose**

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Alternative purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>To rebuild fish stocks</td>
<td>To register fishing vessels</td>
</tr>
</tbody>
</table>

**Generation**

<table>
<thead>
<tr>
<th>Purpose: To rebuild fish stocks</th>
<th>Purpose: To register fishing vessels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programme for rebuilding fish stocks</td>
<td>Programme for registering fishing vessels</td>
</tr>
<tr>
<td>Central entry</td>
<td>Awareness drive</td>
</tr>
<tr>
<td>Artificial methods</td>
<td>Recruiting more manpower</td>
</tr>
<tr>
<td>Seasonal ban</td>
<td>Frequent check by coast guard</td>
</tr>
<tr>
<td>Fishing holiday</td>
<td>Law on banning entry for unregistered fishing vessels</td>
</tr>
<tr>
<td>Quote</td>
<td>Simplifying registration process</td>
</tr>
</tbody>
</table>

**Structuring**

<table>
<thead>
<tr>
<th>Purpose: To rebuild fish stocks</th>
<th>Purpose: To register fishing vessels</th>
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<tbody>
<tr>
<td>Programme for rebuilding fish stocks</td>
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<td>Simplifying registration process</td>
</tr>
</tbody>
</table>

**Going deeper: Causal analysis**

- Observe & Record
- Formulate
- Analyze
  - Filter I ( Biological)
  - Filter II (Economic)
  - Filter III (Institutional)
  - Filter IV (…)
  - Filter V…

LIMITED BY AVAILABILITY OF HUMAN RESOURCE AND FUNDING AND CONDITIONAL TO INITIAL OBSERVATIONS
Setting Objectives and Goals

- Sustainability Condition:
  - Benefit = Cost (for all stakeholders)
- Best framed when broad-base consultation and scientific evidences are taken into account.
- Should take precautionary approach

How policies can NOT go astray?

- Sustainable fishing
- Reduce fishing effort
- Increasing production
- Increase fishing effort
- Poverty reduction
- Small-scale centric
- Export promotion
- Capital intensive
- Ensuring access to credit

Rules on distribution of fishing effort
Managing Commercially Important and Vulnerable Fish Species

Md Sharif uddin
sharif@bobpiago.org

The 1995 Code of Conduct for Responsible Fisheries

“States and all those engaged in fisheries management should, through an appropriate policy, legal and institutional framework, adopt measures for the long-term conservation and sustainable use of fisheries resources. Short-term considerations should not compromise these objectives.”

Bay of Bengal: Challenges

- Shared stock
- Wide migration
- Artisanal fishery

As for transboundary fish stocks, straddling fish stocks, highly migratory fish stocks and high seas fish stocks, where these are exploited by two or more States, the States concerned should cooperate to ensure effective conservation and management of the resources.

“Shared Fish Stocks” (CCRF, Art. 7)

- Transboundary stocks: fish resources crossing the EEZ boundary of one coastal State into the EEZ(s) of one, or more other coastal States.
- Highly migratory species: primarily, of the major tuna species (Annex 1 of the UNCLOS 1982).
- Straddling stocks: all other fish stocks (with the exception of anadromous/catadromous stocks) that are to be found, both within the coastal State EEZ and the adjacent high seas.
- High seas fish stocks: fish stocks to be found exclusively in the high seas.

The situation demands...

- To be effective, fisheries management should be concerned with the whole stock unit over its entire area of distribution.
- Conservation and management measures established for relevant States should be compatible.
- Compatibility should be achieved in a manner consistent with the rights, competences and interests of the States concerned.
Such measures need...

• Managing excess fishing capacity;
• Incentives to promote responsible fisheries;
• Consideration of the interests of fishers;
• Conserving biodiversity of aquatic habitats and ecosystems; and
• Correction of adverse environmental impacts of fishing.

Conserving the Sharks

• Sharks appeared over 400 million years ago.
• Sharks are long-lived apex predators with small populations, difficult to breed rapidly enough to maintain population levels.
• Some shark species have been depleted by over 90 percent over the past 20-30 years.

Shark Landings in BOBP-IGO Member-Countries

Share of BOBP-IGO Member-Countries in Global Shark Landings

Export of Shark Products from the BOBP-IGO Member-Countries (Tonnes)

Need for Regional Coordination

• Data on shark fin shows that the total catch of sharks must be between 3 and 5 times of what is reported.
• That is 60-80% of the total catch is unreported. Probably 50% percent is caught from the high seas.
• The instance of IUU fishing in general is increasing in the eastern Indian Ocean.
The IPOA-Shark

• Within the framework of the Code of Conduct for Responsible Fisheries.

• Based on the principles of participation: ‘states that contribute to fishing mortality should participate in its management’.

Objectives:

• Sustainability of catches (targeted and by-catch);
• Assessment of threats to populations and key habitats to enable adaptive management and prioritisation of actions;
• Contribution to the protection of biodiversity and ecosystem structure and function;
• Encouraging full use of sharks (i.e. ban the practice of finning);
• Collection and distribution of data pertaining to shark catches and landings, species specific biology and trade, and
• Capacity building and assistance to developing countries and international cooperation in general for the integrated and harmonised implementation.

The Shark-plan should.......

Hilsa fisheries in the Bay of Bengal

• Bangladesh has the largest stock followed by India and Myanmar.

• Hilsa fisheries is now extended to 200-250 km from the coastline.

• In Bangladesh, in the last three decades, hilsa fishery has been completely lost from about 35 rivers and in another 8-10 rivers hilsa are rarely caught. The estimated production loss from these rivers is about 20 000-25 000 tonnes.

• In India, the migratory range of hilsa in Indian rivers has considerably reduced.

• Resultantly, catches have sharply declined in the middle zone of the Ganga river system.

• In Myanmar, continuously changing river hydrology and bottom topography coupled with gold panning and mining are posing threat to hilsa habitats, changing the ecology and may affect the hilsa production later.

• In Bangladesh the average landing of hilsa during 2012-13 is about 0.35 million tonne.

• In India, on an average 43 000 tonnes of hilsa was produced from marine waters.

• In Myanmar, the average hilsa landing during 2006-08 is about 14 000 tonnes.

• Over all, presently the average landing of hilsa from Bangladesh, India and Myanmar is about 0.41 million tonne per year.

The Regional Plan of Action for Sharks & Hilsa:

Objectives

• Expand the frontiers of understanding of shark & hilsa fisheries in the BoB region and its impact on ecology;
• Provide technical assistance;
• Work with concerned regional and international organizations; and
• Educate the concerned stakeholders and advocacy.
Possible levels of Cooperation

- Monitoring – by sharing information on catch and real-time communication.
- Research – by sharing research findings and undertaking joint research projects and exchanging experts.
- Policy – by collaborating and promoting synchronized measures.

Thank you!
Understanding MCS in Marine Fisheries

Rajdeep Mukherjee
rmukherjee@bobpigo.org

Typology of fisheries conflicts in tropical waters

<table>
<thead>
<tr>
<th>Type I: Who controls the fishery</th>
<th>Type II: How the fishery is controlled</th>
<th>Type III: Relations between fishery users</th>
<th>Type IV: Relations between fishers and other users of the aquatic environment</th>
<th>Type V: Relationship between fishers and non-fishery issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g. Access issues</td>
<td>e.g. Issues between different scales of users (artisanal, semi-industrial)</td>
<td>e.g. Issues between different groups (linguistic, religious, ethnic)</td>
<td>e.g. Issues over the environment, politics, economic change, elites, corruption</td>
<td>e.g. Issues over the environment, politics, economic change, elites, corruption</td>
</tr>
</tbody>
</table>

- Excess fishing effort
- Stock depletion
- Destructive fishing
- Excess capacity
- Loss of data
- Accidents
- Piracy
- Terrorism
- Seasonal ban
- Poaching
- Capitalization
- Subsidy
- Marginalization
- Pseudo rights
- Weak MCS
- Pollution
- Climate change?

However...

Fishing conflict

Blues of the Blue

Problem ≈ 1/ Governance
Governance = F (MCS)

Problem = \frac{1}{\text{Governance}}

Monitoring

...collection, measurement and analysis of fishing activity including, but not limited to: catch, species composition, fishing effort, by-catch, discards, area of operations, etc. These activities are normally performed by the Department/Ministry of Fisheries. Where community management has been adopted, fishers will be directly involved in the monitoring and evaluation process.

Surveillance...

...observing, policing and enforcement of the implementation of management instruments. In addition to involving the authorities (Fishery department, police, coast guard or navy) surveillance, especially of artisanal fisheries, may also involve local fishing communities. This activity is critical to ensure that resources are not over exploited, IUU fishing is minimized and management arrangements are implemented.

Control

The implementation of appropriate management instruments in order to either stimulate or check development of the fishery...
Tools of MCS

Participatory management plan
Enforceable legislation and controls
Data collection systems - dockside monitoring, observers, sea and port inspections ...
Supporting communications systems
Patrol vessels / Aircrafts/ Up-to-date technology
Regional cooperation
Professional staff

Vessel monitoring system: Options

<table>
<thead>
<tr>
<th>Technology</th>
<th>Level of sophistication and cost</th>
<th>Field</th>
<th>Efficacy (to detect rule breaking)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satellite tracking</td>
<td>High</td>
<td>Large fishing vessels/ off shore fisheries</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>Small-scale/ inshore fishing vessels</td>
<td>Low (too much data from a small area)</td>
</tr>
<tr>
<td>Log books</td>
<td>Low</td>
<td>Large fishing vessels/ off shore fisheries</td>
<td>High but dubious</td>
</tr>
<tr>
<td></td>
<td>Low to high (may need training programmes)</td>
<td>Small-scale/ inshore fishing vessels</td>
<td>Low</td>
</tr>
<tr>
<td>Color-coding+ voyage plan</td>
<td>Low</td>
<td>Large fishing vessels/ off shore fisheries</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>Small-scale/ inshore fishing vessels</td>
<td>Medium to high</td>
</tr>
</tbody>
</table>

MCS in small-scale fisheries

- Lack of accurate statistics in the small-scale/artisanal sector.
- Lack of a scientific information system.
- Inadequate trained manpower at both management and operational levels.
- Lack of awareness at the community-level of the need for MCS.
- A large number of inaccessible landing places along the coast.
- Lack of supporting legislation to implement MCS.
- Inadequate funding for MCS.

Steps to implement MCS

- Determining the level of sustainable exploitation.
- Fishing effort control (e.g. through licensing).
- Selecting appropriate management. instruments e.g. zonation.
- Development of fisheries management plans.
- Controls in ports and at sea.
- Educating the community.

Scope of regional cooperation in MCS

Cooperation with advanced countries.
Cooperation with neighbors.
### Issues and threats to fisheries

<table>
<thead>
<tr>
<th>Fishery factors</th>
<th>Non-fishery factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overfishing</td>
<td>Increasing landuse</td>
</tr>
<tr>
<td>Overcapacity</td>
<td>Pollution</td>
</tr>
<tr>
<td>Destructive fishing</td>
<td>Habitat destruction</td>
</tr>
<tr>
<td>Inappropriate fishing</td>
<td>Climate change</td>
</tr>
<tr>
<td>IUU fishing</td>
<td></td>
</tr>
<tr>
<td>Ghost fishing</td>
<td></td>
</tr>
</tbody>
</table>

### Need for inclusive approach: EAFM

- Conventional fisheries management views fish as a separate entity
- Does not cover all threats and issues; can fail
- A broader and more inclusive approach is needed that expands on existing management

### What is an ecosystem?

“An ecosystem can be defined as a relatively self-contained system that contains plants, animals (including humans), micro-organisms and non-living components of the environment as well as the interactions between them.”

SPC (2010)
Ecosystem approach

- It is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way (CBD 2000)
- EA is often used interchangeably with ecosystem-based management (EBM)

The ecosystem approach is the way to implement sustainable development.

Sustainable development

“Development which meets the needs of the present without compromising the ability of future generations to meet their own needs.”

Sustainable development is about maximizing the ecosystem benefits but at the same time not degrading the systems to the extent that the benefits cannot be sustained.

REMEmBER EAFM IS FINDING THE BALANCE

Adapted from ICSF (2013)
Ecological well-being

• Healthy ecosystems that maximize ecosystem services
• Biodiversity that leads to ecosystem resilience
• Supportive ecosystem structure and habitats
• Healthy oceans, coastal areas and watersheds
• Food webs based on diverse sources of primary production

Human well-being

• Living standards (income, food and wealth)
• Health
• Education
• Food security
• Basic human rights e.g. political voice and influence
• Social connections and relationships
• Living environment (present and future conditions)
• Economic security and human safety

Good governance

The way rules and regulations are set and implemented (both formal and informal).
It includes:
• planning and implementation mechanisms
• processes and institutions through which citizens and governing groups voice interests, mediate differences, exercise legal rights and meet obligations
• compliance and enforcement

EAFM builds on existing fisheries management: “the move towards EAFM”

<table>
<thead>
<tr>
<th>EXISTING</th>
<th>EAFM</th>
<th>EA/EBM</th>
</tr>
</thead>
<tbody>
<tr>
<td>• target species</td>
<td>• target and bycatch</td>
<td>• integrated management across sectors</td>
</tr>
<tr>
<td>• fish focused</td>
<td>• considers habitats</td>
<td>• multiple use management</td>
</tr>
<tr>
<td>• production driven</td>
<td>• fishery impacts on the ecosystem</td>
<td></td>
</tr>
<tr>
<td>• managed through control of fishing</td>
<td>• threats to the fishery from external factors</td>
<td></td>
</tr>
<tr>
<td>• government driven</td>
<td>• good governance/participatory</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• socio-economic benefits</td>
<td></td>
</tr>
</tbody>
</table>

EAFM complements other approaches

Key principles of EAFM

P1: Good governance
P2: Increased participation
P3: Appropriate scale
P4: Multiple objectives
P5: Cooperation and coordination
P6: Adaptive management
P7: Precautionary approach
7. EAFM PROCESS OVERVIEW

The 5 steps of EAFM

Step 1
Define and scope the Fisheries Management Unit (FMU)

1.1 Define the FMU
1.2 Agree the FMU vision
1.3 Scope the FMU

Provides background information and a vision

Step 2
Identify & prioritize issues & goals

Identifies the high priority issues and sets goals

1. Identify threats & issues
2. Prioritize issues
3. Define goals for EAFM plan

Step 3
Developing the EAFM plan

1. Develop operational objectives
2. Develop indicators & benchmarks
3. Management actions & compliance
4. Identify sustainable financing
5. Finalize the EAFM plan

Develops the management framework

Step 4 Implement

Implements the plan through formalizing and communicating it

1. Formalize, communicate and engage
**Step 5**
**Monitor, evaluate, adapt**

5.1 Monitor & evaluate (M&E) performance of management actions
5.2 Adapt the plan based on M&E

Completes the EAFM cycle with M&E and adapts the plan to start a new cycle

---

**Case Study: Northwest Hawaiian Lobster fishery**

- **Slipper and spiny lobster catch**
- **Total landing (million lbs)**

Year: 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99

- Fishery opens
- Plan developed
- Emergency closure
- Exploratory fishery
- Shortened fishery
- Fishery closed

**Catch limits**

---

**Lessons learned**

**Stakeholders:**
- Limited involvement → increased conflict, resource decline, management action failure
- Not holistic enough to address ecological or social conditions → decline in fisheries

**Public engagement:**
- Need EAFM outreach into educational system

---

**Case Study: USA moving toward EAFM**

1996: The US Sustainable Fisheries Act

- An important legislative shift towards EAFM as it requires the protection of essential fish habitats in all USA waters
- Demonstrates Adaptive Management

---

**Moving towards EAFM: USA case study**

**Magnuson-Stevens Fishery Conservation & Management Act (Federal Law) 1976**

Established 8 Regional Fishery Management Councils

**Council Members:**
- Federal Agencies (NOAA Fisheries, US Fish & Wildlife Service, US Coast Guard, State Department)
- State Fishery Agencies (local gov.)
- Fishermen* (commercial, recreational)
- Other concerned users/stakeholders* (seafood owners, conservationists, researchers, educators)

* Nominated by respective State’s Governors

---

**Corals Reef Ecosystem FMP (2004)**

Shift from target to multi-species, multi-scale fisheries

- Multi-species fisheries (2,000+ species)
- Multi-gear fisheries (25+ methods)
- Occurs across national, state and territorial waters
### Coral Reef Ecosystem FMP Objectives

- **Ecological well-being objectives:**
  - restore reef fisheries, resources, habitats
  - maximum, sustainable long-term catch
- **Human well-being objectives:**
  - generate revenue and livelihoods
  - improve public awareness of reef ecosystems and their vulnerability
- **Governance objectives:**
  - promote improved surveillance and enforcement
  - collaborate with other agencies to share data and resources

### FMP management actions

- Network of areas with seasonal closures
- Established permit and reporting requirements
- Only selective, non-destructive fishing gears permitted
- Prohibited harvest of protected species
  
  *Exception: limited harvest under permit for scientific research*

### Shift towards EAFM in USA 1976-2013

- **1950s-1970s** Overfishing → Collapsing fisheries (e.g. New England)
- **1976** Magnuson-Stevens Fishery Conservation & Management Act
- **1980’s** Single fisheries Fishery Management Plans (FMPs)
- **1996** Sustainable Fisheries Act → Essential Fish Habitat
- **2004** Coral Reef Ecosystem FMP
- **2006** Amended Fishery Management Act → Annual Catch Limits
- **2010** Archipelagic Fishery Ecosystem Plans (FEPs)
- **2012** End of ‘overfishing’ for all USA fishery stocks

### Key messages

- Implementing EAFM takes time
- EAFM is an iterative process; lessons learned along the way
- Many fisheries are doing EAFM in part
- Moving towards EAFM does not require drastic change, but many small steps through time

### THANK YOU
Information need & data collection methodology in fisheries management

Shoba Joe Kizhakudan
Central Marine Fisheries Research Institute

Fisheries Management
regulatory means to ensure sustained health and productivity of a fishery

includes the fishery resource, the ecosystem that sustains it, the social structure it sustains and the market links that thrive on it

should hold good for a long time

should provide flexibility for change

Data
set of qualitative or quantitative values through statistically designed / treatable plan

Basic / primary data - lowest level of abstraction from which information can be derived

Field data & Experimental data

Raw data

Measures of performance of fishery: reflection of assimilated data

Data to support fisheries management

Geography

Hydrography

Biodiversity

Dependency

Fishery

Socio-cultural implications

Resource availability

Resource abundance

Resource biology

Resource dynamics

Resource conservation

Terminologies

- **Carrying Capacity**: The capacity of a geographical area to produce and sustain living organisms.
- **Standing Stock/Standing Crop**: Size of the stock of a given species (in terms of numbers or biomass) in a given area at one time.
- **Potential Yield/Sustainable Yield**: The yield that could be taken from a stock/stocks continuously in a sustainable manner.
- **Fishing capacity**: The capability to catch fish - maximum amount of fish over a period that can be produced by a vessel or fleet of fully utilized vessels, given the biomass and age structure of the fish stock and the present state of the technology
Underexploitation
- Initial phase of a fishery
- Low fishing intensity
- Low yield
- With increasing fishing effort, yield also increase
- Fishes die of natural causes
- Resource not utilised for human consumption
- Management required: Increase the number and efficiency of craft and gear

Optimum exploitation
- Provides sustainable yield continuously
- Stocks remain stable
- Management required: Maintain fishing effort and efficiency

Overexploitation
- Fishing intensity is very high
- Stocks unable to withstand fishing pressure
- Stocks not allowed to reproduce and grow
- Decline in stock biomass
- Catch per unit effort declines first, followed by catch
- Management required: Restriction of fishing effort etc.

Maximum Sustainable Yield (MSY)
- The maximum yield that could be taken from a stock/stocks continuously in a sustainable manner.

Maximum Economic Yield (MEY)
- The maximum economic yield that could be taken from a stock/stocks continuously in a sustainable manner.

Fishery Data
- Primary data includes data on catch, effort, species abundance, diversity and market value.
- Add-ons: biological data, environmental data and socio-economic data.
- FAO: “general purpose datasets” that may be subsequently used for a variety of statistical applications to assess the health of the fishery.

DATA SPREAD – prime importance

Fish stock assessment - quantitative judgment of the existing status of a fish resource in a given ecosystem, and the likelihood of its abundance or decline in future based on its response to fishing pressure and natural mortality in the past.

What is the size of the resource (in terms of number and biomass)
How many fish can be caught each year so as to maintain sufficient numbers of exploitable fish for the coming years
Application of potential estimate in the country’s economic growth
The right way of proceeding with the stock assessment
A clear understanding of the biology of the fish and logical reasoning applied to statistical computations will help in drawing a better picture of the stock parameters of a particular resource.

Limitations

(i) Estimation of growth and mortality parameters of larger pelagics from selective gears like the large mesh gillnets exploiting mostly larger fishes.

(ii) Estimation of growth and mortality estimates of smaller pelagics forming schools of fish of same size.

(iii) Estimating the stocks of migratory fishes like the tunas without considering the characteristics of the cohorts and the stocks in the fishing areas from where the samples were collected.

(iv) Bias in the selection of the length frequency modes.

(v) Collection of data from an array of gears without proper standardization of the effort.

(vi) Selecting inappropriate methods especially for the estimation of the total mortality coefficient.

Ecosystem approach to fisheries management

- integrates ecological, social, and economic goals
- considers ecological boundaries.
- addresses the complexity of natural processes and social systems
- uses an adaptive management approach in projecting dimensions for the future.
- incorporates understanding of ecosystem processes and how ecosystems respond to environmental perturbations.

The concept of fisheries management, incorporating biology, economics and social and institutional issues has made progress, and fisheries management now is far more holistic, self-critical and intensive than it was even 10 years ago.

Fisheries management requires to be tackled through a panoramic view, and the role of efficient database management and data processing in this exercise cannot be undermined.
Data must be systematically collected, meticulously organised, scientifically analysed, critically interpreted and subjectively transformed into meaningful conclusions and projections that decide the course of action to be initiated for effective fisheries management.

Thank You
Every year approximately US$ 9 billion to US$ 24 billion worth of fish taken out by the fish pirates !!!!

Their target are the stocks, high in value and probably over exploited and fishing is not permitted.

The fish pirate are not only enemy of nature, but their action is accelerating POVERTY for fishers of the future.

Controlling IUU Fishing

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What is IUU fishing?

Illegal fishing
– conducted by national or foreign vessels in waters under the jurisdiction of a State, without permission or in contravention of its laws and regulations.
– conducted by vessels flying the flag of States that are parties to a relevant regional fisheries management organization but operate in contravention of the conservation and management measures adopted by that organization.
– in violation of national laws or international obligations, including those undertaken by cooperating States to a relevant regional fisheries management organization.

However...

• The definition is not clear whether ‘traditions’ are to be considered as a form of authorization or not;
• Neither the size of a fishing vessel nor the objective of fishing (commercial vs. subsistence) is mentioned. The definition is equally applicable to all vessels engaged in any kind of fishing; and
• Means a fishing vessel is engaged in illegal fishing is doing so in full conscience. However, infringement of the rules and regulations due to system failure should not be considered as illegal fishing!!!

Unreported fishing...

• Fishing activities which have not been reported;
• Misreported; and
• Undertaken in the area of competence of a relevant RFMO, which have not been reported or have been misreported.
**Unregulated fishing**...

- Fishing activities in the area of application of a relevant RFMO that are conducted by vessels without nationality;
- By those flying the flag of a State not party to that organization;
- By a fishing entity, in a manner that is not consistent with measures of that organization; and
- In areas or for fish stocks in relation to which there are no applicable conservation or management measures and where such fishing activities are conducted in a manner inconsistent with State responsibilities for the conservation of living marine resources under international law.

**Examples!**

- Illegal
- Unreported
- Unregulated

![A non-flagged vessel in Indian ocean](image1)

![Using dynamite](image2)

![A stationary trawler near shore](image3)

![Missing pages in logbook](image4)

**Legal Fishing ???**

![Fishing activity diagram](image5)

**What drives IUU...**

... **INCENTIVES**

- The highest levels of illegal fishing are associated with high value demersal fish (e.g. cod & hake, lobsters and shrimps/prawns; and the lowest levels with pelagic fish such as sardines and tunas).
- Failure/motivation of a number of flag states to exercise any effective regulation over ships on their registers creates an incentive for ships to register ‘flags of convenience’.
- The IUU activity may have a high chance of success – from the failure of governments to regulate adequately or to enforce national or international laws.

**IPOA-IUU**

- First voluntary international coordinate action against IUU fishing.
  - Based on four main areas of action:
    - Flag State responsibilities
    - Coastal State measures
    - Port State measures, and
    - Internationally agreed market-related measures.
Measures

<table>
<thead>
<tr>
<th>Flag State</th>
<th>Coastal State</th>
<th>Port State</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Not allow their vessels to engage in or support IUU fishing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• To ensure fishing vessels are registered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Maintain records of fishing vessels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Issue authorizations to fish</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Should implement measures to deter IUU fishing in their EEZ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Checking authorization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inspection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Information exchange with flag state</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Using market to control IUU fishing

• The market–related measures were prescribed in IPOA-IUU

• The IPOA holds that market-related measures are to be implemented in a fair manner and in accordance with rules of WTO
  – EU-IUU Regulation
    • EU regulation No 1005/2008 on “Establishing a community system to prevent, deter and eliminate illegal, unreported and unregulated fishing”
    • Trade barrier or IUU barrier

State of the region ??

• Data shows increasing IUU fishing in eastern Indian ocean
• Poor MCS in the region
• Lack of in-house capacity to stop illegal fishing by domestic fishing vessels
• Political connections

Thank you!
Understanding participatory management in fisheries

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info@bobplgo.org

Common Property Resource (CPR)

Open Access

Who is the loser?

The shift from community based management to governmental interventions in resource management
- National development agenda

Problems in top-down approach
- Conflict with conservation measures.
- Improving MCS measures including data strengthening and logbooks.
- Improving extension and training services.
- Lack of awareness and awareness creation.
- Socio-economic condition of fishermen.
- State of resources and resource depletion.
Institutions or "rules of the game"

Which institution(s) can ensure benefits for fishers from fisheries?

**Property rights**
- **Access**: right to enter a defined physical area and enjoy non-subtractive benefits.
- **Withdrawal**: right to obtain resource units or products of a resource system.
- **Management**: right to regulate internal use pattern and transform the resource by making improvements.
- **Exclusion**: right to determine who will have an access right and how that right may be transferred.
- **Alienation**: right to sell or lease exclusion, management or withdrawal rights.

**ATTRIBUTES OF RESOURCES**
- Feasible improvement
- Reliable and viable Indicators
- Predictability
- Spatial extent

**ATTRIBUTES OF USERS**
- Resilience
- Common understanding
- Distribution of interests
- Trust
- Autonomy
- Prior organizational experience

**TO SUMMARIZE**
- Success and sustenance of community fisheries – a collective action phenomenon – depend on a rich interplay of the property rights regime, the attributes of the resource and those of the users.
NECESSARY STEPS

- Operational definition and subsequent legal status of “community”.
- Information, technological management and institutional support from the State and Civil Society Organizations to the “community” in protecting the fisheries resource system to its ultimate advantage.

Participatory/Community-management is better than government management if working. However, the road is challenging.
Involving community-based organization in fisheries management
International Collective in Support of Fishworkers

1995 Code of Conduct for Responsible Fisheries

9.4.2 States should promote active participation of fish farmers and their communities in the development of responsible aquaculture management practices.

10.2 Policy measures
10.2.1 States should promote the creation of public awareness of the need for the protection and management of coastal resources and the participation in the management process by those affected.

11.3.2 States, in accordance with their national laws, should facilitate appropriate consultation with and participation of industry as well as environmental and consumer groups in the development and implementation of laws and regulations related to trade in fish and fishery products.

2014 Small-scale Fisheries (SSF) Guidelines

1.1. States should facilitate, train and support small-scale fishing communities to participate in and take responsibility for taking into consideration their legitimate tenure rights and systems of the management roles agreed to. All such issues would be more likely if small-scale fisheries are represented in relevant local and national professional associations and fisheries bodies and actively take part in relevant decision-making and fisheries policy-making processes.

6.10. States and small-scale fisheries actors, including traditional and customary authorities, should understand, recognize and respect the role of migrant fishermen and fish workers in small-scale fisheries, given that migration is a common livelihood strategy in small-scale fisheries. States and small-scale fisheries actors should cooperate to create the appropriate framework to allow for fair and adequate integration of migrants who engage in sustainable use of fisheries resources and who do not undermine local community-based fisheries governance and development. Small-scale fisheries in accordance with national law, States should recognize the importance of coordinating among their respective national governments in regard to migration of fishers and fish workers in small-scale fisheries across national/borders. Policies and management measures should be worked out in consultation with small-scale fisheries organizations and institutions.

2014 Small-scale Fisheries (SSF) Guidelines

6.17. States should recognize that improved sea safety, which includes occupational health and safety, in small-scale fisheries (inland and marine) will best be achieved through the development and implementation of coherent and integrated national strategies, with the active participation of the fishers themselves and with elements of regional coordination, as appropriate. In addition, safety at sea of small-scale fishers should also be integrated into the general management of fisheries. States should provide support to, among other things, maintenance of national accident reporting, provision of sea safety awareness programmes and introduction of appropriate legislation for sea safety in small-scale fisheries. The role of existing institutions and community-based structures for increasing compliance, data collection, training and awareness, and search and rescue operations should be recognized in this process. States should promote access to information and to emergency location systems for rescue at sea for small-scale vessels.

International Instruments

1995 Code of Conduct for Responsible Fishery
- 6.13. States should, to the extent permitted by national laws and regulations, ensure that decision making processes are transparent and achieve timely solutions to urgent matters. States, in accordance with appropriate procedures, should facilitate consultation and the effective participation of industry, fishworkers, environmental and other interested organizations in decision making with respect to the development of laws and policies related to fisheries management, development, international lending and aid.

2014 Small-scale Fisheries (SSF) Guidelines
- 5.16. States should ensure the establishment of new or promote the application of existing systems for monitoring, control and surveillance (MCS) systems applicable to and suitable for small-scale fisheries. They should provide support to such systems, involving small-scale fisheries actors as appropriate and promoting participatory arrangements within the context of management. States should ensure effective monitoring and enforcement mechanisms to deter, prevent and eliminate all forms of illegal and destructive fishing practices having a negative effect on marine and inland ecosystems. States should endeavour to improve registration of the activity. Small-scale fishers should support the MCS systems and provide to the state fisheries authorities the information required for the management of the activity.
2012 Tenure guidelines

5.2. Indigenous peoples and other communities with customary tenure systems that allow: self-governance of land, fisheries and forests, should promote and provide equitable, secure and sustainable rights to those resources, with special attention to the provision of equitable access for women. Effective participation of all members, men, women and youth, in decisions regarding their tenure systems should be promoted through their local or traditional institutions, including in the case of collective tenure systems. Where necessary, communities should be assisted to increase the capacity of their members to participate fully in decision-making and governance of their tenure systems.

Examples of community-institutions in management measures

**Inland fisheries**
- Cambodia (Community Fisheries)
  - Inland "fishing lots" managed under community fisheries (CFi) organizations
  - CFi contribute to both conservation and management of resources, especially women
- Malaysia
  - Under the Sabah inland fisheries and aquaculture act, 2003, river communities under the tagal system can regulate activities in the rivers
- Myanmar (draft law follow-up)
  - Ayarrawaddy delta area propose to have legal framework similar to Cambodia, initiated by NGOs-CBOs

**Marine Fisheries**

**Indonesia**
- Identification of Adat systems/traditional institutions such as Panglima bitu, saw bitu, under the Fishery Law (2009), for example,
  - Panglima bitu is customary institution in Aceh but Maluku
  - Preserving and observing traditional law of fishing
  - There some days of closed seasons/prohibitory to fish
  - Sharing the fishing ground
  - It prohibited to use bombs/proibit to take coral/reef, ornamental fish
  - Coordinating fishing in the sea
  - Solving dispute which happened between members
  - Organizing and holding the traditional ceremony in sea
  - Protecting mangrove and trees in sea-shore from illegal cutting,
  - Become a mediator between fishermen and government
- Philippines (FARMCs)
  - Philippine Fisheries Code (1998), established Fisheries and Aquatic Resource Management Councils (FARMCs) at all levels
- Vietnam (community based management organizations)
  - Fisheries legislation (under the fisheries act, and a circular issued in 2009) recognizes fisheries associations and fishing communities for management

**Community institutions in Fisheries Management**

**Recognition of community institutions in fisheries management leads to**
- Responsible management of resources as it recognizes the rights of communities to access, to conserve, and sustainable use the resources
- Inclusion of traditional knowledge and customary practices for sustainable use and long-term resource management
- Important element of ecosystem based approach to fisheries management
- Particpatory decision-making process, better implementation of the rules and regulations
- Conflict resolution undertaken in a transparent and accountable manner with the communities
- Higher degree of compliance from the fishing communities
- Often takes into account the social and power relations within the community

**Role of NGOs in Fisheries Management**

International processes recognize the role of NGOs in fisheries management
- Code of Conduct for Responsible Fisheries
- Small-scale fisheries guidelines
- FAO Tenure guidelines
- Important role in
  - Monitoring, implementation and updating of international processes and national processes
  - Understanding the current context of fishing communities, and research focus, documenting best practices
  - Advocacy and lobbying, and building an interface between government agencies and communities
  - Training and capacity building of fishing communities
Different kinds of organizations (at local, national, regional and international levels)

- Civil society organizations
- Fishworker organizations
- Community based organizations
- Non-governmental organizations
- Welfare measures
- Research and policy analysis
- Documentation and communication
- Networking
- Advisory and advocacy role
- Training based

How to use NGOs effectively in Fisheries Management

- NGOs can be used as facilitators to help in putting in place co-management or other participatory process of fisheries management
- Link between government agencies and fishing communities
- Training and monitoring of national policies
- Implement international commitments
- Disseminate information on responsible fisheries management to both fishing communities and government agencies
Artisanal Deep Sea Fishers!

- Using traditional knowledge and skill
- Manual shooting and hauling
- Making their gears themselves
- Small scale fishing operation
- Propulsion is for reaching fishing grounds

Deep Sea Fishers!

Most part of their life is at sea!

Migrants

Cattamaran to Steel Boat
- Single hook to long lines, gillnets
- Traditional Knowledge to Scientific Knowledge
- Un organized are Organized (1960 to 2014)

Artisanal Deep Sea Fishers: Profile

- Fishing gear used: Gillnets and Longlines-bottom, midwater, surface
- Number of fishing boats: 500
- Length of the boats: average 16 mts
- Body of the boat: Wooden, steel and FRP
- Propulsion: Inboard Engine

Artisanal deep sea fishers: Profile

- Horse power: 106 hp
- Fuel used: Diesel
- Duration of Fishing trip: Mini-7, maxi 40 days
- No. of crew members: 8-10
- Area of fishing:
  - Kanyakumari to Gujarat (WC)
  - Kanyakumari to West Bengal (EC)
- Permanent Ice and fish store

Annexure 18
Artisanal deep sea fishers: Profile

**Species**
- Tuna, Sharks, Thala, Kattakomban, Ray fish
- Aluvai, Seerfish, Palameen, Romeo, Groupers
- Cuttlefish, Others

The un organized are organized

- Mid 80’s - Migration to Karnataka for Shark catching
- Boats are taken to Kerala and Karnataka by road
- Late 80’s - Shark catches by bottom long lining in Karnataka and Kerala
- 1990- New merchants and new boats entered for shark fishing.

30-33 feet, 1990-95

ADSGAF-SIFFS

- Deputed 1 staff to ADSGAF
- Subsidizing of administrative expenses
- Involvement in the management of ADSGAF
- Introduced compass, wheel house – SIFFS
- Training to use of GPS, Marine chart
- Partial compensation for the loss of boats

35-42 feet, 1995-98

Managing committee
- President
- Vice President
- Secretary
- Joint Secretary
- Treasurer
- 25 members including
- Elected once in three years

Governance

- Managing committee meeting will be held every month end (Accounts, report, decisions etc)
- Urgent meeting can be have any time on need basis
- General Body meeting yearly once
Objectives

- To organize all the traditional fishermen who are engaged in deep sea fishing operations.
- To encourage and promote thrift and savings culture and also mutual help among members.
- To build awareness among the members about the new fishing grounds and techniques and impart training in the subject.

Objectives

- To engage in the Protection of Coastal Environment, Conservation of Marine Eco-Systems and Preservation of Natural Resources.
- To avail and access fishing equipments at reasonable cost.
- To involve in frontline marketing avoiding middlemen-moneylender nexus and bargain for a justifiable and fair prices for the fish landings.

Objectives

- To compensate fishermen during loss of life, equipments and belongings.
- To work for the social, economic, educational and overall integrated development of the fishing community in general.
- To work for the welfare of the members.
- To help members with litigation and other legal matters.

Objectives

- To compensate fishermen during loss of life, equipments and belongings.
- To work for the social, economic, educational and overall integrated development of the fishing community in general.
- To work for the welfare of the members.
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Activities

<table>
<thead>
<tr>
<th>Principal Activities</th>
<th>Supportive Activities</th>
<th>Sub Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boat Registration</td>
<td>Human Resource</td>
<td>Deep Sea Delicious</td>
</tr>
<tr>
<td>Advocacy and Lobbying</td>
<td>Diversified Fishing</td>
<td>Complimentary Education Programme</td>
</tr>
<tr>
<td>Samudra Sahayee</td>
<td>Post Harvest Services</td>
<td>Life with Blood</td>
</tr>
<tr>
<td>Save Our Environment</td>
<td>Savings and Credit</td>
<td>Talents</td>
</tr>
<tr>
<td>Rescue and Repatriation Operation</td>
<td>Communications and Other Services</td>
<td>Publications</td>
</tr>
<tr>
<td>Conservation of Sharks</td>
<td>Research and Development</td>
<td>Fishing Trip at Sea</td>
</tr>
<tr>
<td>Solar and Fisheries</td>
<td>Alternative Skill Development Programme</td>
<td></td>
</tr>
</tbody>
</table>

Other agencies supported

- Long line training by CIFT
- Support from MPEDA for GPS, Fish Finder, Ice Boxes, conversion of vessels in to tuna long liner
- National Fishworkers Forum

Significant changes/Achievements

- Call from the Deep Sea: 20 years of Existence (1992-2012)
- Partnership with BOBP-IGO
- Solar energy used deep sea fishing boat
- Solar energy to the OBM boat
- Solar lantern to cattamaran fishermen and fish vending women
- Solar lantern assembling training
Significant changes/Achievements

- National Strategic Consultation on Green Technology for Fisheries Sector (MNRE, GoI)
- National Mission on Conservation of Sharks-India
- Post Harvest Knowledge sharing-Sri Lankan Visit
- NABARD funded project “Solar Energy Boat in Kanyakumari”
- NFDB funded Project “Solar powered refrigerated truck for transportation fresh fish”
- Tie up with Jagath Solar Energy Pvt Ltd

Future programme

- Solar powered small ice making unit for fish vending women (developing stage)
- Solar powered tricycle for fish transportation
- Solar powered O&B with navigational and safety equipments

MARKETING

- Advance from middlemen, merchants
- Price fixed not by the fishermen
- Authorized and unauthorized deductions
- Fish taken by loading and unloading workers
- Cleaners
- Watermen

Challenges/problems

- Son of soil issues
- Trawlers-Indian and Foreign
- Destructive type fishing methods
- No healthy competition in the market
- Facilities in the boat –No space management, GG, Gears, Navigational Equipments
- Harvest the maximum
- Post Harvest loses

Significant changes/Achievements

- Partnership with HIS-India
- Association with CIFT
- Fisheries College and Research Center-Thoothukudi

Future programme

- Land based solar energy station
- Sea based solar energy station
- IEEE services for deep sea fishers
Challenges/problems

- Formulation of schemes not consultation with the stakeholders
- Cross border issues
- No safety at Sea
- Lack of Seamanship
- Not much concentration on pre-post harvest
- Not paying much attention to safeguard our environment

Challenges/problems

- No timely and effective rescue operation at sea
- Lack of communication facilities when fishermen are in distress
- Long time to wait to get the death at sea benefit
- Poor attention on Thengapattanam fishing harbour

Views and suggestions

- Phase by phase stop all foreign fishing vessels.
- Encourage artisanal deep sea fishers and promote their fishing.
- Supply of fuel at International price
- Provide facilities for landing and berthing in all fishing harbours.
- Organize effective training on pre-and post-harvest
- Extend the services of BOBP-IGO in Arabian Sea under special scheme

Views and suggestions

- Develop research and mechanism on Information and communication technology in deep sea fisheries
- Encourage solar energy in fishing boats and fisheries
- Explore the possibilities of developing eco friendly fishing boats
- Organize several awareness programs
- Organize training programs
- Make study on the artisanal fishers of Thoothoor area

Views and suggestions

- Better contacts with local exporters and initiatives for Improving better market
- In certain cases, subsidy can be replaced with incentives or economic benefits
- Cordial relationship with neighbor countries
- Organize activities on marine regulation acts, wildlife acts for fishermen
- Thoothoor artisanal deep sea fishermen can give long line training

Our advisory Board

Dr. YS Yadava
Director, BOBP-IGO
Mr. V Vivekanadan
Secretary, FishMARC
Mr. Sathish Babu
Director, ICFOSS
thanQ
Improving and Sustaining Livelihoods of Small Fishers

SIFFS Experience

X. Joseph, Dy.CEO Executive
South Indian Federation of Fishermen Societies (SIFFS), Trivandrum, Kerala, India

Main livelihood issues of traditional fishers in 80’s

- Exploitation by the middlemen-money lender-merchant nexus, leading to lack of fair price for the catch
- Lack of formal and institutionalized credit systems coupled with the absence of savings mentality among the communities
- Lack of control over fishing inputs (boats, motors, nets, repair services)
- Lack of technical support for fishing livelihoods
- Absence of financial and technical support systems for fisherwomen who play important role in fish economy, especially in post harvest phases

SIFFS intervention

- Setting up of village level societies that ably integrate marketing, credit and savings
  - Credit used to “release” the fishermen from middlemen
- Formation of a three tier structure with SIFFS as overall apex to ensure economies of scale in credit, inputs, technical services, etc. and to act as permanent support system to village level societies
- Introduction of technology to enhance productivity and incomes
- Development of microfinance programme at apex body level to cater both to fishermen and fisherwomen; development of credit programmes to cater to various livelihood needs; introduction of insurance products and savings for old age

The three tiers

The primary society

- The primary society is an autonomous local organisation of the fishermen which controls the beach level sales of the fishermen
  - It ensures a competitive price for fish, proper and timely payment
  - It integrates fish marketing with savings and credit
  - It makes source deductions for savings (2%), society commission (3%) and loan repayment (10%-15%)
• Over 166 village societies that work towards fishing livelihoods by integrating marketing, credit and savings
• System of fair pricing sans exploitation achieved for 50000 fishing families in 12 districts of South India

### The Impact

<table>
<thead>
<tr>
<th>Fish variety</th>
<th>Price in Rs</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seer fish (per kg)</td>
<td>90</td>
<td>170</td>
<td></td>
</tr>
<tr>
<td>Tuna (per kg)</td>
<td>15</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Mackerel (per fish)</td>
<td>6</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Reef cod (kg)</td>
<td>35</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Sardines (per 100 fish)</td>
<td>15</td>
<td>35</td>
<td></td>
</tr>
</tbody>
</table>

Savings in interest income
Bargaining strength

### The District Federation
- supervises the societies affiliated to it
- organises new societies in its area of operation
- organises inputs supply like nets, boats, etc.
- provides linkages for fish marketing and credit
- runs businesses like net Shops, boat building, motor servicing, fuel marketing etc.
- organises welfare activities

### SIFFS Activities
- Technological Services
- Membership/cooperative services
- Information Services
- Post Harvest and Marketing services
- Other services

### Technological services
**Boat building:**
- SIFFS introduced marine plywood technology based on “stitch and glue” technique in early 80s.
- Building quality boats at reasonable prices using alternative materials like marine plywood and glass fibre materials
- Wide range of decked and canoe models being manufactured by network of SIFFS 8 boat yards.
- Development of new boat designs

**Out Board Motors:**
- Import and supply of OBMs and spares
- Main dealer for Suzuki OBMs
- Chain of service stations
- Spare parts shops
• Technology support to reduce the risk of fishing operations

Member/Cooperative services
• Expansion of society network (New society formation in areas where Dist Federation is not formed)
• Credit/Financial Services (Linkages for Bulk loans and insurance)
• Strengthening Member Federations (training, strategy formation, linkages)

Information services
• Fisheries Management Initiatives
• Policy Research and Documentation (Census of fishing fleet, topical studies)
• Information dissemination (Seminars, exchanges, publications)
• Information technology (for MIS, member societies, etc.)
• Advocacy and lobbying (Support for fishermen causes; ARIF)

Other services
• Training for alternative employment (carpentry, fibreglass, OBM servicing, Computer training)
• Support to fisherwomen’s organisations (professional, technical and financial)

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Some Facts

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of Districts Covered</td>
<td>19</td>
</tr>
<tr>
<td>No. of Societies</td>
<td>166</td>
</tr>
<tr>
<td>No. of members</td>
<td>9264</td>
</tr>
<tr>
<td>Annual Fish catch value</td>
<td>Rs 1200 million</td>
</tr>
<tr>
<td>Total Loan outstanding</td>
<td>Rs 140 million</td>
</tr>
<tr>
<td>No. of Boat yards</td>
<td>8</td>
</tr>
<tr>
<td>No. of OBM workshops</td>
<td>22</td>
</tr>
</tbody>
</table>

The Lessons
- Marketing, financial services, technology, control over fishing inputs, etc. have to be integrated for effective intervention in small scale fisheries
- High impact and sustainability is best achieved through organisations owned by fisherfolk.
- Village level fishermen institutions could play a major role in Co-management of Fisheries Resource
- Effective partnerships with banks, insurance companies, exporters, input manufacturers, etc. essential
- High repayment levels for fishing loans possible when linked to source deduction from marketing and when repayment is a percentage of catch value rather than EMI
ISSUES IN SMALL-SCALE MARINE FISHERIES
– Challenges of SIFFS


Increase in Investments and Operating Costs - fishermen getting increasingly dependent on loans to finance their expenditures and also using loans as coping mechanisms.

Migration: Instances of migration have increased, as resources in near shore waters get over fished. Only a survival strategy. There are all kinds of socioeconomic implications of this trend.

Arrests and Detention in Third Countries

Safety at Sea: Fishing is a high-risk profession. The risk is particularly high during cyclones and other natural calamities. Fishermen are going deeper waters with their motorised carft without proper safety measures. Not ready to invest in safety equipments as it does not yield any return.

Pollution and Degradation of Coastal Resources - highly vulnerable to the activities of other land-based sectors - industry, agriculture, tourism, urban expansion, etc. The fisheries sector is also at the receiving end of pollution by sea-based activities -shipping and oil exploration.

Post Harvest problems: Marketing is highly depending on middle men and money lenders. Lack of holding capacity on the beach. Lack of water and approach road facilities in the beach landing centre. Improper hygienic and handling of fish by vendors.

Insufficient Fuel supply: Most of the state govs allot fuel permit for OBMs used by fishermen which is not adequate for their fishing operation – still they depend on black market

Partiality of state schemes: Loan waiver facilities and subsidies only for govt co-ops members not for all fishermen.

Central Govt policies:
- In view of increase the production government has issued Letter of permission for Foreign vessels with lots of facilities including heavy fuel subsidy which are not available for small scale fishery to tap the deep sea resources.
- Govt has not shown proper and adequate attention to the cross border problem. (Pakistan, Sri Lanka, Maldives)
- Agriculture implements attracts 4% VAT in most of the states where as fishing implements which is also coming under agriculture attracts 12.5% VAT

SIFFS’ Initiatives to address the challenges
- Advocacy and Lobbying through networking with other stakeholders including fishermen trade unions and associations
- Promoting Fisheries Management (Co management Initiatives)
  - Palk Bay – the concept of capacity reduction
  - In Nagapattinam and Karikal region - an attempt to create a district level community based fisheries management council
  - In the tsunami affected Alappad Panchayat area (in Kollam district in Kerala), SIFFS initiated a process of dialogue for a system of self regulation
  - MSC Certification initiatives of Oil Sardine in Kollam, Kerala
  - Active participation in FIMSUL Project of Tamil Nadu Govt
  - Lobster Fisheries Management in Kanyakumari Dist – FIMSUL

SIFFS... the way ahead is towards
- development and empowerment of fishing communities
- creation of better institutions
- sustainable livelihoods
- Sustainable fisheries
Thank You
Safety at Sea as an Integral Part of Fisheries Management

Bay of Bengal Programme
Inter- Governmental Organisation
info@bobpigo.org

In spite of scientific and technological advancements, marine capture fisheries in the region is probably more risky now than its used to be few decades back. Reasons: Fish Olympiad, venturing further into the sea and negligible increase in safety parameters.

About 1/4th of the world’s population resides in the littoral countries of the Bay of Bengal (BOB), approximately 400 million of whom live in the Bay's catchment area, many subsisting at or below the poverty level.

The BOB unlike many other seas is rough for most parts of the year, cyclones are frequent and come without warning. The monsoon increases the perils of fishing at sea.

With the resource getting scarce in the coastal waters, the fishermen are venturing deeper into the sea risking their lives. Some get drifted and end up in alien land. Some fail to return.

And this leads to a long and tortuous vigil for the family. Most perish and leave behind the widow and destitute children.
Besides loss of vessel, instability, capsizing, down flooding (holes in the deck, for example), fire, explosion, collision, and over-loading are some of the other causes of fishing deaths.

Creating a safer working environment for artisanal and small-scale fishers is a huge challenge. It merits urgent and critical attention from all concerned, especially the donor countries that can provide the much-needed assistance for implementing a long-term programme on sea safety in the region.

**Policies**

- **S@S is not an integral part of fisheries management.**
  - Negative impact of policies on S@S are overlooked and possible safeguards are not proposed.
- **Lack of surveillance mechanism.**
- **Lack of insurance programmes.**

**Institutional arrangements**

- ‘No work no pay’ business principle.
- Owner-labour dichotomy.
- Investment mainly on increasing fishing capacity.
- Unorganized labour market with excess supply- low bargaining power.

**Communication**

- Weak mobile coverage (5 km from coast)
- Needs improvement in reliability of early warning.
- Low prevalence of GPS/ VHF
  - Lack of awareness.
  - “For big vessels only” argument.
  - Price.
  - Lack of legal requirement and enforcement.

**Knowledge & Skills**

**Navigational skills**

(especially > coastal waters)

**Understanding weather signals**

**Distress signaling**
Life-Saving Appliances

- Inadequate personal protection equipments (PPEs)
  - Especially in Bangladesh and India.
  - Price considerations by owner.
  - Lack of enforcement.
  - Lack of voice of fishermen.
  - To save storage space.

Vessel designing

- Lack of certified or trained naval architect and boat builders.
- Lack of training in handling FRP properly
- Shortage of good quality wood.
- 'Fly by the nights' boat builders.
- Lack of national code on vessels designing, registration of boat yards, standardization of quality, etc.

Safety measures have to be tailored to meet the specific requirements of each country in the BOB region, in cooperation with policy makers, legislators, vessel owners, fishermen and other stakeholders.

Vessel designing & construction

Adaptation of FAO/IMO specifications.
Strict law for quality assurance.
Technology diffusion.

Navigation, Communication and PPEs

- Drive for enforcement
- Legal support and enforcement (Bangladesh)
- Awareness drive
- Identifying technology suitable for typical fishing vessels of the region.
- Voyage plan.

Manpower

Training of skipper and crew of fishing vessels below 24 m LOA.
Creation of a cadre of trainers to meet the training and inspection requirements.
**Safety nets**

- Implementation of ILO resolution on fisheries sector.
- Insurance of assets (as a condition for registration).
- Insurance of Life.

**Human Resource development**

- Gender mainstreaming
- Hands-On training for fishermen
- Training for boat builders.
- Training of government officials.

**Surveillance and accident reporting**

- Minimum Response Time is optimal.
- Improve reporting and voyage plan
- Disaster preparedness.
- Improving existing accident-reporting mechanism.

**Integrating safety at Sea into Fisheries management**

- Cooperation in early-warning system.
- Multi-functional mobile sets and increased network coverage.
- Promotion of personal hygienic practices.

---

To ensure integration of sea safety measures in the day-to-day life of the fishermen, it is essential that they be built around the entire community and not the fishermen per se.

Extension programmes are necessary for the fisherwomen so that they can persuade the men-folk to use safety measures for their protection and for the protection of the family.
Safety at sea should be an integral part of fisheries management. Implementation of sea safety programmes should include mandatory regulation and a sound implementation mechanism, training and education, prevention and survival strategies, etc.

Thank you!
Use of Print and Electronic Media for Delivering Messages

S Jayaraj
Publication Officer, BOBP-IGO

Communication – Mass media

Different mass media is used to effectively communicate knowledge and information to people for developmental purpose.

Communication is used for more than just passing on information from one person to another. It is often used as a tool to facilitate the participation of people in developmental activities. Such form of communication is known as development communication.

Communication is a two way process where messages flow both ways. Communication also refers to that use of different forms of media, such as print, electronic media (radio, television), web media etc. These media are used as an empowerment tool. It is used as a tool to facilitate and encourage the participation of people in developmental activities.

In Development Communication there are two words – ‘Development’ and ‘Communication’.

Meaning of these two words: 
Communication is a message understood or sharing of experience. Development is about change. It is about changing for the better. It could be about social or economic change for improvement or progress.

Development communication can be defined as the use of communication to promote development.

Media like Print media (Newspaper, Brochures, leaflets, Posters etc.,) and Electronic media plays a significant role in development communication in this world.

The history of development communication in India can be traced to 1940’s when radio broadcast was done in different languages to promote development communication through various programmes—Programs for Rural Audience, Educational Programs and Family Welfare Programs etc.

Today television in our country is also used as a medium for education, social awareness and Teleconferencing etc.
Even after the advent of electronic media-like radio and television, the print media has not lost its charm or relevance.

Print medium was the first to be used as mass media for communicating the information. Till today print media is one of the powerful media among the rural people.

Print media has the advantage of making a longer impact on the minds of the reader with more in-depth reporting and analysis.

About weather or any information happening in this world...

Where will you look for details?

.....In a newspaper or in the television and Internet to know more about in detail.

Newspapers play a very important role in our daily life.
We read the newspaper for: news, entertainment and information. The contribution of print media in providing information and transfer of knowledge is remarkable.
Now-a-days, print media is faster than all ever before due to amazing advances in technology in recent years.

As far as the print media is concerned, in India after Independence when the Five Year Plans were initiated by the government for planned development, it was the newspapers which gave great importance to development themes. They wrote on various government development programs and how the people could make use of them. They cover about farming, fishing, trading and related subjects and information about weather, market rates, availability of improved seeds etc.,

Print medium was the first to be used as mass media for communicating the information. Till today print media is one of the powerful media among the rural people.

History of Printing
The Chinese were the first to invent the art of printing. They made wooden blocks to print letters. This was started during the period of the Tang Dynasty in 600 AD.

The first printed book published in China was the Buddhist text, the “Diamond Sutra” by Wang Chick in 868 AD.

The first newspaper was published by Johann Carlous in 1605.

Do you know which is the largest circulated newspaper in the world?

The largest circulated newspaper is the “Yomi Yuri Shimbun” published from Japan. It has a circulation of 1,45,57,000 copies per day.

The second and third largest circulated dailies in the world are also published from Japan.

The first paper mill was started in Europe in the year 1120.

Newsletters circulated by rulers were the first form of newspapers. In India, the East India Company circulated such newsletters.

The top ten newspapers in world according to circulation in 2009 were:
1) ‘Yomiuri Shimbun’ in Japan with 14,067,000 copies in Japanese
2) ‘Asahi Shimbun’ in Japan with 12,121,000 copies in Japanese
3) ‘Mainichi Shimbun’ in Japan with 5,587,000 copies in Japanese
4) ‘Nihon Keizai Shimbun’ in Japan with 4,635,000 copies in Japanese
5) ‘Chunichi Shimbun’ in Japan with 4,512,000 copies in Japanese
6) ‘Bild’ in Germany with 3,548,000 copies in German language
7) ‘Reference News’ in China with 3,183,000 copies in Chinese
8) ‘The Times of India’ in India with 3,166,000 copies in English
9) ‘The Sun’ in United Kingdom with 2,086,000 copies in English
10) ‘People’s Daily’ in China with 2,808,000 copies in Chinese

The Times of India (TOI) is an Indian English Newspaper ranking world’s largest selling English daily of over 3.14 million with 7.6 million readership.

Internet is a computer based worldwide interlink network. It has no country barriers. So a person sitting in India can access an internet site in USA or UK through the computer network.

This has made revolutionary changes in communication the world over.

Recently almost all newspapers have internet editions.
The information provided by a newspaper is usually more authentic and genuine but it is not in case of electronic media. Electronic media depends mainly on electricity. In areas with frequent power cuts or in the rural areas, it is not a viable replacement for newspapers. Print media is easily accessible and widely read. Anyone can buy it since it is cheaper and available in the remotest of the villages. In a country like India, subscribing to newspapers is cheaper than taking an Internet connection.

Print Media:
- Newspaper (Daily- Morning or Evening)
- Magazines (Weekly, Monthly or Bi-monthly)
- Brochures
- Newsletters
- Reports
- Leaflets or Handouts
- Banners and Billboards
There are many great advertisements that may appear very different on the surface, but ultimately all follow a simple rule: less is more.

Though print and electronic media deal with mass communication, there are certain basic differences:

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Print Media</th>
<th>Electronic Media</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Literacy is a basic requirement for the print media. Only a literate person can read it.</td>
<td>Even an illiterate person can watch a news bulletin and grasp its contents though the written matter on the screen cannot be read.</td>
</tr>
<tr>
<td>2.</td>
<td>Print media works according to a deadline. Usually a morning paper carries news received up to the midnight of the previous day.</td>
<td>There is no deadline for the electronic media. News can be updated anytime.</td>
</tr>
<tr>
<td>3.</td>
<td>In print media readers have the choice to go back and recheck what they have read.</td>
<td>Viewers cannot go back and recheck what they have seen.</td>
</tr>
<tr>
<td>4.</td>
<td>Print media provides more scope for in-depth analysis of events.</td>
<td>Less scope for such long in-depth analysis.</td>
</tr>
<tr>
<td>5.</td>
<td>Print media does not provide scope for a live discussion.</td>
<td>Live discussions are possible</td>
</tr>
<tr>
<td>6.</td>
<td>Language is more literary and flowery and reader – friendly.</td>
<td>Language used is spoken and more viewer – friendly</td>
</tr>
<tr>
<td>7.</td>
<td>Frequent update of news is not possible.</td>
<td>Even a minute-to-minute update is possible</td>
</tr>
</tbody>
</table>

Can you imagine a world without News paper, TV and Internet?

Thank you...!!
Preparation of Banner, Badges and Documents

This presentation takes you through the essentials of preparing the basic meeting requirements such as banner, badges, etc. The presentation also briefly deals with in-house preparation of documents that can be provided as camera-ready copies to the printer for printing purposes.

Banner

- Size / Format
- Colour scheme
- Software to prepare the design
- Titles, logos and graphics

Size of the Banner

- Usual dimensions: 3-4 ft height and 8-15 ft width

Colour Scheme and Content

- Choose the colour scheme according to the background and place the graphics with text.

Software to prepare the design:

- Adobe Photoshop
- Adobe Illustrator
- Adobe Indesign
- Corel Draw, etc.

Titles, logos and graphics

Annexure 22
Badges

- Colour scheme
- Size
- Software/design/graphics
- Laser or Inkjet Printing
- Lamination

Documents

- Newsletter
- Reports
- Brochure
- Poster
- Presentation
- Awareness material, etc.,

Format – Vertical, horizontal or square
- Colour – Single/multicolour
- Text, content and no. of pages
- Design and layout – Software and graphics
- Paper
- Printing/quality output

Offset Printing Machine

Flex Printing Machine
Thank you!
Photography
Good photography – Art or Science?

S Jayaraj
Publication Officer - BOBP-IGO

Some tips on photography
This presentation provides some tips on good photography that can contribute to your organization’s visual archives, and can also be used for documents/publications such as reports, newsletters, posters and other communication materials etc.

EQUIPMENT

- Types of Camera (Digital)
  - SLR (Single Lens Reflexive)
  - COMPACT CAMERA

Some Important points ...

- Check the equipments and accessories
- Handling the camera
- Focus on the subject

Some basic principles to follow before you use the camera

- Think Before You Shoot
- Plan the Background, Lighting and settings...

5 Cs to get a good picture

- Colour
- Composition
- Contrast
- Camera angle
- Close-up
Focus on the Subject

Camera Angle:
- Eye Level
- Top Angle (Looking from Top)
- Low Angle (Looking from below)

Use these angles to get a good picture
How to Dramatize a picture

Silhouette
Conclusion

You may now agree with me that good photography is a combination of both Art and Science!

Happy clicking…!
Developing sustainable livelihoods for small-scale fishers

C.M. Muralidharan
BOBLME

Significance of small scale fisheries

- provide a host of social and economic benefits to local communities
- contribute about half of the global catch
- supply food for local, national and global markets
- responsible for about 90% of fishing employment
- provide income, contribute to food security and nutrition, alleviate poverty
- support a way of life strongly anchored in local culture and community

Characteristics of Small Scale Fisheries

- Employing labour intensive harvesting, processing and distribution technologies in fisheries
- Fulltime, part-time, or seasonal activities
- Supply fish/fishery products to local, domestic markets, and for subsistence consumption (contribution to export markets increasing)
- Typically men are engaged in fishing and women in fish processing and marketing
- But in some cases vice versa

FAO voluntary guidelines on SSF

- After a series of participatory consultations across the world
- FAO developed and finally accepted
- Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication
- In 2014
SSF key guideline points

› SSF communities need to have secure tenure rights, to equitably distribute benefits from responsibly managed fisheries.
› responsibilities for long term conservation and management of fishery resources,
› include SSF communities in the design, planning and implementation of management systems to sustain fisheries and communities
› ensure that women are equitably included in all aspects of the process.

SSF key guideline points

› Post-harvest and trade sectors are critical to the security of SSF communities (including women)
› They must be included in the design, planning and implementation of these parts of the value chain.
› social and economic development needed to ensure that marginalized SSF communities can have secure livelihoods and enjoy their human rights.
› put in place policies and plans to address significant risks to SSF communities from disasters and climate change.

SSF key guideline points

› need to respect and make use of traditional knowledge, in addition to knowledge from scientific research, in support of SSF;
› communicating the data in an efficient and transparent way.
› high-quality fisheries management systems in near-shore environments of great ecological value.

SSF livelihoods challenges

› Highly dependent on natural resource base
› Increase in fishing effort within
› Competition from outside sector affecting resource base and returns
› Threatening sustainable livelihoods of SSF
› Resource management measures/ regulations often excludes SSF fishers from resources, decision making and implementation

Ecosystem approach in Fisheries management and sustainable livelihoods

EAFM–Inclusive holistic approach

› consider fishers and fishing fleets in the context of where fishers live and work – in households, communities and fishery–based economies
› just as it deals with the fish in the context of where the fish live – the ecosystem.
› look beyond just “fish and fleet”
Livelihoods
Livelihood comprises the
- capabilities,
- assets (including both material and social resources)
- activities
required for a means of living

Sustainable livelihoods
when it can
- cope with and recover from stresses and shocks
- maintain its capabilities and assets both now and in the future
- not undermine the natural resource base

Sustainable Livelihood Approach to suit coastal livelihoods
- Developed by DFID
- And followed by many development organizations
- useful for understanding the complexity of the lives of coastal people and their livelihood strategies and outcomes

Plan and implement sustainable livelihoods programmes in SSF
- Enhancement and diversification of Livelihoods
- Livelihoods enhancement within the sector across value chain
- Diversification of livelihoods
  - supplementary livelihoods
  - alternative livelihood.

Coping and adaptive strategies
- Fishers always had
  - coping strategies for negative changes
  - adaptive strategies for positive change
- Coping or adaptive strategies are successful to different degrees
- Some of the coping or adaptive strategies make them more vulnerable
Building up from what exists

- Livelihoods intervention planning needs to be
  - build up from their natural coping and adaptive strategies
  - By helping them address the gaps in the five asset areas,
  - By reducing the vulnerability factors
  - By providing most appropriate support
  - By helping them become independent.

Why do many of the Livelihoods interventions fail

- Introduction of technologies or skills totally new or unsuitable for a local area,
- Blindly copying interventions from elsewhere.
- Interventions are not in tune with the local available resources.
- Interventions are not in tune with the local available resources.

Approach to Livelihoods planning

- Many approaches in the recent past
- The approach given here is more based on experience from Fisheries Management for Sustainable Livelihoods – Tamil Nadu and Puducherry, India.

Stakeholder analysis and Identifying livelihoods groups

- Conduct regional (district level) stakeholder (primary fisher representatives, Department of Fisheries, relevant NGOs and other relevant agencies) meetings
- To identify key livelihoods groups in fisheries with respect to the region.
Focus group discussions (FGD) with livelihoods groups

- FGD with each identified stakeholder group in each area.
- To develop a clear understanding of the following:
  - Key changes in livelihoods;
  - Adaptive strategies for dealing with livelihood change;
  - Supporting factors in dealing with livelihood change;
  - Inhibiting factors in dealing with livelihood change;
  - Positive future changes;
  - Aspirations

Deciding on livelihoods intervention areas

- The livelihoods intervention areas are broadly decided based on:
  - Promoting the positive changes
  - Mitigating the negative changes
  - Drawing upon the adaptive strategies and supportive factors
  - Addressing the inhibitive factors
  - Working towards their aspirations
  - Access based on preference and priority to necessary resources, skills, financial resources and market or that can be easily build up

Livelihoods interventions to be tailor made to local situations

- Recognise and build up on the existing strength of the community (skills / social and economic set up)
- Build capacity of the beneficiary or beneficiary group(s) to make informed choices.
- Provide a comprehensive package linking technology /skill up to all associated services and institutions, raw material, infrastructure, networking of producers for material and marketing, credit support, etc.

Livelihoods interventions to be tailor made to local situations

- Provide the necessary trainings and hand hold to sustainably establish the livelihood activity
- Enable them to adapt to the changing trends.

Other broader considerations in promoting sustainable livelihoods

- Focus on building the economic basis of livelihoods by:
  - Giving coastal people the skills that address the root causes of vulnerability
  - Build resilience to cope with the future
- Young ones need to be given all opportunities and support to get quality education that enables them choose a career of their own.
- Provision of health services, housing and other amenities

Conclusion

- The small scale fisheries sector contribute to:
  - Global fisheries,
  - The livelihoods and food security of a large community
  - To the national and global economy.
- But ensuring sustainable livelihoods for the sector has always been a challenge.
Conclusion

Promote sustainable livelihoods
- By developing an understanding of the livelihoods using the sustainable livelihoods framework
- Having a holistic approach on fisheries livelihoods enhancement and diversification.
- A bottom up, tailor made approach,
- Building up from the local strengths and opportunities
- Ensuring all forward and backward linkages is the key for success.
Marine Protected Areas

Marine Protected Areas and Fisheries Management
International Collective in Support of Fishworkers (ICSF)

Marine Protected Areas

- Often it is only biodiversity conservation that has been the focus and not fisheries perspectives, in most cases

(Source: FAO Technical Guidelines for Responsible Fisheries. No.4: Marine Protected Areas. 2011.)

Marine Protected Areas

- According to the FAO Technical Guidelines (2011), it is defined as
  “any marine geographical area that is afforded greater protection than the surrounding waters for biodiversity conservation or fisheries management purposes will be considered an MPA”
- Besides the FAO definition, there is definition from the Convention on Biological Diversity (CBD) and the World Conservation Union (IUCN)
- FAO definition is inclusive, as spatial management measures and area closures for fisheries management purposes as well as biodiversity conservation are considered as MPAs.

Terminology

- Normally MPAs are often known by terms such as
  - National parks, wildlife sanctuaries, biosphere reserves, marine reserves, marine parks, ocean sanctuaries, no-take zones, fishery closed areas, fishery refugia, locally managed marine networks,
  - Ranges from village-level, local area based to nation wide, bi-regional, to region wide MPAs
  - MPAs can be declared in internal waters, territorial sea, exclusive economic zones and now increasingly high seas
- Large network of MPAs as seen in the case of “Coral Triangle Initiative”
  - MPAs are declared as blue carbon sinks, to protect against climate change impacts
  - According to FAO definition, even the concept of Large Marine Ecosystems can be considered as MPAs

MPAs and Fisheries Management

- There are numerous spatio-temporal management measures in fisheries, such as
  - To protect fishery specific habitat or species (ban during spawning season, protecting breeding habitats, protecting coral reefs, mangrove habitat)
  - Rebuilding fish stocks
  - Support traditional and local sustainable fishing practices (artisanal fishing zones)
  - As conflict-resolution measures (area closures- no trawl zones etc)
  - Protect sites of cultural importance
  - Restricted access rights
  - Sedentary species protection
  - Implement ecosystem- based approach and precautionary approach
  - Protecting customary and traditional rights of indigenous people and local communities

Spatial management measures

- Closed fishing season (monsoon ban)
- Trawl-free zone/artisanal fishing zones
- Customary practices such as closed days for reef management, adat practices in Indonesia,
- However, often Spatial measures declared for fisheries management purposes are not considered as MPAs, by conservation managers
Fisheries management vs Biodiversity conservation

- Often the two goals are seen very differently
- CBD, COP 10, set a 10 per cent target. At least 10 per cent of the marine and coastal biodiversity to be declared as MPAs and protected
- Community-initiated area-based fisheries management efforts often not recognized as MPAs
- Declaration of large no-take zones are often recognized as MPAs, and need to declare larger networks

Fisheries vs biodiversity

- MPAs can be seen as one of the tools for fisheries management, not the only tool
- Myth "need for large no-take zones", this only affects fisheries yield, and communities dependent on resources
- No need for large areas to be closed
- Area-based closures are ideal for certain species
- Often declared by Environment Ministries/Department and not fisheries departments

Fisheries Management

- If 'No-take Areas' are implemented, without other fisheries management measures then
  - Fishing efforts are shifted to areas outside the no-take zones, increasing pressure in those areas
  - Destruction of habitat in areas outside the no-take zones
  - Pollution, and other land-based environmental impacts also need to be taken into account, before declaring just large 'no-take' zones for fishing

Human Dimensions of MPAs

- Cost-benefit sharing is disparate
- Benefits are mostly felt by
  - Tourism sector
  - Recreational fishers
  - Large-scale fishers fishing outside the MPAs
  - In certain cases, where MPAs are declared by communities, they can see the benefit (as seen in Thailand)

Human dimensions of MPA

- Impact on fishery-dependent communities
  - Loss of access to traditional fishing grounds, maximum impact to artisanal/small-scale fishing communities
  - Livelihood loss, leading to migration in certain cases, as alternative livelihoods offered are not sustainable
  - are often not aware of declaration of such sites as MPAs, leading to alienation, victimization and conflicts with authorities
  - No provisions for them to participate in the decision-making process
  - Accessing new fishing grounds farther off, can lead to safety issues, and other occupational hazards, besides increase in operational costs

Communities perceptions

- MPAs are only 'no-fishing zones' where all forms of fishing is completely prohibited
- Alternative livelihoods to be provided to move fishers out of the area, and to allow tourism and other sectors to continue
- Communities rights over resources are not recognized
- Conflict with authorities over resource use
Challenges

- MPAs in fishery dependent areas
- Access to resources and fishing areas to be provided to communities for sustainable use of resources
- Need to develop participatory frameworks for involvement of communities in all stages—design, designation, management, and monitoring
- Include traditional and local knowledge in developing criteria for management of MPAs
- Develop governance frameworks including—co-management and community-based management where communities are given equal power in decision-making
- Develop mechanisms for equitable sharing of benefits from conservation initiatives
- Integrate fisheries management objectives with conservation objectives
- Develop holistic legal framework that take into account marine and coastal biodiversity aspects including fishing

Importance of Human Dimensions

- Community-initiated measures for declaring area-based measures, leads to
  - Participatory development of rules and regulations
  - Better compliance of such rules and regulations
  - Community monitoring of impacts of such closures
  - Recognize customary/traditional area-based measures
  - Including traditional knowledge
  - Equitable benefit-sharing mechanisms
  - Combine sustainable livelihood options with conservation and management of resources

Community Conserved Areas

- India
  - Ministry of Environment and Forests, declares national parks and wildlife sanctuaries, 31 MPAs, with 5 important MPAs (Wildlife Protection Act)
- Bangladesh
  - Fisheries Department, over 700,000 ha under MPAs.
- Myanmar
  - Ministry of Environmental Conservation and Forestry, has 4 MPAs (Protection of Wildlife and Protected Areas Law )
- Indonesia
  - Ministry of Marine Affairs and Fisheries, and Ministry of Forests, total of 76 MPAs (of which 40 still managed by Ministry of Forests)
- Maldives
  - Ministry of Fisheries and Agriculture, over 25 MPAs, only sustainable and eco-friendly fishing allowed in its maritime waters
- Sri Lanka
  - Department of Wildlife Conservation, 2 Marine reserves, Special conservation areas
- Philippines
  - Fishery areas known as “Traditional Fishing Areas” (the government recognizes 27 such areas)
- Thailand
  - South Thailand, has 4 areas (Trang, Phangnga, and Phuket) has been made as marine protected areas
  - Other areas, like the Gulf of Thailand, are managed as marine protected areas

- Artisanal fishing areas in south and south east Asia
Understanding and communicating climate change

S. Gopikrishna Warrier
Regional Environment Manager, Panos South Asia and Secretary, Forum of Environmental Journalists in India
30 September 2014

The premise

The Assessment Report 5 of the Intergovernmental Panel on Climate Change (IPCC-AR5), released in 2013-14 states:

- The global temperature will increase between 2.6 and 4.8 degrees Celsius by 2100. The annual average temperature over land in most of South Asia will increase by more than 2 degrees Celsius.
- Global mean sea level rise by the last two decades of the 21st century (as compared to sea levels in 1986-2005) will likely to be in the ranges of 26-55 cm under a low-emissions scenario, and 45-82 cm for a high-emissions scenario. This magnitude of sea level rise by the century’s end implies significantly increased risks for South Asia’s coastal settlements, as well as for coastal economies, cultures and ecosystems, particularly if combined with changes in cyclone frequency or intensity.

We have different national concerns about climate change

- Bangladesh – Floods, disaster
- India – equity and CBDR
- Indonesia – deforestation, forest fires
- Maldives – small island state, sea level rise
- Myanmar – mountains, forests
- Sri Lanka – sea level rise, coastal tourism, post civil-war politics

What do we know about climate change?

In November and December of 2011, a research team from Yale University conducted a national survey of 4,031 Indian adults, using a combined urban and rural sample to understand people’s understanding of climate change.

- 80% of respondents said that the amount of rainfall in their local area had changed in the past 10 years – either decreasing (44%) or increasing (34%)
- 54% said that hot days in their local area have become more frequent, while 23% said they had become less frequent
- 23% said that severe storms and droughts had become more frequent, while 15% said floods had become more frequent
- 38% said the monsoon has become more unpredictable in their local area compared to the past

What do we know about climate change? - 2

- Only 7% of respondents said they know “a lot” about global warming, while 41% had either “never heard of it” or said “I don’t know”.
- When given a short definition of global warming, however, 72% said they believe it is happening.
- 61% said they are worried about global warming and 67% said the issue is important to them personally.
- 50% said they have already personally experienced the effects of global warming, while 43% said that global warming is already harming or will harm people in India within the next 10 years.

The six approaches to climate change: Yale study

- The Informed (19%) – are the most aware and convinced of the reality and danger of climate change and highly supportive of national actions to mitigate the threat.
- The Experienced (24%) – the largest of the six groups – know less about climate change, but are convinced that it is happening and a serious problem, in part because they say they have personally experienced the impacts more than any other group.
- The Decided (16%) – most likely to say that climate change is caused by natural causes.
- The Uninformed (15%) – only one in four is worried about global warming.
- The Indifferent (11%) – least likely to believe that climate change will cause harm to humans and other species.
- The Disengaged (10%) – have never heard of climate change and have no opinion about it, even when it is described. This group is predominantly rural and female and from backward classes.

Only 43% really know and is concerned about climate change.
Despite the long history, people cannot conceptualise climate change

Climate change awareness is low, even though the global community has been discussing climate change since the 1980s...
- The UN Framework Convention on Climate Change came into being in 1992
- The Intergovernmental Panel on Climate Change (IPCC) was created in 1988

Climate change is an add-on

- In most cases, climate change is an add-on to local environmental issues
- The concept of climate change can be far-fetched and difficult to understand
- General public, journalists, administrators and policy makers relate to local environmental issues
- If larger discussions on climate change can be connected to local environmental issues, then understanding and communicating climate change will be easy.

Finding the linkage is critical

- The macro to micro linkage: From international negotiations and national policies to local environmental issues
- From anecdotal to peer-reviewed science
- Climate change is a social, political and economic story

Why should we connect?

- Most of the time we are only vaguely aware of climate change as a concept
- It helps us understand the climate change issues affecting our country vis-à-vis the global negotiations
    - CBDR issue raised by India
    - AOSIS positions for Maldives
- We can then link it to our local environmental situation
    - Afforestation in Indonesia
    - Submergence in Maldives
- We can understand our situation within the larger economic and environmental policy of the country and the world

An opportunity and a challenge

Opportunity
Understanding and communicating about climate change links to multiple areas:
- Diplomacy - international negotiations
- National policy
- Economy
- Industry
- Agriculture
- Health
- Extreme weather events

Challenge
Climate change understanding does not always have simple and direct cause and effect linkages

The first time international community started making the connection – August 2010

- Floods in Pakistan
- Wild fires in Russia
Climate change is an economic story

Our countries have high losses with low insurance

"We will respond to the threat of climate change, knowing that the failure to do so would betray our children and future generations."
- Obama inaugural 2013

[After Hurricane Sandy hit the US East Coast during the Presidential Campaign of 2012]

When does the media cover climate change - World

When does the media cover climate change - India
The macro has to be linked to the micro...
Thank you!
Basics of managing fishing harbours and fish landing centres

By Venkatesan, V

Contents

- World fisheries production and its destination.
- Distribution channels for marine capture fish.
- Fishing harbours (FHs) and fish landing centres (FLCs) (Status of FHs/FLCs in developing countries- Infrastructure; management; Quality assurance; Personal hygiene & environmental management)
- International norms for the management of FHs/FLCs.
- Participatory/co- management of FHs/FLCs.

World fisheries production

- Grown steadily at an average rate of 3.2% during last 5 decades, outpacing population growth of 1.6%. Per-capita consumption increased from 9.9 kg (1960) to 19.2 kg (2012).
- World fisheries production in 2012 was 157.9 mill. tons. Capture & culture fisheries accounted for 91.3 & 66.6 mill. Tons.
- China accounted for 36.3%, India (5.7%), Indonesia (5.6%), Vietnam (3.6%) & USA (3.5%). BOBP/IGO countries : 11.9%.

World fisheries production & aquaculture production

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2010</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capture fisheries</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inland</td>
<td>10.3</td>
<td>11.3</td>
<td>11.6</td>
</tr>
<tr>
<td>Marine</td>
<td>79.9</td>
<td>77.8</td>
<td>79.7</td>
</tr>
<tr>
<td>Total</td>
<td>90.2</td>
<td>89.1</td>
<td>91.3</td>
</tr>
<tr>
<td><strong>Aquaculture</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inland</td>
<td>32.4</td>
<td>36.8</td>
<td>41.9</td>
</tr>
<tr>
<td>Marine</td>
<td>20.5</td>
<td>22.3</td>
<td>24.7</td>
</tr>
<tr>
<td>Total</td>
<td>52.9</td>
<td>59.0</td>
<td>66.6</td>
</tr>
<tr>
<td><strong>Total world</strong></td>
<td>143.1</td>
<td>148.1</td>
<td>158.0</td>
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</tbody>
</table>

Fisheries production of top 5 countries in 2012

<table>
<thead>
<tr>
<th>Country</th>
<th>Million tonnes</th>
<th>% of the world</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>57.28</td>
<td>36.3</td>
</tr>
<tr>
<td>India</td>
<td>9.07</td>
<td>5.7</td>
</tr>
<tr>
<td>Indonesia</td>
<td>8.88</td>
<td>5.6</td>
</tr>
<tr>
<td>Vietnam</td>
<td>5.71</td>
<td>3.6</td>
</tr>
<tr>
<td>USA</td>
<td>5.55</td>
<td>3.5</td>
</tr>
<tr>
<td>Total world including others</td>
<td>157.97</td>
<td>100.0</td>
</tr>
</tbody>
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Fisheries production of top 5 countries in 2012

<table>
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<td>9.07</td>
<td>5.7</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>4.82</td>
<td>3.1</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>3.26</td>
<td>2.1</td>
</tr>
<tr>
<td>Maldives</td>
<td>0.12</td>
<td>0.1</td>
</tr>
<tr>
<td>Total</td>
<td>17.27</td>
<td>11.0</td>
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</table>
Fish destined for human consumption is on the rise - from 71% in 1980 to 86% in 2012.
In 2012, 41% consumed in live, fresh & chilled, 12% in dried, 13% in prepared & 29% in frozen form.
Major innovations & technological improvements are responsible to expand distribution.
Fish – a most internationally traded commodity. In 2012, 200 countries involved in exports; 37% of world production valued US $ 129 billion traded.
Marine fish distribution channel is comparatively complicated as fish harvested from seas pass through various distribution channels to reach end users.

Supply chain can be simple.
May involve a large number of stakeholders as in the case of export-originating from a developing country and ending in an electronic auction of a developed country.
Fish marketing regulations also influence distribution. E.g. The Marine Fish Ordinance of Hong Kong, restricting operations in seven wholesale markets only; Rigid Japanese distribution structure etc.
Distribution chain/system influence the design and construction of FHS & FLCs.

Fish can be landed anywhere from fishing vessels
open beach; river bank etc. with handling facilities. (e.g. beach landing centres in India, Sri Lanka etc.)
Pontoons & barges also help to land fish.
Landing site for commercial operations – facilities and infrastructure integrated into establishments on shore (wharf, auction hall etc.).
Inadequate Infrastructure

- Four types of landing centres recognized:
  - Fully developed artisanal landing centre (to handle inshore fishing day boats with shore facilities).
  - Coastal fisheries harbour (to handle multi-day fishing of 1-3 days; 10 tons wt; 2.5 m draught, breakwater protection & onshore facilities)
  - Off-shore fisheries harbour (Purse seiners, trawlers of 100 tons wt; 5.0 m draught, Breakwater protection & shore facilities).
  - Distant waters fisheries harbour (Ocean fishing large vessels, factory vessels etc. of 500-1000 ton wt; 6.0 m draught; shore facilities for processing/handling frozen items).

Status of FHS/FLCs in developing countries:

- Infrastructure
  - Better infrastructure in developed countries; further upgradation going on to meet new standards.
  - Dozens of FHs with necessary modern facilities are now available in developing countries E.g. General Santos fish port complex, in Philippines.
  - Most other FHs/FLCs in most developing countries lack adequate infrastructure.

Management & maintenance of FHs & FLCS

- No matter how big or small or busy, proper management of FHS/FLCs are required to ensure:
  - For all weather use of vessels
  - For smooth harbour operations
  - For supply of quality water & ice
  - Proper collection of user fee & using it to maintain
  - Compliance with laws, regulations etc. governing use of facility and assuring food safety
  - Compliance with environmental regulations
  - Stake holders participation in the management
**Possible sources of contamination of fish in FH/FLC**

- Fish contact surfaces such as unloading containers, sorting/washing/auction tables, preparation equipment, boxes for re-icing & loading, storage premises, transport vehicles etc.
- Poor quality water and ice including crusher.
- Untreated effluents and wastes
- Persons handling fish
- Other sources are dust raised by vehicle, vessel repair area, pests, animals etc.

**Food safety compliance activities to be undertaken in FH/FLC**

- Cleaning and sanitation of fish contact surfaces
- Monitoring of hygiene & cleanliness
- Personal hygiene
- Other activities - effluent and solid waste treatment, pest control, water, ice quality check etc.

**Cleaning and sanitation of fish contact surfaces:**

- Cleaning & sanitation schedule:
- Washing of fish boxes

**Personal Hygiene**

- People carry bacteria in their gut, nose, mouth, hair etc.
- When such bacteria transferred to fish they grow in numbers & cause food poisoning. E.g. *Staphylococcus aureus*. Intestine of human has *E.coli*.
- Bacteria can be transferred to our hand when we use toilet, scratch face or sneeze into hands. These activities cause cross contamination.
Good personal hygiene practices:
- Washing hands thoroughly before handling fish; immediately after using toilet; after eating; handling waste; sneezing; wiping nose etc.
- Following proper method of washing of hands.
- Wearing proper protective clothing, hair cover etc.
- Keeping persons handling fish healthy & clean
- Cover cuts, burns, rashes or other injuries of persons with water proof bandages.
- Other compliances: pest control, effluent & solid waste management & water & ice quality checks

Environmental management:
- Activities of the FH must be carried out in an environmentally friendly manner as per MARPOL etc.
- There should be an Environment Management Plan.
- Some of the important practices are: Proper fuel storage & dispensing. Proper handling & disposal of waste engine oil; Proper handling of bilge water and disposal; Proper collection & treatment of sewage & other effluent; Proper care during vessel repairing; & proper handling of hazardous & other wastes.
- Environmental inspections (check lists).

International norms for the management of FHs/FLCs
- FAO’s Code of Conduct for Responsible Fisheries, 1995 addresses FHs / FLCs. Annex-6 of the code specifies procedures for the development and management of FH & FLC which include planning, design, construction, maintenance & management, environmental protection etc.
- Many countries have their own legislations / guidelines etc. based on international legislations e.g. “Fishing and Recreational harbours Act” of Canada; The new fisheries Law Project of 18th March, 2002 and Finance Circular 25/2002 of Vietnam for development of fishing Ports.

European Union Regulations
- EU has laid down Regulations for import of fish from third countries, which include requirements in fish ports.
- Regulation 854/2000 specifies following requirements for landing and unloading of fish to prevent contamination:
  - Unloading & landing equipment that comes into contact with FP are constructed of materials easy to clean
  - Equipment in good repair and cleanliness stage
  - Avoid contamination of FP during unloading operation
  - Unloading and loading operation carried out rapidly
  - Operations do not damage FP
  - Products immediately placed in protected environment
  - Products maintained at temperature approaching melting ice (fresh), -18°C (frozen) & -19°C (Frozen in brine)

EU regulations continued:
- Separate lockable facility for storage of FP declared unfit.
- An adequately lockable facility for use of the CA
- Premises must not be used for other purposes at the time of display or storage of FP
- No entry for vehicles emitting exhaust fumes
- Premises must be well lit to facilitate official control
- FP must undergo chilling quickly if not done on vessels as per requirement

OFFICIAL CONTROL
- Must be carried out by CA of exporting country at landing & first sale as per Reg. 854/2009. They are:
  - A regular check on hygienic conditions of landing & first sale (auction hall).
  - Inspection at regular intervals of establishments on land including auction hall, whole sale market etc. to check whether the establishments i) fulfil the approval conditions. ii) handle the FP correctly, iii) comply with hygiene conditions & temperature control & iv) comply with cleanliness of facilities, equipment, personal hygiene etc.
  - It is mandatory that CA approve the establishments (vessel, Auction hall/ whole sale market) inspect routinely & inform of compliance to EU
TRANSPORT OF FP
Regulation 853/2009 specifies that during transport, FP must be maintained at the required temperature, if kept in ice, the melt water must not remain in contact.

Regulation 854/2009 specifies the following requirements:
- Evidence of official control carried out on transport of FP by CA.
- If the trucks are owned by a FBO, they need to be covered by their pre-requisite programme.
- If owned by independent sub-contractor, the transport needs to be approved by CA and continuous compliance.

Participatory management in FHS/FLCs
- Similar to management of marine fisheries
- Stakeholders will be included in governing bodies and take various responsibilities; help for smooth operations, improving hygiene etc. Small FLCs can be totally managed by stakeholders.
- Benefits of Participatory management are:
  - FH management gets the confidence of stakeholders in the various programmes of management & Govt.
  - Gives them a sense of ownership
  - Major responsibility of convincing the stakeholders for paying user fees, following rules etc. taken by office bearers
  - Will serve as opinion leaders to conduct awareness campaigns, fishery management programmes etc.

Thank you for your kind attention
Policy note

The policy note is a document which outlines the rationale for choosing a particular policy alternative or course of action in a current policy debate. The purpose is to convince the target audience (decision makers) of the urgency of the current problem and the need to adopt the preferred alternative or course of action outlined and therefore, serve as an impetus for action.

Attributes of a policy note

Focused

- Focused on achieving the intended goal of convincing the target audience.
- The argument provided must build on what is known to them, insight on unknowns and be presented in language that reflects their values, i.e. using ideas, evidence and language that will convince them.

Professional, not academic
Evidence-based
• Decision makers will only be convinced by arguments supported by evidence that the problem exists and the consequences of adopting particular alternatives.
• But DO NOT overburden them with evidences.

Limited
The focus of the note needs to be limited to a particular problem or area of a problem to provide a adequately comprehensive but targeted argument within a limited space.

Succinct
• The type of audiences targeted commonly do not have the time or inclination to read an in-depth 20 page argument on a policy problem. Therefore, it is common that policy notes do not exceed 6 – 8 pages in length (i.e. usually not longer than 3,000 words).

Understandable
• Do not use jargons and concepts of an academic discipline.
• Providing a well explained and easy to follow argument targeting a wide but knowledgeable audience.

Scan-able
The writer of the policy note should facilitate the ease of use of the document by the target audience and therefore, should sub-divide the text using clear descriptive titles to guide the reader.

Practical and feasible
The policy note is an action-oriented tool targeting policy practitioners. As such the note must provide arguments based on what is actually happening in practice with a particular policy and propose recommendations which seem realistic to the target audience.
Developing a policy note

Background

• How did the issue emerge historically?
• What quantitative trends help explain?

Define the issue

• What is the problem? For whom, how & why is this problem?
• What is the extent of the problem?
• What makes this a public policy issue?

Position/Interest of your Organisation on the issue

Pre-existing Policies

What has been done so far by the government/organization on the issue?

Policy Options

• What are the possible courses of action?
  – Minimum 3 options (e.g. Act/Do not act/Watch and wait)
• Pros and cons of each alternative.
• Recommended best alternative.
• If required provide the authentic source of your information.
Remember…

• DON’T SAY the government must do x; DO SAY the government might consider X.

• DON’T SAY it is imperative the Minister consider or do x; DO SAY it is important that consideration be given to x.

• DON’T SAY the government should do; DO SAY the government could do.
Certificate of Participation

This is to certify that

has actively participated in the

Sixth Regional Training Course on the
Code of Conduct for Responsible Fisheries

held from 20 September – 02 October 2014 at Chennai, India

Dr Chris O'Brien
Regional Coordinator, BOBLME

Dr Yugaraj Yadava
Director, BOBP-IGO
Report of the
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