

# On designing **Communication Tools for Responsible Fisheries**

C Ramchandran



**Central Marine Fisheries Research Institute**  
Kochi, Kerala, India



Responsible Fisheries Extension Series 7

# **On Designing Communication Tools for Responsible Fisheries**

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**Central Marine Fisheries Research Institute**

Kochi, Kerala, India





**On Designing Communication Tools  
for Responsible Fisheries**

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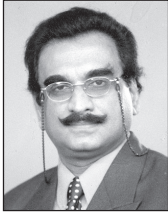
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# Preface



The Concept of Responsible Fisheries advocated by FAO through its Code of Conduct for Responsible Fisheries is considered as an epitome among global efforts for realising the coveted goal of sustainable utilization of our marine resources. The Code is a landmark in marine development thinking as it represents the consensus achieved by more than 150 nations across the world on the directions we should follow in order to avoid resource depletion due to irrational utilization behavior pattern shown by various stakeholders.

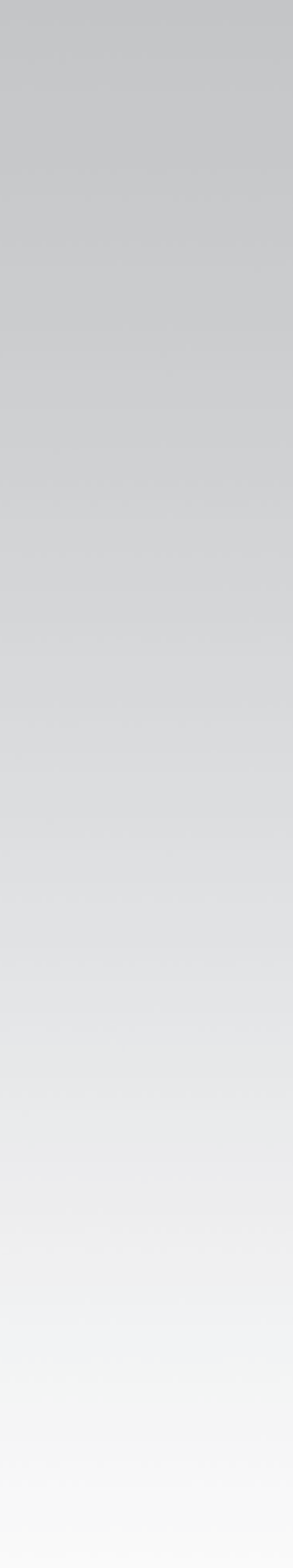
It is essential to inculcate awareness on the need to undertake all fisheries -related activities on a responsible manner. Since the code is voluntary in nature, it is only through concerted and continuous communication or extension interventions that we can bring about desirable cognitive changes among the varied and multiple resource users in the fisheries sector so that they would follow responsible practices as a moral obligation.

Though the code was promulgated way back in 1995 it was not available in any of the maritime vernaculars in our country, except Tamil till the year 2000. I am proud to recall that Central Marine Fisheries Research Institute (CMFRI) could bring out a Malayalam translation of this important international document in 2002 as an initial and significant output of the NATP funded project titled "Designing and Validation of Communication Strategies for Responsible Fisheries- A Co-learning Approach" under the leadership of Dr. C. Ramchandran, Scientist, Agricultural Extension, Socio Economic Evaluation and Technology Transfer Division (SEETTD), of the Institute.

The project could also bring out a number of well -validated communication tools for making the fisher folk aware about the concept of responsible fisheries. This includes animation films, pamphlets, books, CDs, campaign materials etc. It is worth mentioning that the animation film "Little Fish and Tiny Nets" developed under the project was short- listed in the prestigious "Earth Vision" video film festival held in Tokyo in 2003.

I am happy that he has compiled his experiences he has gathered while carrying out this project, along with other details, in this publication titled 'On Designing Communication Tools for Responsible Fisheries'. As the whole project activities were organized in a Co -Learning mode, the emphasis given on insights and learnings derived out of the very process of designing these communication tools is a welcome departure. I am sure that this publication will be useful for all marine fisheries stakeholders in general and the extension professionals working in this sector in particular.

**Prof.(Dr) Mohan Joseph  
Modayil  
(Director)**





## Acknowledgement

I remember with sincere gratitude the following persons who have helped me at various stages of this endeavor:

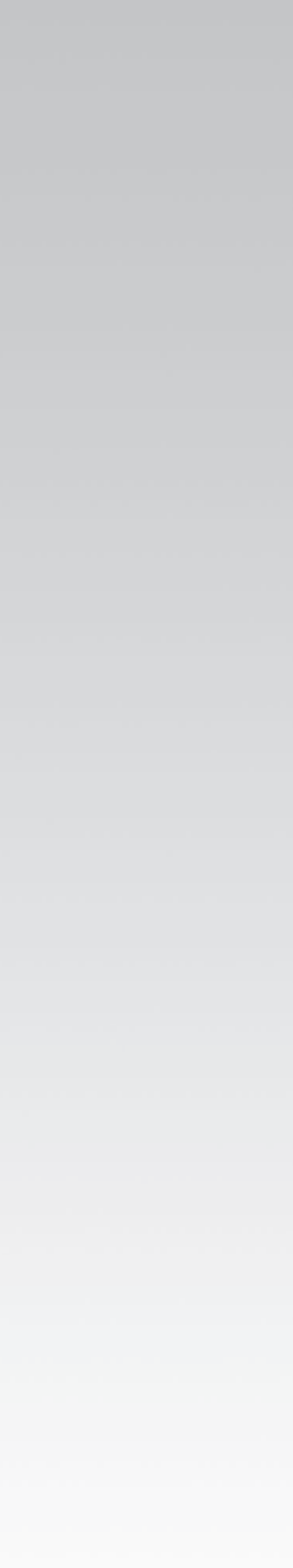
Dr. Mangala Rai (Director General, ICAR); Prof. Dr. Mohan Joseph Modayil, Director, CMFRI; Dr. S. Ayyappan, Deputy Director General (Fisheries), ICAR, Dr. K. Gopakumar (former DDG, ICAR); Dr. R. Sathiadhas, (Head, Socio Economic Evaluation and Technology Transfer Division, CMFRI); Dr. A. Bandyopadhyaya (Project Implementation Unit, NATP, ICAR); Dr. M. Srinath (Head, Fisheries Resource Assessment Division, CMFRI); Dr. K. K. Appukuttan, (Head, Molluscan Fisheries Division, CMFRI); Dr. N.G.K. Pillai (Head, Pelagic Fisheries Division); Dr. M. Rajagopalan (Head, FEMD, CMFRI); Dr. E.V. Radhakrishnan (Head, Crustacean Fisheries Division, CMFRI); Dr. R. Paul Raj (Head, PNP, CMFRI); Dr. S. Sivakami, (Head, Demersal Fisheries division); Dr. E. Vivekanandan (Principal scientist, CMFRI, Chennai); Dr. Krishna Srinath (CIFT, Kochi); Dr. Rani Mary George (Head, MBDD);

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Dr. C. Ramchandran



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## About the Project...

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### **Introduction**

The marine fisheries sector in India is currently going through a phase of socio-economic cum ecological turbulence. The rate of growth in marine fisheries production, as evidenced by recent studies, is plateauing, if not, declining. It is evident that the natural processes of rejuvenation have been imperiled. A major factor that endangers its sustainable utilization is the open access nature of marine resources and the veritable lack of an enforceable property rights regime or unanimously agreeable regulatory mechanisms. This has unfortunately augured well only for indiscriminate exploitation practices that listen only to the market forces, thus producing a chaotic situation of over capitalization and under employment.

Apart from the stakeholder- induced unsustainable operations like juvenile fishing, shallow water mining, improper crafts, ghost fishing, destruction of breeding grounds and mangroves etc., other non-point disturbances like urbanization, industrial pollution and eutrophication of estuaries have jeopardized the fragile ecological

dynamics of the coastal area.

The need for initiating management options that promote sustainable resource utilization and stable livelihood security to the coastal community is never felt so urgent as of now. The propensity to kill the goose that yields the golden egg has to be nipped in the bud through well-planned and massive efforts in making the fisher folk imbibe the message of the FAO Code of Conduct for Responsible Fisheries through Extension initiatives (See Annexure-1 for an abridged version of the FAO CCRF) . However, the transfer of Technology (TOT) based extension paradigm dominant in the country is insufficient to infuse a sense of responsible fishing and conservation among the coastal stakeholders. It is imperative to start thinking about alternative extension strategies, which are firmly built on a “New professionalism” among the facilitators and an ecological praxis of stewardship among the stakeholders.

### **Rationale**

That the sustainability of our precious

marine resources at the current level of exploitation is at stake has been well documented. Though policy level interventions in the form of various regulatory measures have been promulgated by almost all the maritime states in the country their effective implementation remains doubtful.

Inculcating an ethos of conservation by means of official caveats in the context of an open resource amenable to a multiplicity of stakeholders vested with unequal socio political patronage is an insurmountable task. In a free-choice, democratic society like ours Human Resource Development (HRD) efforts that invoke “Conscientisation” of the stakeholders assume greater significance. The corner stone of such approaches is the realization that people are part of the problem as well as its solution.

The facilitation of such enabling contexts squarely depends on the fidelity and credibility of the extension intervention made by the extension professionals. Though it is preposterous to assume that the stakeholders are unaware of the conservation issues, the extent to which they have imbibed the gravity is obviously under-studied. The need of the hour is to break this apathy through powerful communication tools that help to kindle the subliminal levels of concern already present in the minds of the stakeholders.

A major challenge the fisheries extension functionaries face, in this context, is the virtual lack of reliable and proven communication strategies and tools. It is high time that this lacuna is filled and the present project is an

attempt in this direction.

The documentation of telltale evidences of unsustainable fisheries management practices as well as successful ameliorative initiatives, (indigenous or induced) wherever attempted in the country is a prerequisite. The phenomenological database thus obtained along with an Assessment of Responsible Fisheries Information Needs (ARFIN)-which is being attempted for the first time ever in the country –from different locations of our coast can be utilized to construct meaningful communication strategies and tools. A co-learning approach instead of the conventional centralized method of message production was found to be ideal in designing and validating these facilitation modules.

It is with this rationale in mind that the research project “*Designing and Validation of Communication Strategies for Responsible Fisheries –A co-learning approach*” was conceived. The project with the following major as well as short term objectives was undertaken at the Socio-Economic Evaluation and Technology Transfer Division (SEETTD) of Central Marine Fisheries Research Institute (CMFRI) during 2000-2004 with the generous funding support from the prestigious National Agricultural Technology Project being implemented by Indian Council for Agricultural Research (ICAR) ,New Delhi.

### **Major objective**

The main objective of the project was *to design and validate communication tools and strategies meant for*





## *Responsible/Sustainable Fisheries.*

### **Short-term objectives**

There were four short-term objectives which were to act as guidelines for the various activity milestones of the project.

1. To assess the information needs for responsible fisheries from various stakeholders by analyzing cases of mismanagement or
2. To design and develop Responsible Fisheries Extension Module (RFEM)
3. To evaluate the effectiveness of the RFEM in different locations through various interventions.
4. To release the module for scaling up.

unsustainable fisheries as well as successful initiatives of amelioration –indigenous or induced.

## Methodology

---

The whole logic of the methodology chosen for the project is given in fig.1. The main objective of producing a well-validated Responsible Fisheries Extension Module (RFEM) consisting of various strategies as well as tools for communicating the tenets of responsible fisheries has been achieved after Assessing the Information Needs for Responsible Fisheries (ARFIN) from a wide spectrum of stakeholders.

### Salient features of the methodology

1. The characteristic feature of the methodology is the emphasis given on setting the entire process in a decentralized, co-learning mode.
2. The entire process of designing and validating different communication tools for

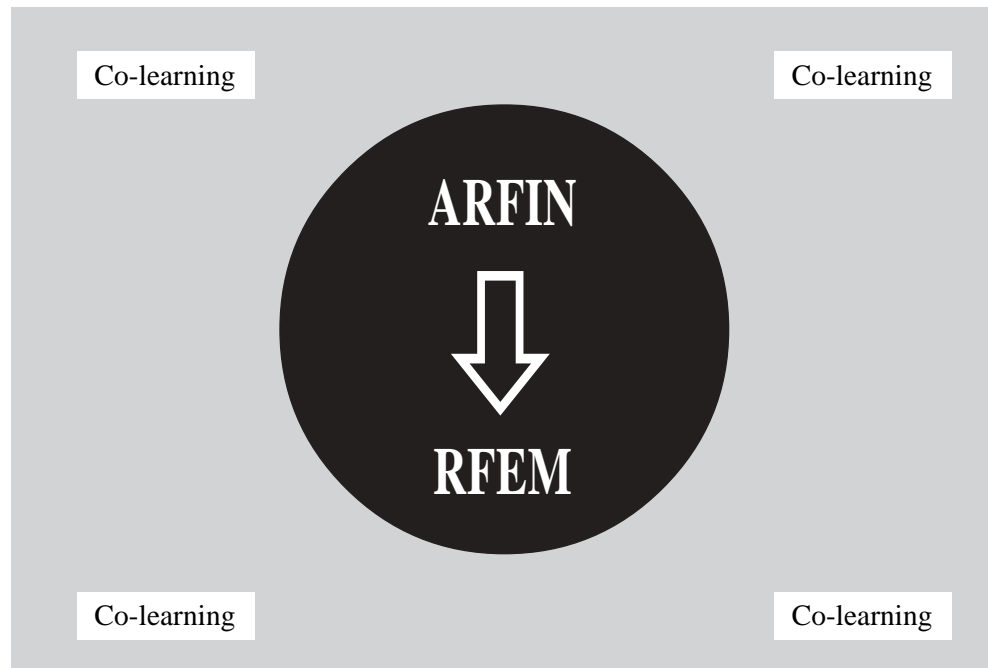


Fig.1. The logic of the methodology



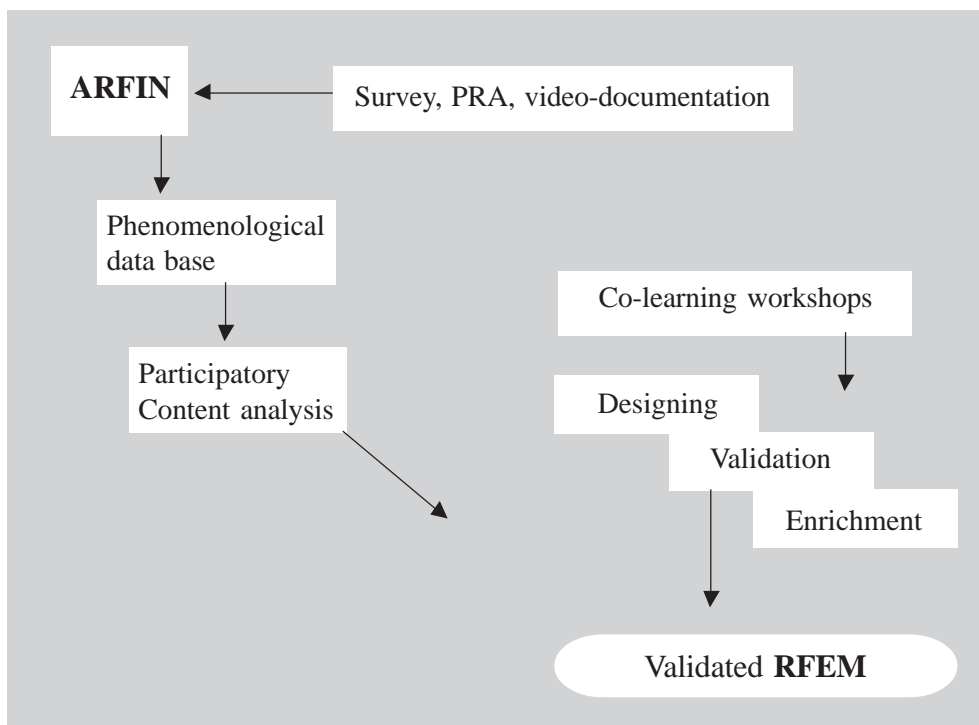


Fig.2. Various steps in the methodology

responsible fisheries has been conceived under eight phases.

3. A combination of different research strategies like survey, case study, PRA, media development & testing and impact assessment has been utilized in each of these phases.

### Phases of the project

The project was conceived to progress through eight phases or steps in the methodological ladder. These steps have been shown in Figure 2. Each phase is described below.

**Phase 1** Assessment of Responsible Fisheries Information Needs (ARFIN)

This involved a combination of survey and PRA methodologies. The criterion for responsible fisheries was

formulated based on the Code of Conduct for Responsible fisheries prepared and published by FAO, (1995) as well as various FAO Technical Guidelines released in this connection. In general, five major areas have been covered under responsible fisheries. They are :

1. Fishing operations
2. Precautionary approaches to capture fisheries management and aquaculture development
3. Integration of fisheries into coastal area management
4. Post harvest practices and trade
5. Fisheries research

**Phase 2** Identification, analysis and documentation of cases

Cases of mismanagement / unsustainable fisheries as well as successful management initiatives were identified with the help of the regional research centers of CMFRI, located in Kerala, Tamil Nadu, Karnataka, Maharashtra and Gujarat. The selected cases were studied in detail and documented.

### **Phase 3 Content analysis**

The phenomenological database thus obtained was subjected to content analysis by a selected group of stakeholders as well as extension experts from the State departments /Agricultural Universities /NGOs to decide the nature, content and treatment of the tools and message constructs which were to be designed under the next phase.

### **Phase 4, Designing the Responsible Fisheries Extension Module (RFEM)**

The intended stakeholders along with extension /subject matter experts in a co-learning mode designed the communication tools and extension strategies (extension module) for responsible fisheries.

### **Phase 5 Validation**

The modules were tested by different group of stakeholders and communication experts. Media –mix studies were conducted to find out the best combination of tools.

### **Phase 6 Demonstration of RFEM**

The module was used in extension interventions like massive campaigns in selected villages after analyzing the levels of knowledge and attitude of stakeholders in responsible fisheries management.

### **Phase 7 Evaluation**

The evaluation of the module was done through a pre & post evaluation of the behavioral patterns of fisher folk.

### **Phase 8 Enrichment and release of the module for scaling up.**

The RFEM consisting of well validated communication tools was released in a formal function by handing it over to the concerned line departments and other stakeholder agencies.



## Assessment of Responsible Fisheries Information Needs (ARFIN)

The assessment of information needs of different stakeholders in the marine fisheries sector formed the core activity in the initial phase of the project. In fact it was conceived as the prerequisite for designing various communication tools / strategies. The Code of Conduct for Responsible Fisheries (CCRF) promulgated by the Food and Agricultural Organisation (FAO) was the basic guideline to define the contours of information needs. But the very broad scope of the code posed a major difficulty in operationalising the information needs of specific stakeholders. For example, as far as the active fisher folk were concerned it was difficult to get articles of the FAO CCRF specifically pinpointing the action points or doable practices related with responsible fisheries.

According to the general principles enshrined in the code, “States and users of living aquatic resources should conserve aquatic ecosystems. The right to fish carries with it the obligation to do so in a responsible manner so as to ensure effective conservation and management of the living aquatic resources”. But a clear postulation of

these obligations is lacking in the code as it is the State which has been entrusted with the duty of honouring or implementing the provisions under each of the 12 articles of the code. However, conservation orientation, awareness about the concept of responsible fisheries, (including the very availability of the FAO CCRF in the local language) awareness about rules and regulations contained in the Marine Fishing Regulation Act, and extent of adoption of conservation measures were taken as general variables that influence the attitude of the fisher folk towards responsible fisheries. In addition to these variables information was also collected on aspects like access to different communication media, media preference, extension agency contact etc., apart from typical socio-economic variables like age, education, income, fishing experience, crafts and gears used etc.

The information needs regarding responsible fisheries were collected using a set of schedules developed for the study (See Annexure-II). A combination of research methods like

Table 1. Comparative response pattern across study states

Sl No	Variable	Kerala	TN	AP	MR	Orissa
1	Awareness on the concept of Responsible Fisheries	poor	low	poor	low	poor
2	Conservation orientation	medium	low	low	low	poor
3	Awareness about regulations	medium	low	low	low	low
4	Preference for visual media	high	high	high	medium	low
5	Preference for animation movies	high	high	high	high	high
6	Preference for print medium	high	low	low	low	poor
7	Extension agency contact	low	poor	poor	poor	poor
8	Availability of translation of FAO CCRF	-	✓	-	-	-

survey, PRA tools, focused group interactions etc., were utilized. The data were collected from selected locations in Andhra Pradesh, Tamil Nadu, Orissa, and Maharashtra using field investigators. The field investigators were given training in data collection by the project team.

The main objective was to assess various parameters like the extent of mass media contact, the media preference, and conservation orientation existing among the stakeholders. The criteria and reference points for responsible fisheries were based on the Code of Conduct for Responsible

Table 2. Cases of unsustainable fisheries as well as successful initiatives

Type	Practice	Kerala	TN	AP	MR	Orissa
Unsustainable Practices	Juvenile Fishing	✓	✓	✓	✓	✓
	Dynamite fishing	✓	✓	✓	✓	✓
	Violation of mesh size regulations	✓	✓	✓	✓	✓
	Discards	✓	✓	✓	✓	✓
	Ghost fishing	✓	✓	✓	✓	✓
Official Initiatives	Monsoon Trawl Ban	✓	✓	✓	✓	✓
	Marine Protected Areas	-	✓	-	-	-
Indigenous Initiatives	Stake holder-induced changes	✓	-	-	-	-
	NGO's	✓	✓	✓	✓	✓
	Sea court	✓				
	Input control strategies	-	✓	-	-	-
	Customs / beliefs – directed 'No fishing' days	✓	✓	✓	✓	✓







ARFIN at Tamil Nadu

*Assessment of Responsible Fisheries Information Needs*



ARFIN at Kerala



ARFIN at Orissa

## *Assessment of Responsible Fisheries Information Needs*



ARFIN at Andhrapradesh





Chinese nets of Kerala - Hard labour but a detrimental fishing practice!

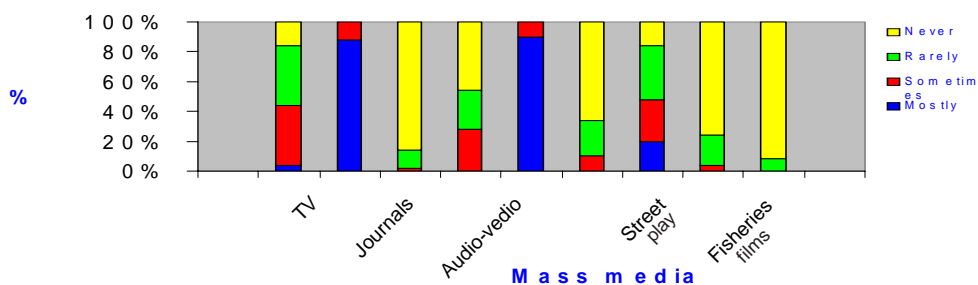


Fig.3. Extent of use of mass media

Fisheries as well as the technical guidelines of FAO. The guidelines were suitably reinterpreted to suit the peculiarities existing in the Indian scenario.

### Major findings

The response on different variables like awareness on the concept of responsible fisheries, conservation orientation, awareness about fisheries regulations, media preference etc., showed variation across study states (Table 1 ). The preference for visual media as well as animation movies was markedly high. A very significant observation was the absence of the FAO CCRF in any of the maritime vernaculars but for Tamil . Similarly the extension agency contact was rated to be poor indicating the lack of attention being given to the issues in an extension perspective.

The extent of use of mass media is given in figure 3. It is seen that the use of TV was very prevalent followed by news papers. Since the most preferred

media identified were TV and print media they were given priority while designing the communication tools under the project.

### Documentation of cases of mismanagement or unsustainable fisheries as well as successful initiatives of amelioration –indigenous or induced.

A number of cases for unsustainable fisheries as well as successful initiatives were documented. Detailed case studies were prepared on various initiatives/ events like *Kadakkodies* (sea courts ) - an indigenous *sui-generis* co-management institution of Malabar coast, initiatives of an NGO namely “Green Seas” located at Munambam , in getting the fisher folk take a collective stand against night fishing and the detrimental effects of mini trawling, an innovation brought out by fishers themselves in Kerala. The detailed case study on *Kadakkody* as well as stakeholder –induced initiatives of Green seas have been given in Responsible Fisheries Extension Series 6.

## Responsible Fisheries Extension Module (RFEM)

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The final outcome of the project is a well –validated extension module for Responsible Fisheries. The details of the different tools in the module are given in Table 3. The module consists of books (in Malayalam, English, and Hindi) , brochures , animation films( in all the maritime vernaculars of India) and campaign materials. Though these tools can be considered as important *products* of the project it is equally important to

consider the *process* that went behind them. It is the process part of the project that has given more valuable insights in the extension point of view. The process learnings originate in the various strategies followed in the design, validation and scaling up of these tools. This is also discussed under each tool. The medium wise and language wise categorisation of the RFEM is given in Table 4.



Table 3. Components of the Responsible Fisheries Extension Module (RFEM)

No	Medium	Title/Content
1	Book in Malayalam	FAO Code of Conduct for Responsible fisheries (FAO CCRF)
2	Illustrated book in Malayalam	What, Why and How of the FAO CCRF
3	Illustrated book in Hindi	“Sagar Sada Bahar” (‘Ever green seas’)
4	Illustrated brochure in Malayalam	The need for responsible fisheries
5	Animation Film in 10 Indian languages (English, Malayalam, Hindi, Tamil, Telugu, Oriya, Bengali, Kannada, Marathi and Gujarathi)	“Little fish and tiny Net”
6	Animation Film	‘The Greedy fish farmer’
7	Video film (English)	“Colourful Voices for Responsible Fisheries “
8	Video film	<i>Kadakkodis</i> of Malabar coast
9	Participatory painting	Responsible fisheries
10	Book in English	“Teaching Not to Fi(ni)sh-A constructivist perspective on reinventing a responsible marine fisheries extension system”
11	Campaign materials	1. T-Shirt with the message “save the seas first and catch fish next” on the front and “Fish for all for ever , Let us practice responsible fisheries “ in the back 2. Wall hanger with message

Table . 4. The medium wise and language wise categorisation of the RFEM

Type	Eng.	Mal.	Hin.	Tam.	Kan.	Ori.	Mara.	Guja.	Tel.	Beng.
Visual	1. Books	2	2							
Tools	2. Brochures	1								
	3. Newspaper articles	10								
	4. Paintings									
	Audio	Radio	1							
Tools	Talks									
Audio	Animation films	1	1	1	1	1	1	1	1	1
Visual										
Tools	Video films	2	2							

## Communication Tools and strategies –as products and processes I

Each communication tool or product is accompanied by a process consisting of various dimensions like the genesis of an idea, its creative expansion, selection or choice of the treatment/medium, designing, evaluation and enrichment. The overall aim of the project was to make the process as participatory and decentralized as possible. A centralized approach may not be the right one for efforts aimed at development communication. In this approach the various parameters that define the Stimulus – Response praxis would be taken for granted. The antidote to this malady is to make the process democratic and decentralized. Since no a priori assumptions are conceived for the Stimulus – Response praxis, contextual learning in a phenomenological sense gets the upper hand. This augurs well for the creation of an enabling space for dialogue and mutual learning.

### **a) Translation of the FAO Code of Conduct for Responsible Fisheries into Malayalam “Utharavadithvapara Matsyabandhana Perumattachattom”**

One of the major achievements of the

project is the document/publication titled “*Utharavadithvapara Matsyabandhana Perumattachattom*” which is the translation of the FAO Code of Conduct for Responsible Fisheries into Malayalam. This has been brought out in collaboration with FAO, Rome, based on the *Local Language Co-publishing Agreement (FAO ref: No IN 17/9 (Malayalam –India) LL/2002/3 dated 22/5/2002)* signed between FAO and CMFRI. Dr C Ramchandran, PI of the project did the translation. The publication filled a long – felt need of having a translation of this landmark document of the global fisheries scenario in the Malayalam language, thus making it the second Indian vernacular after Tamil to have this document in any Indian language.

### **The process of translation**


The translation was a three- step process consisting of 1) translation 2) verification 3) validation. The code was first translated word by word without taking any freedom either in the syntax or connotation. In finding out exact vernacular words for the scientific and technical terms the scientists of CMFRI






# Responsible Fisheries Extension Module (RFEM)


അവസാനമരവും  
 മുറിക്കപ്പെടുമ്പോൾ  
 അവസാനനദിയും  
 മരണപ്പെടുമ്പോൾ  
 അവസാനമത്സ്യവും  
 പിടിക്കപ്പെടുമ്പോൾ  
 അപ്പോൾ മാത്രം  
 നാം തിരിച്ചറിയും...?  
**പണത്തെ ഭക്ഷിപ്പാൻ കഴിയില്ലെന്ന്!**





Only when the last tree  
 has been cut down  
 Only when the last river  
 has been poisoned  
 Only when the last fish  
 has been caught  
 Only then we realise that  
**we can't eat money**


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## ഉത്തരവാദിത്വപര മത്സ്യബന്ധന പെരുമാറ്റച്ചട്ടം



ഐക്യരാഷ്ട്ര  
സമൂഹം  
സംരക്ഷണ  
കാർഷിക  
സംഘടന

Code of Conduct for Responsible Fisheries Translated to Malayalam (2002)

Malayalam version of the  
FAO Code of Conduct for  
Responsible Fisheries

## ഉത്തരവാദിത്വപര മത്സ്യബന്ധന പെരുമാറ്റച്ചട്ടം

എന്ത്?  
 എന്തിന്?  
 എങ്ങനെ?

സി. രാമചന്ദ്രൻ  
 എസ്. ആഷാദേവ്




കേന്ദ്ര സമുദ്രമത്സ്യ ഗവേഷണ സ്ഥാപനം  
 പി.ബി. നമ്പർ : 1603, കൊച്ചി - 14.

Illustrated fisher - friendly  
version of the FAO Code of  
Conduct for Responsible  
Fisheries (Malayalam)

# Responsible Fisheries Extension Module (RFEM)

അവസാനമരവും മുറിക്കപ്പെടുമ്പോൾ അവസാനനദിയും മരണപ്പെടുമ്പോൾ അവസാനമത്സ്യവും പിടിക്കപ്പെടുമ്പോൾ അപ്പോൾ മാത്രം നാം തിരിച്ചറിയും...? പണത്തെ ഭക്ഷിച്ചാൻ കഴിയില്ലേന്ന്!



Only when the last tree has been cut down  
Only when the last river has been poisoned  
Only when the last fish has been caught  
Only then we realise that we can't eat money


Central Marine Fisheries Research Institute (ICAR)  
Prepared under the N. A. P. U. - 2 (2008/2011)  
Responsible Fisheries Extension Module - A Co-learning Approach  
ICAR Logo

Responsible Fisheries Extension Series 6

## Teaching Not To F(in)ish ! ? :

A Constructivist Perspective on Reinventing a Responsible Marine Fisheries Extension System

C. Ramchandran



Central Marine Fisheries Research Institute  
Kochi, Kerala, India

### ഉത്തരവാദിത്വപര മത്സ്യബന്ധനത്തിന്റെ ആവശ്യകത




കേന്ദ്ര സമുദ്ര മത്സ്യബന്ധന സ്ഥാപനം  
കൊച്ചി - 682 018

Responsible Fisheries Extension Series - 3  
Prepared under the research project - NMFICGP - 2 (2008/2011)  
Designing & Validation of Communication Strategies for Responsible Fisheries - A Co-learning Approach

Brochure in Malayalam on "the need for responsible fisheries"

## सागर सदाबहार...

सी. रामचन्द्रन



केंद्रीय समुद्री मात्स्यिकी अनुसंधान संस्थान  
(भारतीय कृषि अनुसंधान परिषद)  
उत्क. संस्था 1603, कोचीन 682 018

'Sagar Sadaa Bahaar' Illustrated fisher - friendly version of the FAO Code of Conduct for Responsible Fisheries (Hindi)

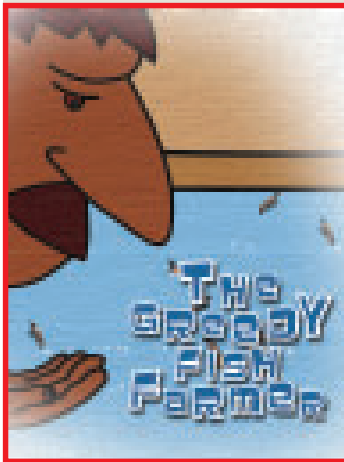
# Responsible Fisheries Extension Module (RFEM)

## Animation films

### 1. Little Fish and Tiny Nets

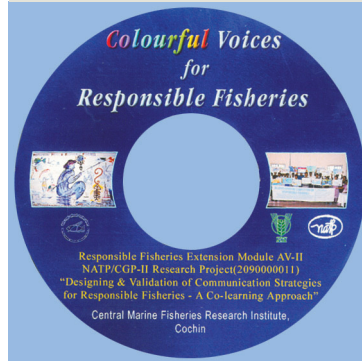


### 2. The Greedy Fish Farmer

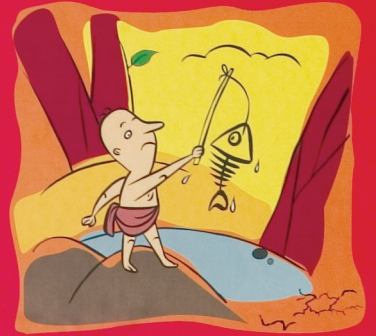


## Video film

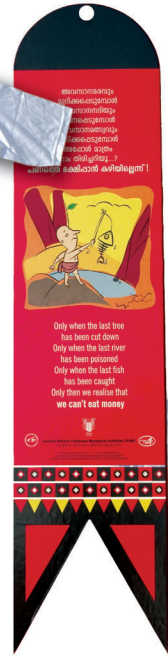
### Colourful Voices for Responsible Fisheries



അവസാനമരവും മുറിക്കപ്പെടുമ്പോൾ അവസാനനദിയും മരണപ്പെടുമ്പോൾ അവസാനമത്സ്യവും പിടിക്കപ്പെടുമ്പോൾ അപ്പോൾ മാത്രം നാം തിരിച്ചറിയും...? പണത്തേ ദക്ഷിപ്പാൻ കഴിയില്ലെന്ന്!



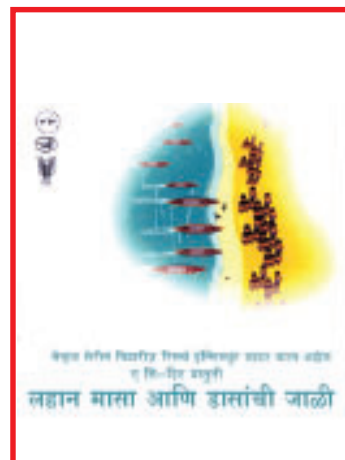
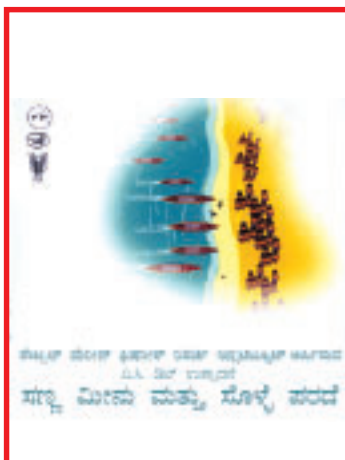
Only when the last tree has been cut down  
Only when the last river has been poisoned  
Only when the last fish has been caught  
Only then we realise that we can't eat money



## Campaign Materials



# Animation Film (Little Fish & Tiny Net) in Maritime Languages ( Hindi, Maratti, Gujarathi, Oriya, Telugu, Kannada, Tamil & Bengali)



were frequently consulted.

To verify the correctness of the translation an expert linguist (Dr. Gopinathan Nair, former Head, School of linguistics, Kerala university, now working in the International School of Dravidian Linguistics, Trivandrum) was consulted.

For validating the translation a few of the stakeholders who could understand both English and Malayalam were selected. The English text juxtaposed with the translated portion in Malayalam was prepared and the selected stakeholders (which included

two retired fisheries scientists, three working scientists, two officials of the state Department of fisheries and a fisherman) were asked to rate the translation on the basis of an evaluation tool developed for the purpose. Though it was difficult to get an active fisherman who had sufficient knowledge in English the patience and interest rendered by Mr. Jossy Palliparambil, of “Green Seas”, Munambam proved to be invaluable. But the validation job, as most of the selected stakeholders pointed out, was a “taxing job”. The various linguistic challenges faced while doing the translation are given in Box 1.

#### Box 1

##### Linguistic challenges of translating the Code

Translation of the Code of Conduct for Responsible fisheries was a challenging task mainly because of the difficulty in maintaining a balance between the lack of freedom to do freewheeling (even for the sake of clarity) and the necessity to make it as readable as possible to the fisher folk. Since the code is an international document (and as it was mandatory as per the translation agreement signed with FAO) it was absolutely necessary to provide exact word-to-word translation. This posed many difficulties, as there were no simple corresponding Malayalam words to many of the terms /concepts used in the code. For e.g. The title concept, “Responsible Fisheries” itself proved a hard nut to crack. There is no single Malayalam word which captures the fullest meaning of the term “Fisheries” which in fact encompasses a whole set of activities related to both capture and culture. The word used in the translation is “*matsyabandhanam*” which means only the “act of catching the fish”. There is another related word meaning the same viz, “*meen piditham*” which is said to be more colloquial. The linguistic hurdle of ‘which one to use’ was solved in consultation with a few fishermen in different locations. They surprisingly preferred the former word (Incidentally the translation given for the word “Marine Fisheries” in the Institute’s name CMFRI is “*samudra matsya*” which means only marine fishes and not exactly fisheries).

Another troublesome word was ‘selective gear’. That the concept itself is alien in a multi-species fisheries context was proved by the absence of a corresponding word for it in Malayalam. Similar was the case with words like “discards, by-catch and trash”. The fisher folk was found not to bother the subtle differences in the connotation of these words. Those words, which were suspected of insufficient load of translated meaning, were compiled and given as an annexure at the end of the translation.

**b). Booklet, titled “Uthradithuvapara Matsyabanthana Perumattachattom- Enthu, Engane, Enthinu?”**

This booklet describes the What, Why and How of responsible fisheries in a nontechnical language. Illustrated with a number of cartoons the book meant especially for the fisher folk has its content and layout designed in such a fashion that it arouses immediate interest among fisher folk on the need for responsible fisheries. In fact the motive for this book came from the feedback that the full text of the code was perceived to be very cumbersome by the fisher folk to whom copies of the translated version of the code were supplied. The basic objective of this book was to convey the spirit behind the concept of responsible fisheries to the fisher folk in as simple a way as possible.

**Official Release of the translated version of the Code of Conduct**

The above two books were formally released by Hon. Minister of Fisheries and Tourism, Govt. of Kerala, Prof. K .V Thomas on 2<sup>nd</sup> December, 2002 at CMFRI, Kochi. The minister handed over copies of the books to Dr M.P Dileep, Deputy Director, Department of Fisheries, Kerala. More than 500 people

belonging to different fisheries stakeholder groups attended the book release function. The function was presided by Dr. Mohan Joseph Modayil, Director CMFRI.

Felicitations were given by Dr. K. Gopakumar, (former DDG (fisheries), Dr. K. Devadasan, Director Central Institute of Fisheries Technology (CIFT), Kochi, Dr. K.K. Appukuttan , Nodal Officer, NATP Cell Central Marine Fisheries Research Institute (CMFRI), and Dr. R. Sathiadhas, Head SEETTD, CMFRI. The message sent by Dr. Y.S. Yadava, Director, Bay of Bengal Programme (BOBP), who could not attend the function, was read out. Dr C Ramchandran (Principal Investigator of the project) and Dr. S. Ashaletha (Co-Investigator of the project) gave welcome address and vote of thanks respectively.

Various mass media (The New Indian Express dated 3.12.2002, The Hindu, 28.12.2002, the leading Malayalam Dailies and News channels of *Asianet, Kairali, Surya* etc.) gave prominent coverage to this function. The copies of the book were sent to, FAO, Rome, and FAO Country representative in New Delhi as per the Local language co-Publishing agreement. Copies of the books were also given to Bay of Bengal

Table 5. Dissemination of copies of the FAO CCRF & booklet in Malayalam.

Sl.No	Name of stakeholder	copies
1	Fisherfolk	852
2	State Fisheries Department	386
3	ADAK/Matsyafed/MPEDA	250
4	FAO, BOBP, WFC	20
5	National Fishworkers Federation	100
6	Other NGOs	200
7	Fisheries-related educational institutions	150





FAO CMFRI NATP  
 പുസ്തക പ്രകാശനം  
 ഉത്തരവാദിത്വപരമായ മത്സ്യബന്ധനം (TRANSLATION)  
 FISHERIES RESPONSIBLE CONDUCT  
 CODE OF CONDUCT

Honour Dr. Y.S. Y...  
 NATP/CGP PROJECT  
 FISHERY  
 Prof. K.V. THOMAS  
 K.DEVA...  
 .THOMAS

Dr. K. DEVADASAN

Prof. K.V. THOMAS

Dr. MOHAN JOSEPH MODAYIL

Dr. DILEEP

Dr. K. GOPAKUMAR

Prof. K.V. Thomas Minister of Fisheries Govt. of Kerala releasing the Malayalam version  
 of the FAO Code of Conduct for Responsible Fisheries (CCRF) on 2nd December 2002 at CMFRI Kochi

## Release of FAO, CCRF in Malayalam



Prof. K.V. Thomas Minister of Fisheries Govt. of Kerala addressing the gathering



Presidential address - Dr. Mohan Joseph Modayil, Director CMFRI



*Release of FAO, CCRF in Malayalam*



Felicitation - Dr. K. Devadasan, Director, CIFT



Felicitation - Dr. K. Gopakumar, Former, DDG (Fisheries) ICAR

## Release of FAO, CCRF in Malayalam



Felicitation - Dr. M. Dileep, Deputy Director, State Department of Fisheries Kerala



Welcome address Dr. C. Ramachandran, Principal investigator NATP / CGP II (20900 00011)

## Release of FAO, CCRF in Malayalam



Vote of thanks Dr. S. Ashalatha Co-Principal investigator



A glimpse of the audience

## Dissemination of FAO CCRF

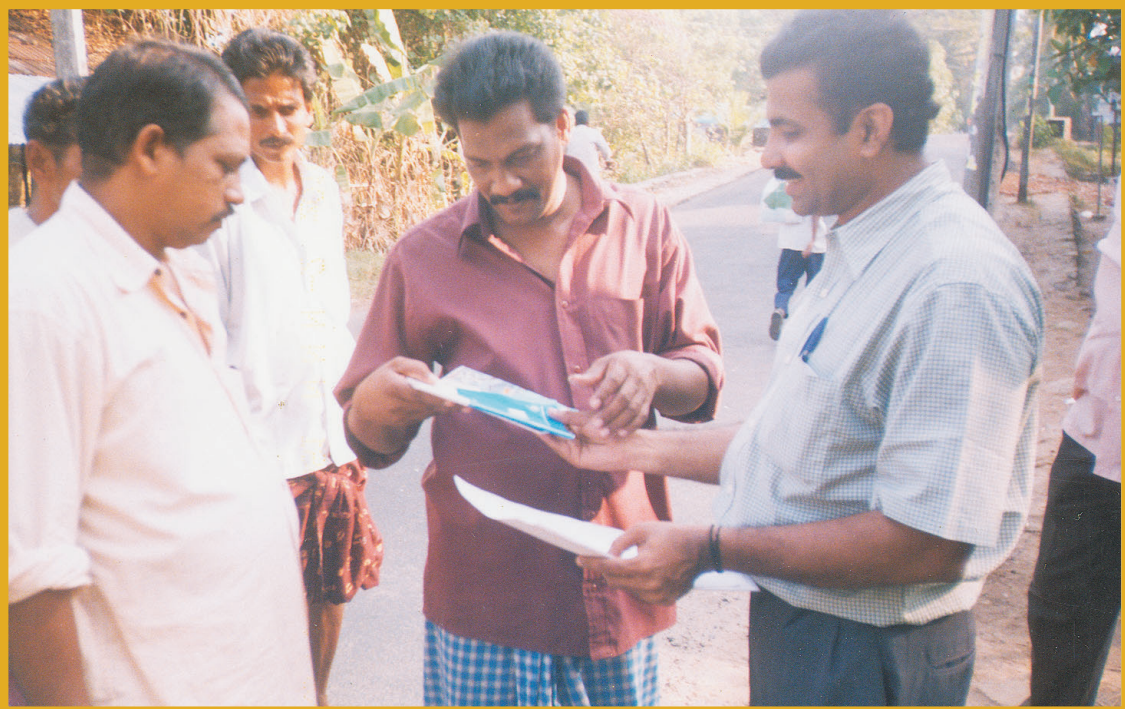


Dr. Mario Pedini (Aquaculture expert, World Bank) presenting a copy of the book to a fisherman in the Vypin Island

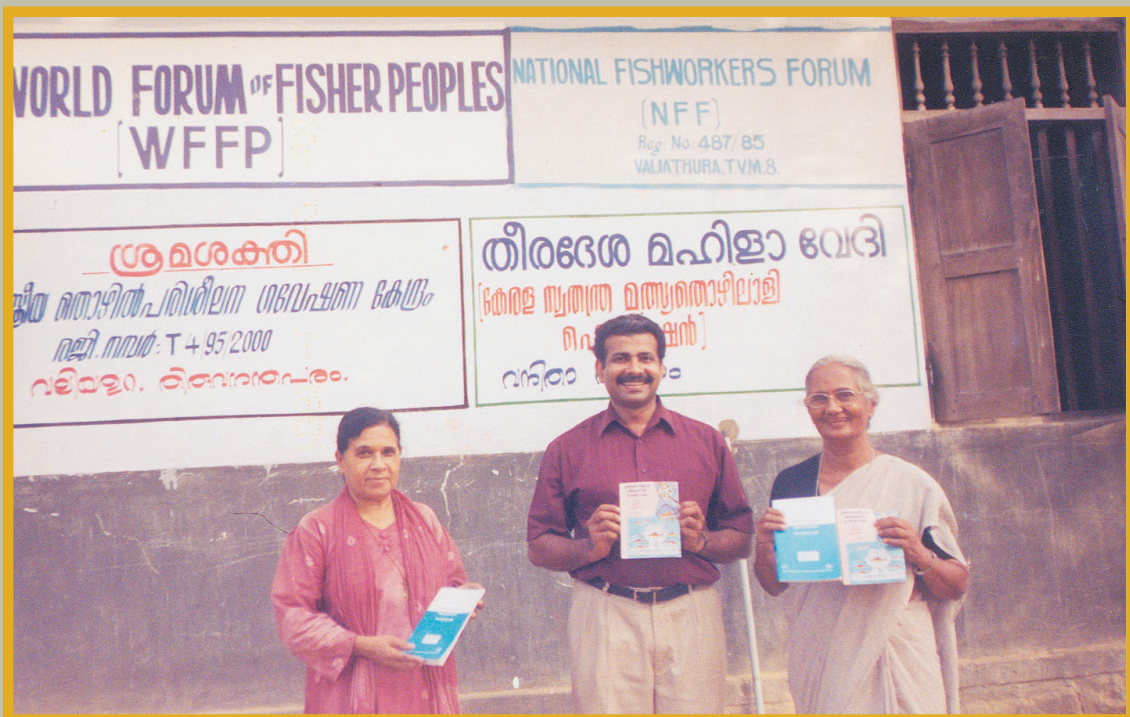


Members of 'Theeram Samrakshana Samathi' at Kozhikode with the copies of the FAO CCRF (Malayalam)

## Dissemination of FAO CCRF



Distribution of copies of the FAO CCRF (Malayalam) to fisherman at Ernakulam



Distribution of copies of the FAO CCRF (Malayalam) to National Fishworkers Forum (NFF) in Trivandrum

## *Participatory Painting on Responsible Fisheries*



Dr. Mohan Joseph Modayil, Director (CMFRI) giving the inaugural strokes for the participatory painting on responsible fisheries. Also seen Dr. R. Sathiadhas and Dr. C. Ramchandran



Final version of the participatory painting on responsible fisheries



## Communication Tools and strategies –as products and processes II

### **c) Animation films on Responsible Fisheries**

Based on the preliminary analysis of the data on information needs it was able to infer that there was a marked preference for dramatized experiences like animated film as one of the most effective communication channels for inculcating the message of the responsible fisheries among the stakeholders. Hence, it was decided that the communication tools to be developed should be based on some animated form. Thus two animation films were produced in Malayalam titled 1) *Kunjumeenum kothukovalayum* (Little fish and tiny nets) 2) The Greedy Fish Farmer. The first film was dubbed into all the nine maritime vernaculars of the country. The second film is devoid of dialogue and thus language is not a barrier.

#### *a) Development of the films*

The development of the animation films involved the following steps

1. Co-learning session to finalize the theme

2. Co-learning session with animators of Center for Imaging Technology (CDiT) Trivandrum
3. Development of prototype version
4. Participatory Evaluation of the prototype and feedback study
5. Incorporation of changes
6. Production of Final version
7. Pre view
8. Telecast through “Doordarshan”
9. Feedback study

#### *1. Co-learning session to finalize the theme*

A co-learning session was organized at CMFRI to decide the topic of the film. Though different topics like adherence to regulations, hygienic practices in harvest and post harvest operations, measures to increase fuel efficiency etc., came up for discussion there was agreement to take juvenile fishing as the most suitable one. The highly destructive





practice of juvenile fishing- catching the young ones using nets of very small mesh size- has been found to cause immense economic damage to the fisheries wealth of the state. The loss was estimated to be to the tune of Rs. 600 crores every year. Fisheries scientists have recognized banning juvenile fishing as a very significant conservation measure. Thus, this theme was finalized for preparing the story board.

## *2.Co-learning session with animators of CDiT Trivandrum*

The story prepared by the project team was discussed with animators of Center for Imaging Technology (CDiT), a government of Kerala enterprise, Trivandrum. The basic story was agreed but artistic freedom was given to animators to bring in changes. The final **storyboard** went as:

“Sensing a good catch fisher folk set out for catching the fish-thinking that more catch will fetch more money, they decide against the nets with larger mesh size-they go for fishing and come back with lot of catches-but find out that they got mostly juveniles only-they are forced to select the bigger ones which are very few- the fishers suffer the agony of financial loss-they discard the lion’s share of what they have brought as trash on the beach-rains come –crows and flies hover around- the flies have a sumptuous feast—one of the flies ridicules the fishers saying that— *“HI..HI...HI... .Fools ....they got these juveniles only because they used these “mosquito nets” for fishing.. they could have got crores of rupees if they have just allowed them to grow and attain bigger size...anyway*

*our good times...”*. This is followed by a concluding message “Never Please .....Never catch juveniles....Use only nets with recommended mesh size...”

## *3.Development of prototype versions*

Accordingly two prototype versions i.e., one with animation alone (V1) and the other supplemented by a dialogue (V2), were developed. An expert committee at CMFRI previewed them and there was marked preference for the V2. The duration of the film was set to be less than three minutes.

## *4. Participatory Evaluation of the prototype and feedback study*

At this stage the prototype was subjected to a participatory feedback evaluation at two coastal villages, Chellanam and Vypin in Eranakulam district. The animators from CDiT also participated in the evaluation along with the project team. At Chellanam the Participatory evaluation and preview was arranged at Kannamaly church hall and about 15 active fishermen participated.

The main objective of the evaluation was to assess which version was perceived to be better in making the fishermen interpret the message effectively. The methodology followed in the study is given below;

## **Methodology**

Each stakeholder was individually exposed to the two versions (V1 and V2) of the film separately. Feedback was collected immediately after each exposure. The number of exposure was limited to two. The questions asked were

1) what message did they get from the film 2) whether they liked the film? If so, why? 3) what did they consider as the most striking thing about the film-visualization, music etc and 4) suggestions for changes if any. Answers to these questions were collected after every exposure. Once all the fishers were exposed to the film they were invited for a group discussion over a cup of tea.

Apart from the theme of the film the concept of Responsible fisheries was also brought for discussion. Though there was agreement among the fishers on the need to avoid the harmful practice of juvenile fishing by using nets with recommended mesh size, some of them highlighted the difficulties in adopting this measure. It was also pointed out that even the factory owned by Kerala government was producing illegal nets! The main difficulty was due to the multi-species nature of our fisheries.

The copies of the FAO CCRF in Malayalam were distributed to them. The film was shown using a CD player and a small portable TV set. The entire process, which took about three hours, was video taped.

### Results of feedback study

The results of the feedback were very interesting. The V1 was perceived in

different ways by fishermen and the discrepancy in perception was found to be minimum for V2. For eg. many fishers who saw the version 1 failed to get the intended message. Instead they got the main message as the spread of diseases (by flies) caused by unhygienic conditions on the beach. But a majority could interpret version 2 correctly. The results of the feedback study are given in Table 6.

### 5. Incorporation of changes suggested by fishers

It was clear that version 2 was perceived to be more effective in conveying the message. There were other very important suggestions made by fishers. They pointed out that the picturisation of boats were not representative as trawlers were not shown among the crafts. In fact they alleged that the main culprit in destroying the juveniles were trawlers. Another interesting suggestion was the demand to put the music scores of the famous film “Chemmeen” as background music. This indicated the popularity of that film which was released in the early sixties. These changes were incorporated in the final version.

### 6 Production of Final version and Preview

Table 6. Perceived interpretations for the two versions of the animation film

Interpretations (%perception)	Version 1	Version 2
1. Bad effects of Juvenile fishing	33.3	86.67
2. Trash fish posing health hazards	86.67	13.33
3. Message not clear	13.33	nil



The final version was previewed first at CMFRI and later at the same locations where the participatory evaluations were conducted. The film in general was appreciated well.

#### 7. Telecast of the film through “Doordarshan”

The animation film was telecast through the Malayalam regional channel of ‘Doordarshan’, the official TV channel of Govt. of India during June-July 2003. These months were selected for the telecast on the assumption that there would be more viewer ship due to the monsoon trawl ban imposed during these months. It was telecast at a

frequency of weekly twice at 3 P.M. and 6.30 P.M. A feedback study was conducted at selected locations in all the coastal districts. The results indicated that the film effectively conveyed the message and it was a new experience for the fisherfolk. The timing of the telecast had varying impact by way of viewer ship. There was more viewer ship for the late evening slot compared to the afternoon slot. This was mostly attributed to the fact that the evening slot preceded a serial, which had a theme related to the lives of fisherfolk. The results of the feedback study are given in Table 7. It is to be noted that the total estimated viewership of Doordarshan is about 20 lakhs.

#### The animation film winning international acclaim!

The development and telecast of the animation film titled “*Kunjumeenum kothukuvalayum*” (*Little Fish and Tiny Net*) is another landmark achievement of the project. This short animation film very poignantly and with a touch of humour underscores the need for using fishing nets only of recommended mesh size to avoid juvenile fishing. The film was **telecasted through Doordarshan-**, which has the largest viewer ship among the fisherfolk of Kerala- for a period of two months continuously during June –July in 2003 at a frequency of twice a week. A commercial channel called Asia Net also telecast the film. It is for the first time that an Animation film has been developed with this theme and has been used as a powerful mass media communication tool especially for fisher folk. The English version of the film was **short listed by the prestigious Global Environmental Film festival (Earth vision) in Tokyo 2003** ([http:// www.earth-vision.jp](http://www.earth-vision.jp)).

The film was also shown to a group of international participants to the training programme on “Alternative approaches to fisheries management” held at the International Agriculture Center, Wageningen University, the Netherlands during 5 October to 21 November, 2003.

The film is now available in all the Indian maritime languages (Hindi, Gujarati, Marathi, Kannada, Tamil, Telugu, Oriya, and Bengali). The Malayalam and English versions of the film can be accessed at [www.aticcmfri.org](http://www.aticcmfri.org). under the link ‘Responsible Fisheries Extension-CMFRI Initiatives in India.’

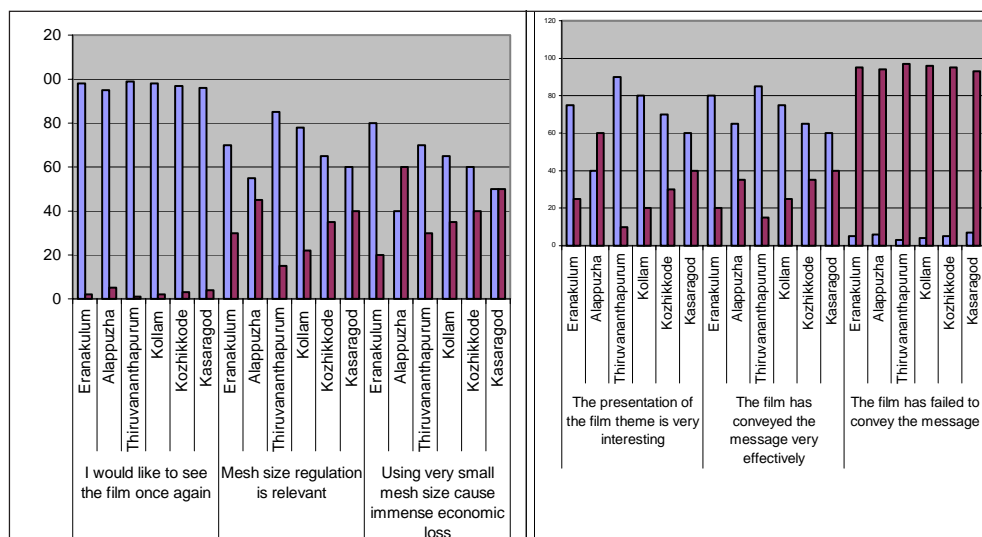


Fig. 4. Perceived feedback response in different locations

#### d) Versions of the film in all the Indian maritime vernaculars.

The animation film is now available in all the nine Indian maritime vernaculars like Hindi, Gujarati, Marathi, Kannada, Malayalam, Tamil, Telugu, Oriya, and Bengali. The same procedure was followed in validation of these versions.

#### e) Animation film on Responsible aqua/mariculture

This film titled ‘The Greedy Fish Farmer’ deals with the issue of excessive dependence on chemicals like antibiotics in aqua/mari culture activities. The story board of the film is given below:

“The greedy fish farmer day dreams about the immense profit he is going to fetch from his shrimp farm - jerking himself out of the slumber he dashes to his farm to check the growth of his shrimps - finds that they are not growing to his expectation - some look very weak and unhealthy - following the advice of a feed seller he applies antibiotics copiously - his shrimps are exported -

but alas, it gets rejected after the detection of antibiotics in it - he to his shock finds that the whole lot of shrimp has comeback - his dreams get shattered - he decides not to use antibiotics but to follow responsible aquaculture practices”.

The film being self-explanatory is devoid of any dialogues. Hence it is not constrained by any linguistic barriers.

#### f) Campaign materials

A campaign on Responsible fisheries is an effective extension intervention to get the message of Responsible fisheries close to the hearts of fisher folk and other stakeholders in a massive way. A campaign provides the opportunity to use a number of communication tools. A few tools have been designed in this line. Here also the opinion of the fishers was sought. One important suggestion was that the tools should be of longer utility to them. Thus a T- shirt and a wall hanger showing messages related to responsible fisheries in an effective and attractive way were designed. One interesting thing observed was the preference for the use



Table. 7. Perceived feedback response in different locations

Items	Place	Viewer's perception in %	
		Agree	Disagree
The presentation of the film theme is very interesting	Eranakulum	75	25
	Alappuzha	40	60
	Thiruvananthapuram	90	10
	Kollam	80	20
	Kozhikkode	70	30
	Kasaragod	60	40
The film has conveyed the message very effectively	Eranakulum	80	20
	Alappuzha	65	35
	Thiruvananthapuram	85	15
	Kollam	75	25
	Kozhikkode	65	35
	Kasaragod	60	40
The film has failed to convey the message	Eranakulum	5	95
	Alappuzha	6	94
	Thiruvananthapuram	3	97
	Kollam	4	96
	Kozhikkode	5	95
	Kasaragod	7	93
I would like to see the film once again	Eranakulum	98	2
	Alappuzha	95	5
	Thiruvananthapuram	99	1
	Kollam	98	2
	Kozhikkode	97	3
	Kasaragod	96	4
Mesh size regulation is relevant	Eranakulum	70	30
	Alappuzha	55	45
	Thiruvananthapuram	85	15
	Kollam	78	22
	Kozhikkode	65	35
	Kasaragod	60	40
Using very small mesh size cause immense economic loss	Kasaragod	50	50
	Eranakulum	80	20
	Alappuzha	40	60
	Thiruvananthapuram	70	30
	Kollam	65	35
	Kozhikkode	60	40

of English while depicting the message on T-shirt. The tools designed are shown below.

*1) T-shirt with message imprinted*

The main message on the chest is “Save the seas first and catch the fish next” written around the picture of a fish protected by two hands. The message given on the backside is “Fish for all for ever....Let’s Practice Responsible Fisheries...” .

*2) Wall hangers*

The wall hanger has the following message both in Malayalam and English. “Only when the last tree has been cut down/only when the last river has been poisoned/only when the last fish has been caught/only then we realize that we can’t eat money”.



## Communication strategies

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The spirit behind the code of conduct for responsible fisheries is voluntary action. This implies that extension intervention has to go beyond mere supply of information. The typical extension approach of creating awareness among fisher folk about the need of responsible fisheries using centrally designed communication messages would not be sufficient. The act of communication itself is equally important as that of the tools devised for communication. Thus the main communication strategy was to convert the very process of designing various communication tools as *conscientisation episodes*.

When the intended audience themselves get a chance to actively participate in the process of message construction it becomes an experience of *meta-communication*. It also offers a shared learning experience to all the participants. The co-learning in turn provides a unique empowerment experience. The dynamics of this process is captured in fig.5.

It is with this theoretical background that the communication strategies were

attempted in the project. The major strategies composed of

### *1.Co-learning workshops on Responsible Fisheries*

1. Designing and validation of communication tools as conscientisation episodes.
2. Mass contact through telecast of Animation film through Television
3. Mass contact through radio talks on Responsible fisheries
4. Popularization of the code of conduct through fisheries-related media
5. Individual and group contacts with the FAO Code of conduct for responsible fisheries acting as a talking point.
6. Campaign on responsible fisheries
7. Mass contact through Internet

### *1.Co-learning workshops to design*

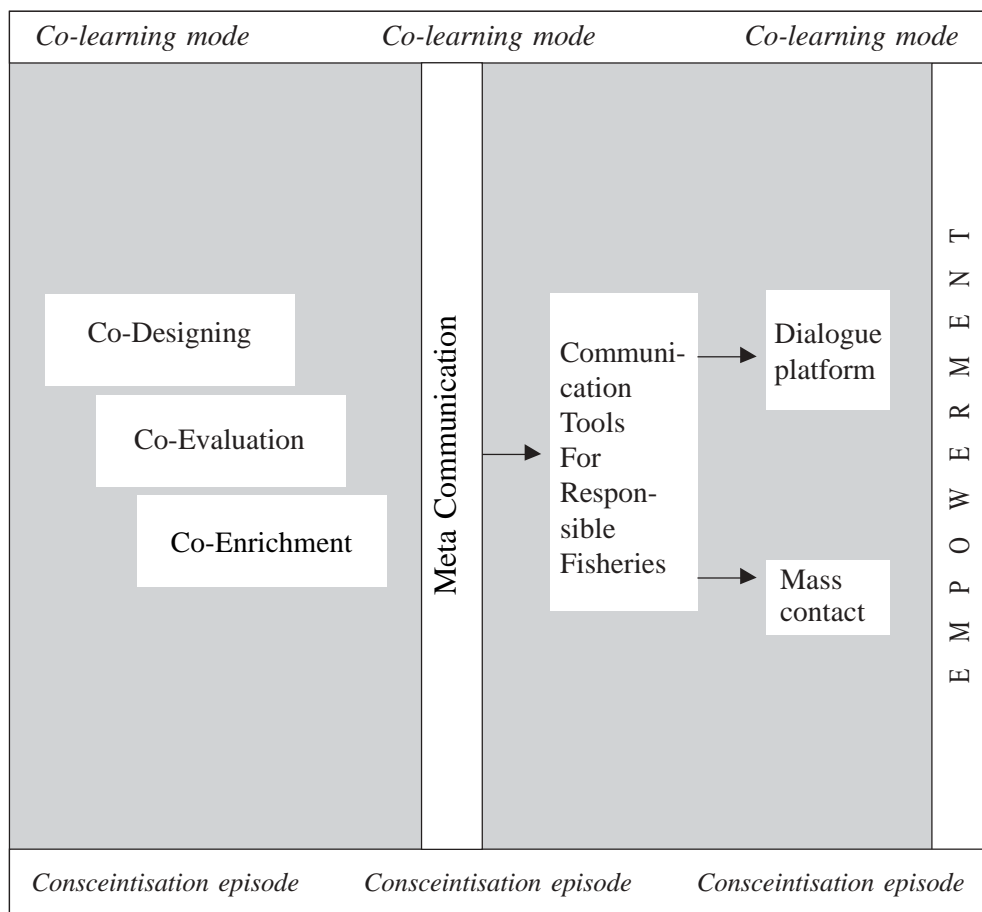


Fig. 5. Dynamics of the Communication process.

*visual communication tools Responsible Fisheries*

**a) All Kerala painting competition on Responsible Fisheries**

In order to design visual communication tools in a participatory manner, an All Kerala painting competition on the theme “Responsible fisheries” was conducted at CMFRI on 6.11.2002. About 60 students from different parts of the State, participated representing three categories viz, Fisheries Technical High school (which are schools run by the Government of Kerala exclusively for the children of the fisher folk.) Vocational higher secondary schools (Fisheries) and

Fisheries related colleges. It was for the first time that such an event with participation from allover the state was being conducted .The selected paintings of the students were used for the campaign. The price winners were felicitated and given the prizes. The prizes were sponsored by different private agencies working in the fisheries sector. An exhibition was conducted depicting all the paintings. The event attracted good media attention.

The competition was inaugurated in a unique way by way of a Participatory Painting on the same theme. The inaugural strokes given by Dr. Mohan Joseph Modayil, Director, CMFRI on a big canvas were later completed by the





## All Kerala Painting competition on Responsible Fisheries



All Kerala painting competition on responsible fisheries



Participants with their paintings

*All Kerala Painting competition on Responsible Fisheries*



Same theme but different shades of imagination...



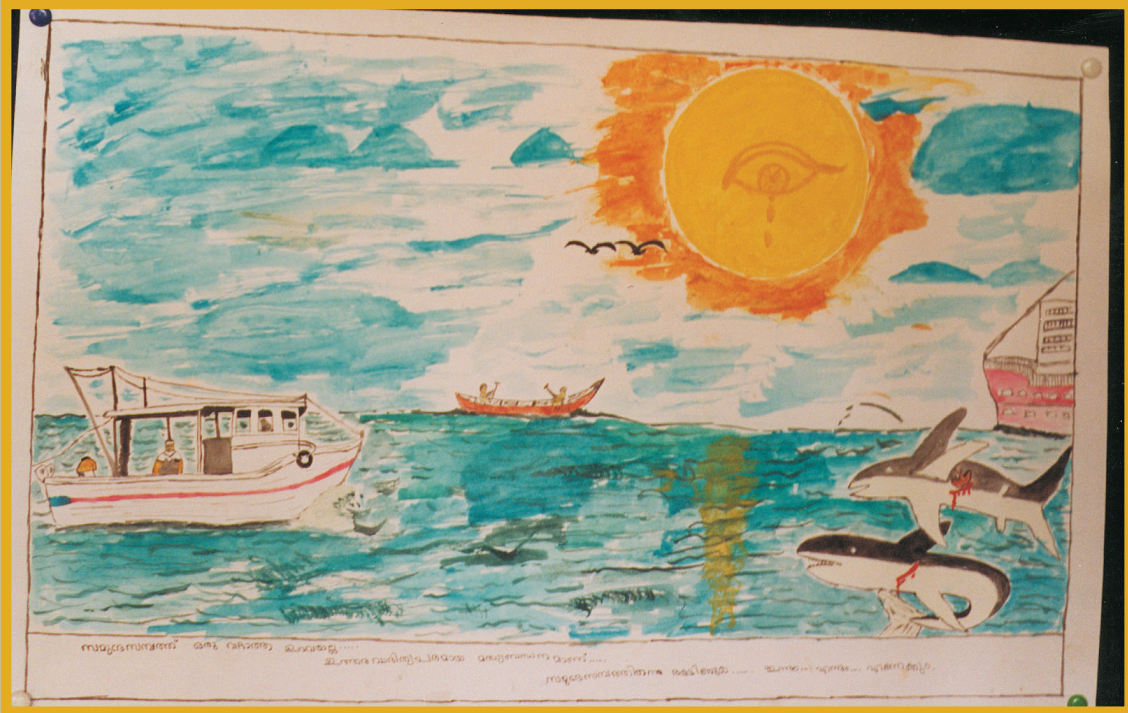
*All Kerala Painting competition on Responsible Fisheries*



Same theme but different shades of imagination...



*All Kerala Painting competition on Responsible Fisheries*



Same theme but different shades of imagination...



participants including the staff members of CMFRI.

A video-documentary has been prepared covering the entire event. It is titled “Colourful Voices for responsible fisheries” (see Annexure 3 for its script).

## 2. Campaigns launched on Responsible Fisheries

A statewide campaign on Responsible fisheries was launched in August, 2003. As a curtain riser event a two-day co learning workshop was held first at Kozhikode and later at Kannore and Kochi. As many as 50 participants from different coastal panchayats in the State participated in the workshop which was jointly organized by CMFRI and MCITRA, an NGO based in Kozhikode. Fisheries experts from CMFRI and Central Institute of Fisheries Technology (CIFT) facilitated various sessions like biological basis of fishery resources, technological options for responsible fisheries, policy/legal instruments, community based resource management options etc.

### Communication Characteristics of Co-learning workshops

1. The titles of all the sessions were supplemented with a qualification- “As We know”. For eg. Fisheries Resources-As We know or fisheries biology-As We know. This was to avoid the perceived hegemony of institutionalized or “official” fisheries science and thereby to encourage participation of all stakeholders in the discourse.

2. Each session was conceived as freewheeling interactions initiated by a short presentation by the facilitator.

Special care was taken to ensure that a communication environment, which did not inhibit anyone to have free and healthy interaction, prevailed through out the workshop.

1. The discussions were both audio and video recorded. Though this obviously increased the transaction cost it improved the confidence of the participants, which in turn increased the communication fidelity.

4. The animation film was shown to the participants repeatedly and it acted as an effective dialogue opener.

5. All the participants were given the copies of the Malayalam version of FAO CCRF and the illustrated booklet.

4. The presence of Mr. Jossy Palliparambil, a role model for stakeholder- induced responsible fisheries practices, during the session on Responsible fisheries was very well appreciated by the participants. This was mainly due to the fact that they could easily identify with the concerns expressed by Jossy as he was perceived not as an outsider unlike the experts.

1. The participants of the workshop volunteered themselves to act as responsible fisheries ambassadors.

5 The Co-learning workshop conducted at Kannur was exclusively for fisher women. This received tremendous support from women stakeholders.

### c) Mass media extension interventions (news papers, TV, radio and Internet)

Various mass media were effectively utilized at various stages of the project.

All the events which were organized under the project were given good media coverage. All the major dailies (like The Hindu, the new Indian express, Times of India, Economic Times, The Hindu Business Line, Malayala Manorama, Mathrubhumi, Mangalam, Deshabhimani, Madhyamam, etc.) Television channels like Asianet, Surya, Kairali TV , etc and All India Radio gave good coverage to different activities conducted under the project from time to time.

All India Radio broadcast a talk by Dr C Ramchandran on the need for adopting the FAO code of conduct for responsible fisheries in August, 2003.

The Malayalam translation of the FAO CCRF as well as the illustrated booklet was serialised through the weekly newspaper for the fisher folk namely '*Coastal times*' during 2003-2004.

#### **d) Internet**

The potential of Internet was also harnessed in putting the message of responsible fisheries across. The activities and outputs of the project have been placed on Internet. This has been done as a link under the site of the Agricultural Technology Information Center (ATIC ) of Central Marine Fisheries Research Institute ([www.aticcmfri.org](http://www.aticcmfri.org)). The name of the link is "Responsible Fisheries Extension-CMFRI Initiatives in India". The full texts of the translated version of the FAO CCRF and the booklet along with a brief report on the different events organized under the project are now freely accessible under this link. The English and Malayalam versions of the animation film are also made available under this site.





Launching of the campaign on responsible fisheries at the end of the two-day Co-learning workshop conducted at Kozhikode during 12-14 August 2003

*Co-learning sessions on Responsible Fisheries*



Co-learning session on responsible fisheries exclusively for women at Kannur



Co-learning session on responsible fisheries with fisherman at Kannur



*Co-learning sessions on Responsible Fisheries*



Dr. C. Ramachandran and Dr. V.P Vipinkumar conducting Co-learning sessions



*All Kerala Painting competition on Responsible Fisheries*



Exhibition of the paintings held at CMFRI



## Annexure I

# SUMMARY OF THE FAO CODE OF CONDUCT FOR RESPONSIBLE FISHERIES

### **Introduction**

Fisheries, including aquaculture, provide a vital source of food, employment, recreation, trade and economic well-being for people throughout the world, both for present and future generations. So it should be conducted in a responsible manner. The code sets out principles and standards of behavior to ensure conservation, management and development of living aquatic resources with due respect for ecosystem and biodiversity. The code recognizes the nutritional, economic social, environmental and cultural importance of fisheries; it takes into account the biological characteristics of the resources and their environment and the interest of all concerned with the fishery sector including the consumers and other users. States and all those involved in fisheries are encouraged to apply the code and give effect to it.

### **Article 1**

#### **Nature and Scope of the Code**

The code is voluntary. The norms are global in scope, covering all fish-related activities. They are addressed to all states, institutions, and persons involved with and concerned about fisheries.

### **Article 2**

#### **Objectives of the code**

Though there are ten objectives, they are summarized as given below:

To establish principles in accordance

with international law and for implementation of national policies, taking into account all relevant aspects for responsible fisheries.

To serve as an instrument for reference to states to establish and improve legal and institutional framework and provide guidance in formulation of international agreements to foster responsible fisheries

To facilitate all manner of cooperation for conservation of resources and management and development of fisheries

To promote contribution of fisheries to food security, particularly of needy local communities and promote the trade of fish in conformity with international rules so as to counter hidden barriers

To promote protection of aquatic resources, their environment and coastal areas and undertake research on fishery-related ecosystems and relevant environmental factors.

To provide standards of conduct for all persons involved in the fisheries sector

### **Article 3**

#### **Relationship with other international instruments**

The code is to be interpreted and applied in conformity with relevant rules of international law as reflected in UNCLOS; consistent with the provisions of UNCLOS relating to Conservation

and Management of Straddling Fish stocks and Highly Migratory Fish stocks; and in the light of the declaration of Cancun, the Rio Declaration and particularly chapter 17 of Agenda 21 adopted by UNCED.

#### **Article 4**

#### **Implementation, monitoring and updating**

The code is meant for all involved in fisheries to implement. All should make efforts to understand the code and to implement interventions to promote its acceptance by all stakeholders. FAO will monitor the implementation of the code. It may revise the code in accordance to the needs arising in future.

#### **Article 5**

#### **Special Requirements of Developing Countries**

The capacity of developing countries to put the code in practice should be taken into account and special assistance should be provided to them to adopt the measures mentioned in it.

#### **Article 6**

#### **General principles**

General principles, 19 in number, enunciate the fundamental philosophy and spirit of the code. It is to be noted that these principles are largely addressed to States. The main tenets can be summarized as given below.

The right to fish carries along with it the obligation to do it responsibly. Sustainable management of the fishery resource should be undertaken in the context of the total aquatic ecosystem. To ensure this fishing effort should be commensurate with the productive capacity of the fishery resources. Management should be based on the precautionary approach using the best

scientific evidence and traditional knowledge, taking into consideration all socio-ecological and techno-economic aspects and fostering an atmosphere of cooperation in research to achieve this. Use selective gear to maintain biodiversity, conserve population structure, aquatic ecosystems and fish quality, keeping in mind the need to minimize waste and maintain nutritional value. All critical coastal zone habitats, which contribute to fishery, should be protected and such efforts integrated into coastal area management measures (6.1 to 6.9).

The activities of fishing vessels should be monitored and controlled to ensure that they do not undermine conservation and management efforts within and outside national jurisdiction. This has to be done within the relevant laws and in cooperation with appropriate institutional structures. In order to make any decision making process transparent effective participation of all stakeholders should be ensured while making laws and policies related to fisheries management as well as issues in fisheries development. Trade should be in accordance with the WTO agreement. But it should be ensured that the trade policy does not lead to obstacles to trade or adverse social, environmental or nutritional impacts. Dispute settlement should be undertaken cooperatively and peacefully (6.10 to 6.15).

Awareness on responsible fisheries should be promoted through education and training of fishers and fish farmers. They should be involved in the policy formulation and implementation. All fishing activities should be safe, healthy, and ensure fair standards and living conditions. The rights of fishers, especially those engaged in subsistence, small-scale and artisanal fisheries, for



secure livelihood and preferential access to resource in national waters should be ensured. While aquaculture may be considered to promote diversification of income and diet it should bring minimum adverse impact on the environment and local communities ensuring responsible use of resources (6.16 to 6.19).

## **Article 7**

### **Fisheries management**

This article, generally addressed to states, is subdivided into eight sections viz., general principles, management objectives, management framework and procedures, data gathering and management advice, the precautionary approach, management measures, implementation and financial institutions.

#### *General (7.1)*

A consolidation of the ten general aspects given in the code is given below:

States should give priority to long-term measures for conservation and sustainable use of resources. Short-term considerations should not compromise these objectives. Responsible fisheries, within national jurisdiction, can be achieved only through the participation of all stakeholders. In the case of straddling, migratory and high seas fish stocks, management can be achieved through the cooperation of states under the aegis of bilateral or regional institutional arrangements. The nonmember states should cooperate. These regional organizations should afford wide-ranging opportunities for both governmental and non-governmental representatives to participate as observers or otherwise, and provide to them timely access to records and reports of relevance. This will ensure transparency in the mechanisms for management and related

decisions. Mechanisms for monitoring, surveillance, control and enforcement should be established. Measures should be taken to eliminate excess fishing capacity and thus ensure that the rate of harvesting effort is in tune with the regeneration capacity of the fishery resources. Due publicity should be given to all aspects of responsible fisheries explaining the basis and purposes of such measures to all users in order to obtain support for the implementation of the code (7.1.1 to 7.1.10).

#### *Management objectives (7.2)*

States and regional management organizations should aim at measures to maintain stocks at levels capable of producing Maximum Sustainable Yield. The overriding objective must be conservation and long-term sustainable use of the fishery resources. These measures should avoid excess capacity and ensure economic condition of the fishing industry and take into special account the interest of the small-scale artisanal fisheries. Steps to ensure biodiversity of ecosystems and protection to endangered species should be taken. Depleted stocks should be allowed to recover and adverse environmental impacts caused by human activities assessed and corrected. Pollution, wastes, discards and by-catch should be minimized by the use of selective, environmentally safe, cost effective fishing gear. Assessments should be made of the impact of environmental factors on target fish stocks and other stocks in an ecosystem (7.2.1 to 7.2.3).

#### *Management framework and procedures (7.3)*

Management, using the best scientific evidence, should be concerned with the whole stock unit over its entire area of distribution. States should ensure

compatibility between their management measures for straddling and migratory fish stocks. Long-term management objectives should be formulated into fishery management plans. States and / or regional fishery management organizations should foster international cooperation and coordination in respect to information collection and exchange, research, management and development. When actions of states through a non-fishery organization will affect the conservation and management measures of a regional fisheries organization, the latter should be consulted in advance on the implications (7.3.1 to 7.3.5).

#### *Data gathering and Management advice (7.4)*

States should ensure that the best scientific evidence is used to evaluate current status of the resource and impact of future measures. Research in support of management should be undertaken on the effect of climatic, environmental and socioeconomic factors and the results disseminated to interested parties. Studies on the costs, benefits and effects of alternative management options for rationalizing excess fishing capacity and effort should be promoted. Timely and reliable statistics on catch and fishing effort as well as on the socioeconomic and institutional aspects of fisheries should be collected and maintained where appropriate in accordance with international practices and formats. Regular updating and appropriate dissemination and exchange of data should be fostered between states and regional fisheries management organizations (7.4.1 to 7.4.7).

#### *Precautionary approach (7.5)*

States should apply the precautionary approach to conservation; management and exploitation of resources and the absence of scientific information should

not be used as a reason for postponing management measures. In implementing this approach the uncertainties relating to size and productivity of stocks, reference points, distribution of fishing mortality, impact of fishing activities such as the level of discards, and the other environmental and socioeconomic conditions should be considered. Based on the best scientific evidence states should determine stock specific target reference points, stock specific limit reference points and the action to be taken if they are exceeded. In the case of new or exploratory fisheries cautious conservation and management measures should be adopted at the earliest. If a natural phenomenon has a significant adverse impact on the resource, states should ensure that fishing activity does not exacerbate such adverse impact (7.5.1 to 7.5.5).

#### *Management measures (7.6)*

States should ensure that the level of fishing permitted is commensurate with the state of fisheries resources. No vessel should be allowed to fish unless authorized to do so consistent with international law in the high seas and national laws in the states' jurisdiction. There should be mechanisms to monitor fleet capacity and to reduce excess capacity to levels in keeping with sustainable use of resources so that fishers operate under economic conditions, which promote responsible fisheries (7.6.1 to 7.6.3).

The performance of existing fishing gear, methods and practices should be examined and those inconsistent with responsible fishing phased out, giving attention to the impact of doing so on fishing communities, and then be replaced with acceptable alternatives. States should regulate fishing in such manner as to avoid risk of conflicts



among fishers using different vessels, gears and methods. When decisions on conservation and management are taken, due recognitions should be given to traditional practices of those highly dependent on the resources such as indigenous people and local fishing communities. On considering alternative conservation and management measures, the cost effectiveness, social impact and efficacy should be under continuous review and the measures be revised or abolished in the light of new information (7.6.4 to 7.6.8)

States should take measures to minimize waste, discards, and catch of non-target species especially endangered species. These measures may include standard technical management measures and they should protect juveniles and spawners. Use of selective, environmentally safe and cost effective gear and techniques should be promoted by states and regional fisheries management organizations. The latter should ensure that efforts are made to facilitate recovery of resources and habitats critical to their well being, which are threatened with depletion by fishing and other human interventions (7.6.9 and 7.6.10).

#### *Implementation and Financial Institutions (7.7 and 7.8)*

States should ensure that an effective legal and administrative framework for fisheries resource conservation and management be established at appropriate levels. The laws and regulations should be adequately severe and include sanctions for refusal, withdrawal or suspension of authorizations to fish in the event of violation. An effective fisheries monitoring, control and surveillance and law enforcement measures including observer programs and implemented by

regional management organizations (7.7.1 to 7.7.3)

States which are members of, or participants in sub –regional or regional fisheries management organizations should implement internationally agreed measures to deter the activities of vessels flying the flag of non-members, which undermine conservation and management measures. States should agree on the manner of financing these organizations keeping in mind the benefits gained from them. States should discourage banks and financial institutions from requiring fishing or fishing support vessels from being flagged in a jurisdiction other than that of the State of beneficial ownership of the vessel (7.7.4 to 7.8.1).

#### **Article 8**

##### **Fishing operations**

Perhaps the largest article in the code this is divided into 11 sections. It largely elaborates on fishing operations undertaken in national and international waters and duties of all states, flag states and port states in ensuring that fishing operations are undertaken in a responsible manner.

##### *Duties of all States (8.1)*

States should keep an updated record of fishing authorizations, maintain the statistical data pertaining to this and ensure that only such authorized operations are carried out in national waters and in a responsible manner (8.1.1 to 8.1.3).

States should cooperate, in accordance with international law, to establish monitoring, control and surveillance in respect of fishing operations outside national jurisdiction. They should ensure that the safety and health, as well as the conditions of work

and service, of all employed on these vessels is at par with relevant international agreements in this regard. A record should be kept of the service, qualifications, and certificates of competency of all fishers. Service measures of masters and officers of fishing vessels should include provision of refusal, withdrawal or suspension of their authorizations in the event of violating fishing operation norms. Efforts should be made to integrate fishing operation into maritime search and rescue systems (8.1.4 to 8.1.6; 8.1.8 and 8.1.9).

States should enhance education, training, skill and professional qualifications of fishers in accordance with international guidelines. All those involved in fishing operations should be given information on the important provisions of the code and other relevant international conventions which are essential to ensure that they undertake responsible fishing operations (8.1.7 to 8.1.10).

#### *Flag state duties (8.2)*

Flag states should maintain proper records of their fishing vessels, mark them and their fishing gear in accordance with uniform and internationally recognizable marking and issue the vessels with a Certificate of Registry. The vessels should carry this and the authorization to fish on board. Appropriate safety requirements for the vessels and the fishers should be ensured in accordance with internationally agreed codes and voluntary guidelines (8.2.1 to 8.2.5).

States not party to the agreement to Promote Compliance with International Conservation and Management Measures by Vessels Fishing in the High Seas should be encouraged to accept and adopt regulations consistent with it. Flag

vessels, which contravene conservation and management measures, should attract sanctions from their flag states under appropriate national legislations, which may include suspension of the authorization to fish (8.2.6 to 8.2.7).

Flag states should promote access to insurance coverage sufficient to protect the crew and indemnify third parties against loss or damage and to protect their own interest. Crewmembers should be entitled to repatriation in accordance with the 1987 “Repatriation of seafarers Convention (revised) (No166)” in this regard. In case of an accident to the vessel or anyone on board, particularly and foreign national, the flag state should provide details of the accident to the state of the foreign national involved and the IMO (8.2.8 to 8.2.10).

#### *Port State duties (8.3)*

Port states should undertake measures, in a nondiscriminatory manner through procedures established in keeping with national and international law, as are necessary to assist other states to achieve the objectives of this code. They should make known the details of the steps taken for this purpose.

#### *Fishing operations (8.4)*

States should ensure that fishing operations are conducted with due regard to the safety of human life, protection of the marine environment and prevention of damage or loss to fishing gear in accordance with relevant IMO requirements (8.4.1).

States should prohibit dynamiting, poisoning, and other comparable destructive fishing practices. States should encourage development of technologies and fishing practices that reduce discards and support use of gear that increase survival rates of escaping fish for the best use and care of the





retained catch. Documentation with regard to retained catch, discards and information required for stock assessment should be collected and forwarded systematically to the bodies requiring it for management. Assessments of the implications of habitat disturbance should be carried out prior to the introduction of gear on commercial scale. Research on the socio-economic impact of fishing gear, particularly the impact on biodiversity and coastal fishing communities should be promoted (8.4.2 to 8.4.8).

#### *Gear selectivity (8.5)*

States should require using of more selective gears. Fishers should mutually cooperate in the development of such gears and information about this made available to all. As a measure to achieve this, an inventory of such selective fishing gear, methods and strategies available to the industry should be noted. Standard methodologies for research into fishing gear selectivity, fishing methods and strategies should be undertaken and international cooperation in this regard encouraged for both dissemination of information and transfer of technologies (8.5.1 to 8.5.4).

#### *Energy optimization (8.6)*

States should promote more efficient use of energy in harvesting and post-harvest activities and promote transfer of technologies in relation to energy optimization devices providing encouragement to fishing vessels to fit them on board (8.6.1 and 8.6.2).

#### *Protection of aquatic environment (8.7)*

States should introduce and enforce laws and regulations based on MARPOL 73/78 to prevent pollution from fishing vessels. They should ensure that vessels adopt proper provisioning practices, are equipped with appropriate waste

treatment devices and have crew which are conversant with the proper procedures of waste disposal at sea (8.7.1 to 8.7.4).

#### *Protection of the atmosphere (8.8)*

States should adopt standards and guidelines for fishing vessels to ensure reduction of dangerous substances in exhaust gas emissions and ozone depleting substances in their equipments. Crew should be conversant with the proper handling of such equipment. A programme to phase out CFCs and FCFCs in refrigeration systems and Halons in fire fighting equipment should be undertaken while alternatives are being installed. The disposal of the substances should follow international guidelines and all concerned should be aware of the procedures (8.8.1 to 8.8.5).

#### *Harbours and landing places for fishing vessels (8.9)*

In the design and construction of harbour and landing places states should take into account safe havens and adequate serving facilities for vessels, vendors and buyers. Freshwater and sanitation arrangements and waste disposal systems should be introduced thus minimizing pollution from fisheries activities and external sources. Erosion and siltation should be combated. All this should be undertaken in an institutional framework, which allows for consultation among those responsible for coastal area management (8.9.1 to 8.9.2).

#### *Artificial reefs and fish aggregating devices (8.11)*

States should develop policies to enhance stock populations and fishing opportunities through the use of artificial structures keeping in mind relevant international conventions concerning environment and safety of navigation when selecting materials and locations

for their placement. Authorities maintaining cartographic records should be informed prior to placement or removal of such reefs. Research into the use of such structures, their impact on the marine resources and environment should be promoted. Management systems for reefs and aggregation devices should be set up within the framework of coastal area management plans and take into account the interests of artisanal and subsistence fishers (8.11.1 to 8.11.4).

## **Article 9**

### **Aquaculture development**

#### *Under national jurisdiction (9.1)*

States should establish an appropriate legal and administrative framework to facilitate responsible aquaculture. It should promote advance evaluation of the effects of aquaculture on genetic diversity and ecosystem integrity. Plans and strategies to ensure sustainable aquaculture and rational use of resources shared by aquaculture and other activities should be produced and updated. States should establish effective procedures to undertake environmental assessments and monitoring to minimize adverse ecological changes and economic and social consequences resulting from water extraction, land use, discharge of effluent, use of drugs and chemicals related to aquaculture development. The livelihood of local communities and their access to fishing grounds should not be negatively affected by aquaculture development (9.1.1 to 9.1.5).

#### *Within trans-boundary Aquatic ecosystems (9.2)*

States should protect trans-boundary aquatic ecosystems by ensuring responsible choice of species, siting and

management of aquaculture activities. They should establish mechanisms to collect, share and disseminate data about their aquaculture activity which facilitate cooperation and planning of the activity at all levels and cooperate to develop mechanisms to monitor the impact of all inputs used in aquaculture (9.2.1 to 9.2.5).

#### *Use of genetic resources (9.3)*

States should conserve genetic diversity and maintain integrity of aquatic communities and ecosystems by appropriate management. They should minimize harmful effects of introducing non-native species or genetically altered stocks and minimize adverse genetic disease and other effects of escaped farmed fish on wild stocks. States should cooperate to establish an international code of practice for introduction and transfer of aquatic organisms and minimize risks of disease transfer procedures for the selection of brood stock, production of eggs, larvae and fry. States should promote research and development of culture techniques for endangered species to conserve their genetic diversity (9.3.1 to 9.3.5).

#### *Responsible aquaculture at production level (9.4)*

States should promote responsible aquaculture in support of rural communities, producer organizations and fish farmers ensuring their active participation to achieve it. The state should improve selection and use of appropriate feeds, feed additives, fertilizers, manures, promote effective farm and fish health management practices, minimize use of therapeutants, hormones, drugs, antibiotics and all other chemical inputs in aquaculture which are hazardous to human health and environment. The food safety of aquaculture products should be ensured



by maintaining quality and care during their harvesting, processing, storage and transportation (9.4.1 to 9.4.7).

#### **Article 10**

#### **Integrating fisheries into coastal area management**

##### *Institutional framework (10.1)*

Taking into consideration the fragility of coastal ecosystems, the finite nature of the resources and the needs of coastal communities, states should ensure an appropriate policy, legal and institutional framework. This framework should determine possible uses of coastal resources and govern access to them taking into account the rights and customary practices of coastal fishing communities. In view of the multiple uses of the coastal area, the state should ensure that representatives of the fisheries sector and fishing communities be consulted in any decision-making processes relating to coastal area management planning and development. The state should adopt fishing practices that avoid conflict among and between fisheries resources users and other users of coastal areas and also establish procedures and mechanisms to settle conflict among and between these parties (10.1.1 to 10.1.5).

##### *Policy measures (10.2)*

The state should promote public awareness of the need for protection and management of coastal resources and ensure participation of those affected to the management process. The state should take due account of the risks and uncertainties and promote the assessment of their respective values of coastal resources taking the economic, social and cultural factors into account. In accordance with their capacities states should establish systems to monitor coastal environment and promote multi

disciplinary research in support of coastal area management taking the environmental, biological, economic, social, legal and institutional aspects into account (10.2.1 to 10.2.5).

##### *Regional cooperation (10.3)*

States with neighboring coastal areas should cooperate to facilitate sustainable use of coastal resources and environmental conservation. If activities may have adverse trans boundary effects, timely information, early consultation and cooperation at sub regional and regional levels to improve coastal area management should be undertaken (10.3.1 to 10.3.3)

##### *Implementation (10.4)*

The mechanisms for cooperation and coordination among national authorities involved in planning of development and management of coastal areas with the appropriate representation of the fisheries sector should be ensured (10.4.1 to 10.4.2).

#### **Article 11**

#### **Post Harvest Practices and Trade**

##### *Responsible fish utilization (11.1)*

When formulating national policies for sustainable utilization of fishery resources, states should give due consideration to the economic and social role of the post-harvest fisheries sector. States should adopt measures to ensure the right of consumers to safe, wholesome, unadulterated fish and fishery products and maintain an effective national safety and quality assurance system and minimum standards in this regard to protect consumer health. These standards should be effectively applied throughout the industry and efforts should also be taken to implement the FAO/WHO Codex Alimentarius Commission agreements.

States should cooperate to achieve harmonization and/or mutual recognition of national sanitary measures and certification programmes and strives to establish mutually recognized control and certification agencies. Research in fish technology and quality assurance as well as projects to improve post-harvest processing, transporting and storage methods, which are environmentally sound, should be supported. (11.1.1 to 11.1.7)

States should encourage those involved in all post-harvest activities to reduce losses and waste; improve use of by-catch; use of water and energy in an environmentally sound manner; promote consumption of fish and the use of fish for human consumption whenever appropriate. States should ensure that international and domestic trade in fish and fishery products accords with sound conservation and management practices through improving the identification of the origin of the products. The environmental effects of post-harvest activities should be considered in evolving laws and regulations but without creating any market distortions.

#### *Responsible International trade (11.2)*

The provisions of this code in relation to trade should be interpreted and applied in keeping with the World Trade Organization (WTO) agreement. Trade should not compromise sustainable development and responsible utilization of living aquatics resources. States should ensure that measures affecting trade transparent and based on scientific evidence and in accordance with internationally agreed rules. Trade measures adopted to protect human or animal life or health, the interest of consumers or the environment should not be discriminatory and should be in accordance with the relevant

clauses of the WTO in this regard. (11.2.1 to 11.2.3)

States should liberalize trade; eliminate barriers and distortions to trade in accordance with the WTO Agreement. They should not create any hidden barriers that limit the consumer's freedom of choice or restrict market access. While fishing agreement between states may include provisions referring to access to resources, trade and access to markets, research, training and other relevant elements, states should not link access to markets to access to resources or to purchase of specific technology or sale of other products. (11.2.5 to 11.2.8)

States should adhere and bring about effective implementation of international agreements and standards relating to trade in fish, aquatic resource conservation and trade in endangered species. They should develop agreements for trade in live specimens where there is risk of environmental damage in importing or exporting states. (11.2.9 to 11.2.11)

States should cooperate to develop acceptable rules for trade and actively participate in relevant multilateral fora like WTO to ensure equitable, non-discriminatory trade in fish and fishery products and promote adherence to multilaterally agreed fishery conservation measures. States should ensure that conservation measures are not undermined to gain trade or investment benefits. All states, aid agencies, development banks and other such international organizations should ensure that their policies for trade and export promotion do not result in environmental degradation or adversely impact nutritional rights of people for whom fish is critical to their health and well-being (11.2.12 to 11.2.15).



### *Laws and regulations relating to fish trade (11.3)*

Law, regulations and procedures applicable to international trade should be transparent, simple and based on scientific evidence. In developing and implementing these laws, states should consult industry, environmental and consumer groups. When changes are made to legal requirements affecting trade, sufficient information and time should be allowed to producers affected in order to introduce changes needed. Consultation with affected states on a time frame of implementation of changes would be desirable giving due consideration to requests from developing countries for temporary derogations from obligations. States should review laws periodically to determine whether the conditions, which give rise to their introduction, continue to exist. Laws should be simplified without jeopardizing their effectiveness. Standards applicable to trade should be harmonized in accordance with relevant international provisions. States should collect, disseminate and exchange timely statistical information on trade through relevant national and international organizations. Any changes in laws should be notified to WTO and other appropriate international organizations.

### **Article 12**

#### **Fisheries research**

Sound data on all aspects of the fishery-biology, ecology, technology, environmental science, economics, social science, aquaculture and nutritional science-are a prerequisite to enable decision making for responsible fisheries. States should ensure appropriate research is undertaken and make available proper facilities and institutional arrangements for the same

.The data so generated must be analyzed and published on a timely basis in a manner that is easily understood (12.1 to 12.3).

States should strengthen national research capabilities and pay special attention to the collection of accurate data to assess the status of fisheries and related aspects of ecosystems, particularly the state of the stocks and the impact of fishing pressure, pollution and habitat alteration on the aquatic ecosystem. Steps should be taken to encourage cooperation with relevant international organizations to stimulate research on optimum utilization of fishery resources to support national policies related to fish as food. There should also be research into and monitoring of food supplies from aquatic sources to ensure no adverse health impacts (12.4 to 12.8).

The economic, social, marketing and institutional aspects of fisheries need to be adequately researched and comparable data generated. Studies on the selectivity of fishing gear and the environmental impact of fishing gear on target and non-target species need to be undertaken to aid management decisions for safeguarding the biodiversity of ecosystem. New gears should be introduced only after a scientific evaluation of their impact is undertaken. It is important to document the traditional fisheries knowledge and technologies of small-scale fisheries in order to assess their application for sustainable fisheries conservation, management and development. The results of research should be used for setting management objectives, reference points and performance criteria and ensure adequate linkages between applied research and fisheries management (12.9 to 12.13).

Research vessels should comply with all relevant laws and regulations of the State, other states and international law. State should support establishment of mechanisms to ensure that research in the high seas aims at following uniform guidelines and foster sharing of results at all levels. Collaborative technical and research programmes to enhance understanding of biology, environment and status of trans-boundary aquatic stocks should be encouraged (12.14 to 12.17).

States and relevant international

organizations should promote and enhance all aspects of the research capabilities of developing countries. International organizations should render technical and financial support to states for research on evaluating stocks, which have been previously unfished or lightly fished. Relevant technical and financial international organization should devote special attention to support research efforts of developing countries (12.18 to 12.20).

(This summary should not be treated as a substitute for the original).





**Annexure II**  
**ARFIN INTERVIEW SCHEDULE**

Village                                      Block                                      District :

**Module –I**

1. Name and address
2. Sex and age
3. Educational status: Illiterate/primary/middle/secondary/higher secondary/college/technical
4. Occupation: a) Fishing alone b) Fishing +aquaculture c) Fishing+ agriculture d) Fishing +Pvt job e) Fishing +Govt. job
5. Experience in fishing
6. Type of family: Nuclear /Joint
7. Annual Income: From a) fishing————— b) Others
8. Details of Possessions of fishing equipments possessed

S.N	Equipment	Number	Year of purchase	Nature of ownership	Initial cost
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9. Social participation

SN Organisation	Past		Present	
	Member	Office bearer	Member	Office bearer

- 1 Fishermen societies
- 2 Banks, Cooperatives
- 3 Credit agencies
- 4 Fishermen associations
- 5 Others

#### 10. Extension agency contact

S.No	Extension agency	Awareness		Frequency of contact		
		Aware	Not aware	Rarely	Often	Sometimes
1	State dept of Fisheries					
2	Scientists					
3	Banks					
4	NGOs					
5	Cooperative societies					
6	Others					

#### 11. Extent of use of various mass media

S.No	Mass media	Extent of use			
		mostly	sometimes	rarely	never
1	Radio				
2	TV				
3	Magazines				
4	Journals				
5	News papers				
6	Audio/video cassetes				
7	Cinema				
8	Street plays/drama				

#### 12. Media preference

S.No	Mass media	Preference		
		most	medium	least
1	Radio			
2	TV			
3	Magazines			
4	Journals			
5	News papers			
6	Audio/video cassetes			
7	Cinema			
8	Street plays/drama			





### 13. Preference for presentation of the content

S.No	Mode	Preference		
		most	medium	least
1	Information in script alone			
2	Information+ illustrations			
3	Information + entertainment			
4	Through Films			
5	Through animation films			
6	Through Street plays			
7	Through Radio talks			
8	Lectures			
9	Workshops			
10	Others (specify)			

### 14. Accessibility to means of communication

S.No	Source	Accessible/Not	Mode of accessibility		
			Own	Neighbor	Club
1	Radio				
2	TV				
3	Magazines				
4	Journals				
5	Newspapers				
6	Audio/video cassettes				
7	Films (Fisheries)				
8	Street plays				
9	Comic books				

### 15. Perceived Source Credibility

S.No	Source	Rank
1	Fisheries dept. officials	
2	Scientists	
3	Input agencies	
4	Money lenders	
5	NGOs	
6	Church	
7	Social activists	
8	Middlemen	
9	Local leaders	
10	Friends	
11	Relatives	
12	Fellow fishermen	

16. Identification of primary information source Have you come across any fisheries information being depicted through any media in the last five years? If yes, please answer the following

S.No	Particulars	remarks
1	Medium	
2	Content of the message	
3	When	
4	Place	
5	Agency who disseminated	
6	Your opinion about the presentation of message	
7	In what way the message was useful	
8	Do you prefer the same mode of presentation	
9	Whether adopted the message	

## Module II

1. Rank the major fisheries- related problems that you face

S.N	Problem	Rank
1	Decrease in catch	
2	Increase in the cost of inputs	
3	Decline in standard of living	
4	Marketing of products	
5	Lack of support from govt.	
6	Lack of education	
7	Conflicts	

2. *Who has the responsibility in Managing fisheries resources?*

- Yourself
- Government
- NGOs
- Community
- Others (specify)

3. *Do you feel that fisheries resources should be conserved?*

*Yes /no Why?*

4. *Do you feel that the availability of fish in the sea has reduced?*

Yes/No





5. A) *How do you say that there is a reduction in catch over years?*  
a) decrease in catch b) change in catch composition  
B) *How do you confirm the reduction in catch*  
a) records maintained b) by experience c) data provided by government

#### **Responsible gear technology**

6. *Do you feel that gear restrictions will be one of the measures towards conserving resources?*  
Yes? No
7. *Which do you feel among these are the advantages of regulating gears?*  
a) To avoid the increasing fishing capacity  
b) To avoid the impact on other critical habitats  
c) To control fishing mortality  
d) Others (specify)
8. *Should there be a standard gear marking procedure?*  
Yes/No

#### **Responsible craft technology**

10. *Do you feel that restriction in craft size will be one of the measures towards conserving resources ?*  
Yes/No
11. Which type of vessels can be used then?
12. Is there a need to reduce the number of fishing units as measures of fisheries management? Yes/No
13. Do you feel that ghost fishing is dangerous to the stock? Yes/No

#### **Responsible Fishing**

14. *Should there be a limit on the time spend on fishing at sea by a fishing unit?*  
Yes/no
15. *Do you feel that fisheries resources can be managed if every vessel to sail in the sea has to be authorized?*  
Yes/No
16. The access to sea should be as to  
a) the prevailing system  
b) An individual or company

c) A vessel

17. *Can Total Allowable Catch (TAC) concept a viable one in your state?*

18. *If no, why?*

19. *Can individual transferable Quota (ITQ) applicable in your state?*

*If yes why? If no, is there any other way?*

20. *Will controlling discards, waste, by catches etc help in managing fisheries resources?*

Yes/no

21. *Do you feel that fishing operations by individuals should be conducted within waters under their jurisdiction?*

If yes, why/

22. *Is there a need to control pollutants from vessels?*

Yes/No

If yes, why, and How do we do that?

23. *Whether the following facilities are available at your landing center*

(Y/N)

a) Safe berthing facility

b) Adequate servicing facility

d) Adequate fresh water supply

e) Sanitation arrangements

f) Waste disposal systems

g) Pollutants control measures

h) Erosion and siltation control measures

24. *Is there a need to establish Artificial Fish Aggregating devices?*

If yes, why?

25. *Is it easy to find out the breeding season of the fish?*

Y/N

Kindly give the breeding season of the following fishes

Fish	Main season	Breeding season	Inferential indicators	Gears used	Mesh size	Ideal mesh size	remarks
Prawn							
Cuttle fish							
Scombroides							
Sardines							
Seer fish							





26. *Is there a need to have safety equipments in vessels when fishing is performed?  
What are the different types of safety equipments that can be used while fishing?  
Which safety equipments you carry in your boat?*

#### **Module IV**

##### **1. Conservation orientation**

(Give your response in the appropriate column)

S.No	Statement	Agree	Disagree
1	Marine fishery resources are infinite		
2	What we lack is new technologies to exploit the marine resources as much as possible		
3	The way to progress is more efforts to catch more fish in all seasons		
4	Banning the catch during breeding seasons help to build up the stock		
5	It is foolish to avoid catch during breeding season		
6	Leaving the gravid fish back to sea is a waste of effort		
7	If the ownership over crafts and gears is fully brought to the fishermen the fishing will become more responsible		
8	Cooperative fishing is difficult to achieve		
9	Night trawling needs to be controlled		
10	The main problem we face is too many boats chasing		

#### **Module V**

##### **Aquatic resources and Coastal environment**

(give your response in the appropriate column)

S.No	Statement	Agree	disagree
1	Over the last few years the total catch has seriously declined (Because of an ever increasing number of fishermen and fishing boats)		
2	Over the last few years ,the variety of fish caught has seriously decreased (because of ever increasing number of fishermen and fisher boats)		
3	Over the last few years ,the size of fish caught has come down seriously (because of ever increasing number of fishermen and fisher boats)		
4	Over the last few years the quality of sea water has seriously deteriorated due to the inflow of		

industrial waste and /or sewage water and house hold waste and/or pollution by ships

- 5 The government has taken adequate steps for the conservation and protection of coastal environment in this region
- 6 Strict regulations should be introduced to regulate the type of fishing gear to be operated on the various fishing grounds

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Rank the items (related to conservation of fisheries resources) given below

S.No	Items	Rank	Can it be imposed as a regulation	At what level it can be imposed
1	Gear restriction			
2	Vessel size restrictions			
3	Restricting the number of vessels operating in a particular area			
4	Restricting the time spent in sea by a fishing unit			
5	Reduction in the engine power			
6	Adopting safety equipments			
7	Establish FADs			

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Film viewing behaviour

1. Do you view films in theaters / TV?
2. What is the frequency of viewing films/
3. You view films a) with family b) alone c) fellow fishers
4. The recent film you have seen
5. Have you seen any film with fisheries as a theme or story background
6. The last fisheries-related film you have seen
7. Among all the fisheries –related films you have seen which one has left a lasting impression? Why/





### **Annexure III**

## **SCRIPT FOR THE VIDEO “COLOURFUL VOICES FOR RESPONSIBLE FISHERIES”**

All Kerala Painting Competition on Responsible Fisheries- 6 Nov. 2002 CMFRI, Kochi Organised under the NATP Funded Project.

“Designing and Validation of Communication Strategies for Responsible Fisheries- A Co-learning Approach.”  
CGP II 2090000011

Production, Direction, Script & Narration  
Dr. C Ramachandran  
Principal Investigator (NATP/CGPII)  
Released by Dr. Mohan Joseph Modayil,  
Director, CMFRI, Kochi.

It was for the first time that an All Kerala painting competition on the theme of Responsible fisheries was being conducted at the Central Marine Fisheries Research Institute, (CMFRI), Kochi. The competition was organized by Dr. C Ramachandran, and his team members as a part of the NATP funded research project Designing and validation of Communication strategies for Responsible fisheries- A Co-learning Approach.

A total of 60 students, representing different fisheries- related educational institutions in Kerala took part in the competition. This included all the Govt. Regional Fisheries Technical Schools, which are schools exclusively for the children of our fisherfolk, Fisheries Vocational Higher Secondary Schools and Fisheries-related colleges.

There was an inaugural function. Dr. Mohan Joseph Modayil, Director of CMFRI, was the chief guest. Dr. C Ramachandran, the principal investigator of the project, welcomed the gathering. About 200 people which included Scientists, Participants accompanying teachers, media persons and staff members of CMFRI.

In the inaugural address Director, CMFRI, underlined the significance of taking up innovative initiatives like this for communicating the ethos of Responsible fisheries among all stakeholders in the fisheries sector and the wider public.

The hall mark of the event was the unique way in which the competition was inaugurated i.e., by creating a participatory painting on the theme of Responsible Fisheries.

Dr. Mohan Joseph Modayil, Director CMFRI, gave the inaugural strokes on this big canvass, which was to be completed by all who attended the function later.

Painting is a visual expression of an idea conceived by the artist. In this highly creative process the first canvass is the mind of an artist. There was palpable anxiety to see what the Director had in his mind, when he wielded the brush in his hand.

Yah..... This seems to be a man..... Could he be a Fisherman?.....But what he is doing ..... He is confronting a big question mark..... Now, it is more clear..... He is fishing indeed.....but What he has fished out, after waiting for a long time, bearing his hunger pangs, was not a fish..... but the skeleton of a fish Which was dead long ago.....

This is the future awaiting our fisherfolk..... Not only fishers but all the stakeholders including us, if we don't stop behaving irresponsibly and irrationally in the way we think and do our fishing activities today.....indeed a superb idea to open a Participatory painting on fisheries..... Now the canvas is open to all..... To put his/her ideas on Responsible Fisheries.....

It was Dr. Srinath, Head Fisheries Resources & Assessment division who took the lead. What he portrayed was the crux of scientific management of capture fisheries any where in the world, how to remain within the MSY curve the magical rubicon of sustainable fisheries, the maximum sustainable yield curve. Dr. Balan, his colleague and Principal Scientist of the same division conveyed the message in a different way. He put it in the form of a formula.

Shrimp, the pink gold, has a pride of place among the marine resources of the country. Dr. E.V. Radhakrishnan, Head, Crustacean fisheries division, painted a symbolic shrimp\_\_\_ an icon not only of unbridled prosperity but also of avoidable disasters especially in the recent times.

The policy makers/scientists should carry the slogan of Responsible Fisheries on his shoulders. This was depicted by Dr. Jayaprakash.

Another victim of irresponsible fishing is the consumer. Dr. Ashaletha, Scientist, SEETT Division expressed the concern through this hungry cat meddling with the skeleton of the fish which the fisherman has caught. Mr. Vijayan, our field man was concerned about the plight of artisanal fishermen..... There was enthusiasm among the participants to fill the canvass.

The competition started at 11 am. The college students had no problem in understanding the theme. But it was to be explained to our younger participants from Fisheries Technical Schools.







The competition was held under three categories. 1) Govt Regional Technical schools, 2) Vocational Higher Secondary (Fisheries) schools 3) Fisheries related-colleges.

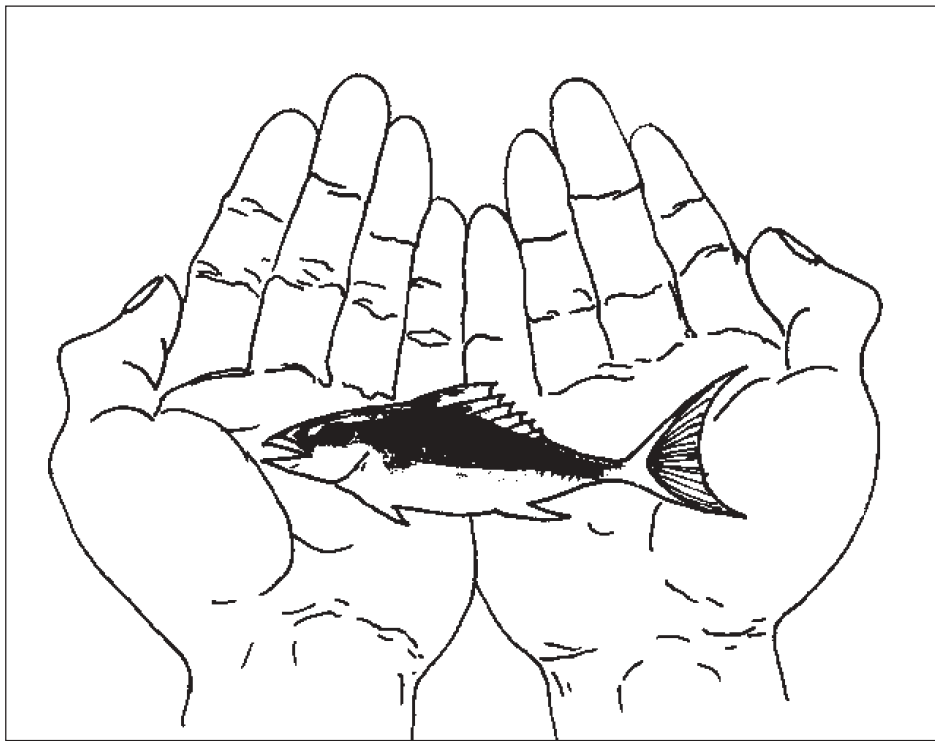
The total time allocated for the painting competition was 2 hours. Once the pencil sketches were done, they started applying colour. Now they are ready with their creations..... Same theme ..... but different shades of imaginations ... different tones of perspective..... On where we could go wrong in our activities and make our fisheries unsustainable. It could be the effects of industrial pollution..... It could be the result of using destructive/improper gears.

This painting by Mr. Pushparaj, CC of VHSC, Baypore where the northern most fishing harbour of the State is located, attracted the attention of everyone. It was beautiful, and exceptional, in expressing symbolically the concern for affirmative action for resource regeneration.....He conveyed this idea by depicting two children releasing young fishes to the sea.....

Dr. R. Sathiadhas, Head, SEETT Division felicitated the young participants. All the participants were given certificates of participation. Certificates were distributed by Dr. Sheela Immanuel, Scientist of CMFRI. A few participants came forward to express their feelings. Altogether it was a different experience. Dr. S. Ashaletha, Scientist, SEETT Division proposed a vote of thanks.

All the participants now came together with their creations in their hands, taking a silent and solemn pledge to put their best efforts to be the ambassadors of the message of Responsible Fisheries.....

Let's do our best  
to make our fisheries  
sustainable so that we  
achieve 'Fish For All-For Ever'



*Dr. C. Ramchandran is a Scientist (Agricultural Extension) in the Agricultural Research Service (ARS) under the Indian Council of Agricultural Research (ICAR). Currently he is working in Central Marine Fisheries Research Institute (CMFRI), Kochi. He obtained his PhD from Indian Agricultural Research Institute (IARI), New Delhi, after completing his BSc (Ag) and MSc (Ag) from Kerala Agricultural University (KAU). He participated in the International Training Programme on 'Alternative Approaches to Fisheries Management' held at International Agricultural Centre (IAC), Wageningen, the Netherlands in 2003 under the Netherlands Fellowship Programme (NFP). E-mail : ramchandran2@hotmail.com*

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