

A Value Chain on Fish Production in Fragile Agricultural Lands and Unutilized Aquatic Resources in Maharashtra

Environmental and Social Safeguards Management in NAIP

A .Basic Information

1. Project Statistics:

Component code	:	2
Name of Consortium Leader	:	Dr. Dilip Kumar
Name of the CPI	:	Dr. A. K. Reddy
Institution	:	Central Institute of Fisheries Education (CIFE) Fisheries University Road Seven Bungalows, Versova, Mumbai – 400 061 Telephone No: 022- 26361446/ 7/ 8 Ext 208 Fax No. 022- 26361573 e-mail: akreddy_cife@yahoo.co.in
Consortium partners	:	(1) College of Fisheries (Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth) Shirgaon, Dist. Ratnagiri (2) Vatsalya Mandir (NGO), Lanja, Dist. Ratnagiri
2. Date of start	:	14 August 2008
3. Planned duration	:	4 years
4. Project cost	:	Rs. 385.104 lakhs

5. Project Objectives

- To enhance the productivity of degraded and under utilized agro-aquatic resources through regenerative and eco-friendly aquaculture practices.
- To develop the capacity of target communities in sustainable use of fragile and unutilized/underutilized aquatic resources and untapped niches for their socio-economic upliftment.

- To create and strengthen PCS value chain through diverse aquaculture systems, market-driven product development, value addition and entrepreneurship development.

6. Project description

The sub-project consist of 3 components with different objectives and activities aimed at utilization of salt affected areas and underutilized open water bodies for aquaculture purpose to produce carps, prawns, and Spirulina to enhance farm productivity, generate income and employment, promote fish as health food and meet nutritional security.

The first objective aims to develop site specific aquaculture technologies and establish result demonstration units for capacity building and entrepreneurship development in the salt affected sugarcane fields of Western Maharashtra district i.e. Satara. Identification for suitable sites, monitoring of environmental parameters, establishment of hatchery for quality fish seed production and promotion of cluster approach based aqua farms with community participation will form the basis of this component.

The second objective aims at development of skill, technical knowledge and attitude of the target communities for the entrepreneurship development to find alternative livelihood. Appropriate aquaculture technologies will be disseminated through FAO formulated trickle down system (TDS) for the development of salt affected soil and fisheries co-management approach for the development of culture based capture fisheries in open water bodies to enhance productivity.

The third objective aims to establish the consumption pattern of fish and fish products, understand the market and ultimately develop and distribute suitable products through cold chain. Village resource centers will be established to provide market intelligence and other production related information. Entrepreneurship development programmes will be implemented to generate employment under this component.

7. Environmental category issues in the subproject:

- **Social**
- **Environmental**

8. Safeguard policies triggered (World Bank policies)

Safeguard policies triggered	Yes	No
Environmental Assessment (OP/BP 4.01)	X	
Natural Habitats (OP/BP 4.04)		
Forests (OP/BP 4.36)		
Pest Management (OP 4.09)		
Indigenous Peoples (OD 4.20)		
Involuntary Resettlement (OP/BP 4.12)		
Safety of Dams (OP/BP 4.37)		
Projects on International Waterways (OP/BP 7.50)		
Projects in Disputed Areas (OP/BP 7.60)		

B. Risk related issues (not covered under 3 above but perceived to be important in the project):

- Acceptance and adoption of aquaculture practices may take considerable amount of time to happen
- As the aqua products are highly perishable commodities, marketing for the fresh and processed fish products may be difficult to attain the requisite quality standards
- Conflicts may arise due to differences in land and water use pattern
- Large scale conversion of land into aquaculture ponds may result in reduction of traditional agricultural crops

9. Impact Assessment

Proper care has been taken for implementation of environmental and social safe guards. The details are given in Annexure – A & B.

10. Potential indirect and / or long term Impacts due to anticipated future activities in the project areas (Assessment of anticipated conflict/ complimentary with likely anticipated activities current as well as proposed in the next five years in the area of activities of subproject):

- Nutritional security of the target population would be provided through higher consumption of protein rich aqua products
- Creation of both domestic and export market will help the farmers to get maximum price for their products
- Employment generation through various entrepreneurial activities will minimize the exodus of rural population to nearby towns and cities
- The package of technology practices developed in this sub-project will help in conversion of large extent of saline soil for aquaculture.

11. Identify the key stakeholders and describe mechanisms for consultation/disclosures so far done including pre-project consultations with stake holders workshop before formulating the full proposal, discussing the full proposal with some stakeholders before submission to the PIU:

Public Institutes:

- (i) **Central Institute of Fisheries Education**, Mumbai
- (ii) **College of Fisheries** (Dr. BSKKV, Dapoli), Dist. Ratnagiri
- (iii) **Agriculture Research Station** (MPKV, Rahuri) Digraj, Dist. Sangli

NGOs:

- (iv) **Vatsalya Mandir** (NGO), Lanja, Dist. Ratnagiri
- (v) **Krishi Vigyan Kendra**, (Kalyani Gorakshan Kendra Trust, NGO), Karad, Dist. Satara.
- (vi) **Verala Development Society** (NGO), Dist. Sangli.

The communities were consistently consulted by the project personals through site visits while preparing the concept note and full project proposal. Social interactions were conducted with local communities, including farmers, fishermen, women, and local business men to discuss the modalities of the project, the nature of activities envisaged, the selection of the demonstration sites, and the aquaculture production activities that the project could support.

12. Chronology of the meetings / activities held in connection with preparation of the concept note and full proposal

Sl no	Date and location	Programme	Participants	Remarks
1.	4-6/4/2007	Identification of problem in salt affected areas, Sangli	CIFE, DoF officials	To see the salt affected sites
2.	7-8/6/2007	Preliminary survey of salt affected areas in Satara Discussion with Officials of Fisheries department and KVK Karad.	CIFE, Fisheries Dept, and KVK, Karad	To gather primary information
3.	8-9/8/2007	Preliminary survey of salt affected areas in Sangli and discussion with official and local stakeholders	CIFE, Verala Development Society (VDS), Agriculture Research station (MPKV), Digraj and Fisheries Dept, Sangli	
4.	10-11/9/2007	Preliminary survey of salt affected areas in Kolhapur Discussion with Fisheries department, Kolhapur	CIFE, Fisheries Dept, Kolhapur	

5.	8/10/2007	Concept note development	CIFE, CoF, VM	
6.	10/10/2007	Concept note development	CIFE, CoF, VM	
7.	8/1/2008	Discussion on methodologies and technical programme	CIFE, CoF, VM	
8.	11/1/2008	Follow up meeting with partners to formulate activities for the full proposal at CIFE, Mumbai	CIFE, CoF, VM	Discussion on the action plan for the development of full proposal
9.	26/1/2008	Identification of open water bodies in Ratnagiri and Sindhudurg for enhancement	CIFE, CoF, VM	
10	27/1/2008	Identification of potential sites in Kolhapur and Sangli for aquaculture development	CIFE, CoF, VM, VDS, ARS, Digraj, Sangli	
11	28/1/2008	Identification of potential sites in Satara and Pune for aquaculture	CIFE, CoF, VM, KVK, Baramati	
12	8-10 /2/2008	Consultations on project action plan	CIFE, CoF	
13	12-13/2/2008	Revision of full proposal	CIFE, VM	
14	3/3/2008	Discussion on Preparation of presentation	CIFE, CoF, VM	Finalization of presentation contents
15	15-17/3/2008	Discussion on revision of full proposal as per TAG-II suggestions	CIFE, CoF, VM	
16	22-24/3/2008	Revision of full proposal	CIFE, CoF, VM	
17	16-18/4/2008	Discussion on revision of full proposal as per TAG-II suggestions and to submit to Dr. S. D. Tripathi, member TAG-II	CIFE, CoF, VM	
18	22-23/4/2008	To receive proposal as per Dr. S.D. Tripathi's suggestions	CIFE, VM	
19	9-11/4/2008	Discussion on revision of full proposal as RPC and cost committee suggestions	CIFE, VM	

13. Measures to Address the Issues

Regular training and orientation programmes will be organized to the participating farmers

and members of the community to create awareness about the forecasted risk factors. Eco-friendly best management practices will be demonstrated through participation of farmers and community in the development of aquaculture and open water resources. Conflicts in use of open water resources and problems arising in cluster based aquaculture approach will be resolved through collective decision making through participatory approach. To this effect agreements are prepared and signed by all the participating farmers. The waste from processing units/markets will be collected regularly and will be used as manure or as an animal feed ingredient including fish feed. Packing interventions will be addressed through utilization of biodegradable packing materials as far as possible to take care of environmental safeguards.

14. Consultation / disclosure in future

The consultations/ disclosures will be done as per the guidelines of NAIP (ICAR) regarding the progress, outcomes of the project. Awareness programmes, training programmes and workshop about aquaculture practices, productivity enhancement of open water bodies, value addition through product development, marketing etc will be conducted. The regular monitoring activities will also include a mechanism to collect the feedback from the participating communities and it form the basis for further improvement/improvisation in project implementation process.

The following disclosures will be made

1. Transfer of proven aquaculture technologies through Trickle Down System (TDS) of aquaculture extension.
2. Fisheries enhancement in open water through community participated co-management approach.
3. Demonstration of farming practices, harvesting and post harvesting practices.
4. Transfer of technology of value added fish products and marketing channel.
5. Dissemination of information and sensitization of line departments for replication of the successful models.

Consortium PI

National Coordinator

National Director

Annexure- A

Environmental Safeguard : Activities, issues, impact and mitigation measures

Activities ¹	Issues ²	Anticipated level of Impacts ³		Mitigation Measures (Negative Impact) ⁴
		Positive	Negative	
Culture of finfish, shellfish and <i>Spirulina</i> in newly constructed ponds on salt affected sugarcane fields	Utilization of <i>barn</i> land for fish production	5		
	Positive effect on use of salt affected land	5		
	Improvement in soil and water quality	4		
	Reduced use of chemical fertilizers	5		
	Use more organic manures	4		
Farmers' organization for collective management of farm inputs and outputs	Formation of self help groups (SHGs) and Cooperative Societies for collective action.	4		
Production of quality fish seed	Production of quality fish seed through selective breeding	4		
Enhancement of open water fisheries through community participatory management	Use of unutilized aquatic resources for fish production	4		
	Production of quality fingerlings in the vicinity of reservoirs			
	Floral diversity	3		
	Faunal diversity	4		
Transport and processing of produce	Quality fish for marketing	4		
Fine-tune technologies for development of fish and fish products				
Packaging and marketing	Packing material disposal		2	As far as possible usage of biodegradable package material will be ensured
Establishment of live fish sale counters	Handling and transportation of live fish	4		
	Display and maintenance of live fish in the markets			
Processing of aquaculture and fishery produce	Ready to eat fish products made available	4		
	Implementation of food safety measures	4		
	Networking with existing cold storages	3		
	Disposal of processing waste		1	Recovery of waste as manure and animal feed ingredient
Sensitizing line departments of governments for enhancing fish consumption	Nutritional security is in place	4		
Entrepreneurship development of stakeholders for intensive cultivation, product development, mechanization	Promotion in use of salt affected soils for aquaculture, promotion of fish as healthy food and market promotion for fish and fish products	4		
Value-addition through branding of fish as health foods by training and popularization	Health brand promotion in place	4		

Annexure-B

Social Safeguard : Activities, issues, impact and mitigation measures

Activities ¹	Issues ²	Anticipated level of Impacts ³		Mitigation Measures (Negative Impact) ⁴
		Positive	Negative	
Base line survey	Availability of accurate benchmark information		2	Participatory approaches for data collection will be carried out
Culture of finfish, shellfish and <i>Spirulina</i> in newly constructed ponds on salt affected sugarcane fields	Change in occupational patterns	4		
	Selection of clusters – social conflicts		3	Collective decision making through participatory approach
	Increased income and livelihood security	5		
	Nutritional security	3		
Farmers' organization for collective management of farm inputs and outputs	Optimum use of resources	4		
	Maximization of profit	4		
Production of quality seed	Hike in farm income	4		
Enhancement of open water fisheries through community participatory management	Income generation and livelihood development	4		
	Conflicts in use of resources		2	Resolving with community participation
Buyback assurance	Market assurance in place	5		
Transport and processing of produce	Employment generation	4		
Live fish marketing	Profit enhancement	4		
Development of convenient and ready to eat fish products	Gender issue- Women's time is saved due to avoid drudgery in preparation	4		
Packaging and marketing of aquaculture and fishery produce	Employment generation through ancillary activities	3		
Product(s) for wide- spread markets & niche markets	Clear market segmentation different products	3		
Assessment of nutrient composition in ready to eat fish products	Market for fish food products due to increased consumer awareness on nutritional composition	4		
Identification of number of potential food products for wide ranging and niche markets through market survey	Potential fish products identified for potential markets	4		
Pricing of the developed food products	Increased profits	3		
Sensitizing line departments of governments for enhancing fish consumption	Nutritional security can be achieved	2		
Entrepreneurship development of stakeholders for intensive cultivation, product development, mechanization	Hike in income	3		
Value-addition through branding of fish as health foods by	Health and nutrition is linked with fish products	4		

training and popularization				
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