

Title: Strategies for Sustainable Management of Degraded Coastal Land and Water for Enhancing Livelihood Security of Farming Communities (Proponent: CSSRI, RRS, Canning town)

Template for Environmental and Social Safeguards Management

No. of consortium partners: 5

- Central Soil Salinity Research Institute, Regional Research Station (CSSRI, RRS), Canning Town, West Bengal, PIN-743 329 – Lead Centre
- Ramkrishna Ashram Krishi Vigyan Kendra (RAKVK), Nimpith, West Bengal (Under Ramakrishna Ashram, funded by ICAR),
- Central Institute of Brackishwater Aquaculture, Kakdwip Research Centre (CIBA, KRC), West Bengal,
- Central Agricultural Research Institute(CARI), Port Blair, A& N Islands,
- Bidhan Chandra Krishi Viswavidyalaya (BCKV), Mohanpur, West Bengal,

No. of States/UT covered: Two (West Bengal and Andaman & Nicobar island)

No. of Districts covered : 4 (2 in West Bengal and 2 in Andaman & Nicobar island)

Number of beneficiary farmers: 3700

Duration: 4 Years (2008-09 to 2011-12)

Budget: Rs. 1063.503 lakhs

Project Objectives:

- Sustainable enhancement of the productivity of degraded land and water resources of the coastal region through integrated approaches
- Enhancement of livelihood security and employment generation for the poor farming communities of the coastal region
- Empowerment through capacity building and skill development of stakeholders including men and women farmers.

Brief Project Description:

This is a multi-disciplinary project in consortium mode with primary objectives of increasing productivity of degraded soil and water of low productive and disadvantaged coastal region for sustainable enhancement of the livelihood security of poor rural communities of the area. The project activities will be implemented in the backward coastal Sundarban region (South 24 Parganas and North 24 Parganas districts of West Bengal) and Andaman Islands (North & Middle Andaman and South Andaman districts). The project objectives will be achieved through multi-disciplinary technologies applied in integrated approach.

Major technological interventions proposed

1. Land shaping for improving drainage facility, rainwater harvesting and enhancing productivity of low lying degraded land including Tsunami affected land
2. Cultivation of multiple and diversified crops including horticultural crops and their improved varieties for degraded saline and Tsunami affected lands

3. Integrated cultivation of crops and fishes (freshwater and brackishwater fishes)
4. Promotion of composting including vermi-composting, green manuring, INM, etc. for enhancing productivity of agriculture and aquaculture
5. Introduction of low cost farm machineries for drudgery reduction and economic farm operations
6. Introduction and improvement in livestock/ poultry including nutrition and disease management
7. Introduction of mushroom cultivation and bee-keeping
8. Establishment of rural technology centers in villages at the project sites
9. Skill and capacity building of farmers and other stakeholders

B. Environmental Category: B

2. Major issues in the subproject:

Social: Major social issues likely to arise on implementation of the projects are –

- 1) Inclusion of poor and disadvantaged groups
- 2) The capacity of farmers to adapt and sustain the productivity gains
- 3) Demonstration of economic benefits of the interventions

Environmental: Major environmental issues likely to arise on implementation of the projects are –

1. Protection of local biodiversity resources
2. Impact of use of agro chemicals on environment

3.Safeguard Policies Triggered (World Bank Policies)

Safeguard Policies Triggered (World Bank Policies)		
	Yes	No
Environmental Assessment (OP/BP 4.01)	[X]	[]
Natural Habitats (OP/BP 4.04)	[]	[X]
Pest Management (OP 4.09)	[X]	[]
Cultural Property (draft OP 4.11-OPN 11.03 -)	[]	[X]
Involuntary Resettlement (OP/BP 4.12)	[]	[X]
Indigenous Peoples (OP_4.10)	[X]	[]
Forests (OP/BP 4.36)	[]	[X]
Safety of Dams (OP/BP 4.37)	[]	[X]
Projects in Disputed Areas (OP/BP 7.60)	[]	[X]
Projects on International Waterways (OP/BP 7.50)	[]	[X]

- No involuntary resettlement is expected as The area of individual sites is very small and all proposed interventions are within farmers boundaries.

(Measures to address these issues is given in 8(a)

4. Risk related Issues (not covered under 3 above but perceived to be important in the sub-project):

In addition to the issues covered in the table above, the issue of interface with the communities is also important to the subproject. Measures to address this issue is given in 8(b)

5. Impact Assessment (Enclosures- I and II):

I. The project will mostly have positive impacts, as it will increase the productivity of degraded and low productive soil and water of coastal region.

II. The total productivity in terms of agricultural crops, fishes and animal products of the area will increase. It will generate high employment opportunities of the rural poor and will enhance their livelihood security. The total production of agriculture and allied commodities of the country, as a whole will increase. The project will also facilitate the income and employment generation for women farmers and will reduce their drudgery. The capacity building of the farmers and other stakeholders will further increase the livelihood security of the rural people and productivity of the region/ country as a whole.

6. Potential indirect and / or long-term Impacts due to anticipated future activities in the project areas (assessment of anticipated conflict / complimentarily with the current as well as those proposed for the next five years) in the areas of activities of the sub-Project):

Besides the direct impact the project will have indirect impact on the socio-economic upliftment of the rural poor which in turn will increase the educational and technological knowledge improvement of the distressed rural people of the most disadvantaged areas. The different Goshthis/ associations of the farmers created for implementation of the project will be in the long term helpful for the development of the whole village/ region. The environment and soil health of the area will be better conserved which in the long run will increase the agricultural productivity as whole and maintain the ecological balance.

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

Farmers, Pachayat Raj Institutions, Research Institutes, Govt. Departments, SAU, different Govt. and Non-Govt. organizations, Farmers Goshthis, voluntary organizations etc. who are engaged in improving rural livelihood are the key stakeholders for this project. Several rounds of discussion, exchange visits, field visits, group discussions were organized during the project formulation. After launching the project, the interaction meeting of the workshop involving all the stakeholders, allied departments, and banks will be organized in each cluster. At each cluster level possible interactions were carried out involving all the stakeholders including men and women farmers to identify issues to be addressed and relevant interventions to be undertaken.

8 Measures to address issues

The subproject designed includes following measures

- i. **Environment**- The very purpose of the sub project is to sustainably improve the degraded environment existing in coastal lands.. The screening of environmental issues has been done to include possible impacts and appropriate mitigation measures are proposed (enclosure I)
- ii. **Pest management** – Encouraging the use of Integrated pest management practices will discourage the use of chemical pesticides. This will provide advantage of environment and health security to the farmers. Field demonstrations and training of farmers on IPM and INM are integral part of the subproject.
- iii. **Indigenous people**

The tribal population in the project area is less than 4 %. The majority of the tribal people in the area are land less/ marginal farmers having very poor livelihood and educational status. In the tribal families the women are more active while men are relatively lazy. In the implementation of the project priority will be given for landless and marginal tribal farmers. The interventions like, livestock management, fish cultivation, mushroom cultivation, bee keeping, nursery raising, diversification of farming, capacity building, etc. will be more suitable for tribal farmers

The proposed interventions are either through augmenting or making adjustments in the livelihood system of the indigenous people without causing any major changes in their way of life. It will only improve their income, nutrition and livelihood security. However, planned efforts would be made to ensure that tribals are included and derive full benefit from the projects intervention.

8(b)

- i. **Interface with the communities**

The selection of beneficiaries will be made through involvement of local institutions and communities; preference will be given to a willing partner. The selection of the families would have proportionate representation from the following groups:

- a. Small, marginal and landless farmers
- b. Women
- c. SC and ST group

Subproject implementation plan would be prepared and agreed with the communities and displayed. Participatory approach and transparency in the implementation would be maintained.

Gender issues would be adequately addressed

9. **Consultation / disclosures to be done in future: Local disclosure through mechanisms such as launch workshop, interfaces during the implementation stage of the sub-project for sharing the results and soliciting feedback, circulating project brochures and implementation progress from time to time, putting up annual reports on the web site and annual stakeholder workshops wherever feasible**

Preliminary discussion has been made with the beneficiaries in the target sites of the project. Situation analysis has been made in the project sites and found favourable for implementation of the project. However, every means of formal and non-formal local communications will be made during the implementation of the project. Group meetings, workshops, inter and intra-cluster meetings of the farmers and all other stakeholders will be organized for sharing the experiences and exchange of views for successful implementation of the project in participatory mode. In addition websites, popular articles in electronic and print media will also be made use of.

Consortia PI

National Coordinator

National Director

Enclosure I

A: Environmental Safeguard: Activities, Issues, Impact and Mitigation Measures

Table 1: Environmental Safeguard: Activities, Issues, Impact and mitigation measures

Activities	Issues	Anticipated level of Impacts		Mitigation measures
		Positive	(Negative)	(Negative Impact) ⁴
Sustainable enhancement of the productivity of degraded land	Reduced soil erosion and improved drainage through land shaping, salinity of Sunderban and A&N which has become saline because of ingress of sea water due to Tsunami will also improved by land shaping.	(4)		
	Reduction of land for crop cultivation due to land shaping and water harvesting structures		(1)	Through rain water harvesting the reduced land will be alternatively used for pisciculture and will be instrumental for improving the quality of degraded soil and water. The total productivity will also be enhanced. According to some case studies published under the title “ Best practices in water management- case studies from rural India” reported by German Agro Action in the year 2005 for the coastal region of Sunderbans in West Bengal the income of farmers increased to the extent of 12-15 times over conventional farming due to adoption of land shaping technology.
	Improved water quality due to rainwater harvesting and improved ground water recharge	(4)		
	Effect of land shaping on carrying capacity of land due to displacement of more fertile top soil		(1)	The topsoil may be reinstated by keeping it aside while making the land shaping, wherever necessary. Testing of soil from different horizons will be made before land shaping. Suitable fertility management practices will undertaken to improve the fertility of top soil.
Enhancement of livelihood security and employment generation for the poor farming communities of the coastal region	Effect of change in cropping pattern on soil health due to Introduction of HYV, crop diversification		(1)	Scientific and balanced use of fertilizer and pesticides, Use of INM and IPM practices. Field demonstration and farmers training on INM & IPM are an integral part of the sub project
	Stress on water due to change in cropping pattern		(1)	Rain water harvesting will ensure creation of good quality of water and will also provide water for supplemental irrigation.
	Loss of local landraces		(1)	Ex-situ conservation through NBPGR and other related organizations
	Less spread of animal diseases	(3)		

	in the area and less animal borne human diseases through health care and improved feed of livestock			
--	---	--	--	--

Enclosure II

B. Social Safeguard : Activities, Issues, Impact and mitigation Measures

Table 2: Social Safeguards: Activities, Issues, Impact and mitigation measures

Activities ¹	Issues ²	Anticipated level of Impacts ³		Mitigation Measures (Negative Impact) ⁴
		Positive	Negative	
Sustainable enhancement of the productivity of degraded land	Improvement in productivity of degraded coastal land through land shaping, creating water harvesting structures, proper land management etc	(4)		
	Economics of land shaping due to cost of operation and also loss of arable land into low lying area		(1)	The profitability of growing crops to cover the opportunity cost including initial investment would be ensured through selection of high value and low water requiring crops.
Enhancement of livelihood security and employment generation for the poor farming communities of the coastal region	Enhanced income due to introduction of HYV, crop diversification, fish farming both in fresh water and brackish water, paddy cum fish culture, improved health care and feed of livestock mushroom cultivation and bee keeping	(4)		
	Increased employment and reduced out migration all round the year due to above interventions	(4)		
	Improvement in food and nutritional security due to increased availability of grain, vegetables, fish etc.	(4)		
	Drudgery reduction due to introduction of farm machines	(3)		
Empowerment through capacity building and skill development of stakeholders including men and women farmers.	Enhanced skill for adoption of different interventions through different training programmes, exposure visits etc, information dissemination through establishment of rural technology centers	(4)		
	Reduced role of middle men, contractors through formation of SHG/CIG/SHG Federation	(4)		
	Gender empowerment through involvement of women in different committees, formation of women SHGs	(4)		
	Social conflicts among different members		(1)	All the interventions to be decided and implemented in participatory mode through involvement of village level committees, panchayati raj members

