**Livelihood and Nutritional Security of Tribal Dominated Areas through Integrated Farming System and Technology (Proponent: MPUAT, Udaipur)**

## Environmental & Social Management Framework (E&SMF)

| | | |
|---|---|---|
| No. of Consortium Partners | : | 8 (MPUAT, CIFE, IARI,BAIF, IFFDC, VBKVK, PEDO & ACCESS) |
| No. of States/UT covered | : | One (Rajasthan) |
| No. of Districts covered | : | Four (Banswara, Dungarpur, Sirohi & Udaipur) |
| Number of beneficiary farmers: | | 13201 |
| Duration | : | Years (2007-2012) |
| Budget | : | Rs. 1884.34 lakhs |
| **Environmental Category** | **:** | **B** |

**Project Objectives**: Project objective is ensuring livelihood & nutritional security in tribal dominated areas through technology led integrated farming systems approach & technological empowerment of farmers and farm women.

The specific objectives of the sub-project are:

1. Increasing income and nutrition through adoption of economically viable integrated farming system models and technologies.
2. Capacity building for livelihood security through entrepreneurship development and knowledge empowerment.
3. Integrated nutrient and water management.
4. Organizing farmers' clusters into Farmers Business Centers with self help principles under a Producer Marketing Company.

**A.3. Project Description** - As per project proposal document.

**A.4. Project Location and salient physical characteristics relevant to the safeguard analysis**: The project is being implemented through Directorate of Extension Education and its KVK's; and Consortia Partners, with a focus on development of successful IFS models under different agro-climatic situation, development of integrated approach for diversification and enhancing support for value chain establishment, livelihood improvements and assessment of horticulture and livestock based IFS models for enhanced livelihoods.

Banswara, Dungarpur, Udaipur and Sirohi districts of Rajasthan are selected for project implementations which are pre-dominantly tribal dominated population whose agriculture is still at subsistence level. The clusters chosen have high tribal population (70 to 90%). In designing the project proposal, care has been taken to cover the entire population in the cluster. The clusters have been chosen in the district based on criteria's namely productivity, agro-climatic situation, economic situation, infrastructure and responsiveness of the targeted population based on the assessment by the Consortia Partners. Care has been taken to ensure that each cluster represents different micro-farming situations, which could be replicable after successful demonstration of the present model. The operational sites are located in contiguous villages in each district to have focused approach for productivity enhancement. Technologies chosen are relevant to the area which would promote sustainability of agriculture in the region.

**Major technological interventions**

1. Establishment of orchards.
2. Cultivation of vegetables.
3. Introduction of nutri-gardens.
4. Livestock productivity enhancement through A.I and natural breeding.
5. Introduction of Backyard Poultry (Nirbheek).
6. Fodder improvement programme, construction of mangers, chaffing of fodder, feeding of mineral mixture.
7. Processing, value addition and post harvest management of fruits, vegetables and milk.
8. Crop productivity enhancement through increased Seed Replacement Rate (SRR) of major crops, quality seeds and new technology adoption.
9. Fish production enhancement and processing in Banswara district.
10. Seed village, seed processing and seed self sufficiency.
11. Organization of skill oriented training programmes for rural youth for entrepreneurship development.
12. Capacity building of farming community in adoption of knowledge based practices.
13. Composting and vermicomposting, Promotion of bio-fertilizers (PSB, Azotobacter, Rhizobium).
14. Installation of pipe lines on farmers field, Drip irrigation and Jalkunds
15. Formation of SHG's of women groups, Farmer Business Groups and Formation of the Producer Marketing Company

## 2. Major issues in the sub project

**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

| **Safeguard Policies Triggered** | Yes | No |
|---|---|---|
| Environmental Assessment (OP/BP 4.01) | [X] | [ ] |
| Natural Habitats (OP/BP 4.04) | [ ] | [ ] |
| 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 (OD 4.20) | [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] |

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

## 4. Risk related issues

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 are given in 8 (b).

## 5. Impact Assessment **(Enclosures –I and II)**

1. The project will have positive impacts, as it will increase the productivity of low productive soil. Further, establishment of orchards have positive impact of environment.

2. The total productivity in terms of agricultural crops, vegetables, fruits, fishes and animal products of the tribal dominated areas of Rajasthan will increase. It will generate additional employment opportunities in rural areas and will enhance livelihood security. The project will also raise the income of farm families and employment generation. Farm implements will also reduce drudgery in agriculture. Nutri-garden intervention

improves the health of tribal families. The capacity building of farmers and stake holders will further improve the livelihood security of the farmers and productivity of the region and 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**.

| S. No. | Future Activities | Indirect / Long Terms impacts |
|---|---|---|
| 1 | Increase in seed replacement rate | Wider coverage and increase in seed replacement by high yielding varieties/hybrids. Increased productivity, profitability and income. |
| 2 | Spread of horticulture and livestock based integrated farming system and technology models. | Diversification, livestock improvement, horticulture promotion, water harvesting strategies with increasing cropping intensity. Increased productivity, income and nutritional improvement. |
| 3 | Capacity building of farmers through entrepreneurship development and knowledge empowerment | Entrepreneurship and vocational skills development and knowledge empowerment, Economic empowerment and generation of off farm employment |
| 4 | Integrated Nutrient and Water Management | Sustainability of the farming system through integrated nutrient and water management. Improved natural resource base (improvement in water table, soil fertility enhancement, etc.) |
| 5 | Increase in post harvest management, agro-processing, value addition, packaging | Triggering growth in production of marketable commodity, increase in economic viability. Loss prevention and employment generation. |
| 6 | Organizing farmers' into Farmers Business Centres and Producer Marketing Company | Greater access to larger market with bargaining for better input and price. Establishment of Small Producers Agri-business Resources Centre (SPARCs). Women participation in value chain. |

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

| Key stake holders | Mechanisms for consultation |
|---|---|
| Farming community of the project | Interaction with farming community in village meetings, meeting with local leaders and extension field functionaries. |
| Development Departments | Interaction with senior officers of the Development Departments. |
| NGO's | Interaction workshop for reputed NGO's working in the identified districts. |
| Peoples representatives | Annual review workshop. |
| R&D Institutions | Consortium Monitoring Unit (CMU) and across the clusters and across the districts Consortium Implementation Committee (CIC) meetings. |
| Industries | Meetings with Udaipur Chamber of Commerce & Industries (UCCI) officials. |
| Commodity Boards | Meeting with Chairman & Secretaries of Cooperative Marketing Boards. |

**8. Measures to addressed issues**

8. (a) The subproject designed includes following measures -

1. **Environment:** The screening of environmental issues has been done to include possible impacts and appropriate mitigation measures are employed (Enclosure I)
2. **Pest management –** Encouraging the use of integrated pest management practices. Banned pesticides are not to be used. Field demonstration and farmers training on IPM are an integral part of the sub project.
3. **Indigenous people-** The tribal population in the clusters chosen for the project is ranged from 70-90 per cent. The majority of the tribal people in the operational area are marginal and small farmers having very poor livelihood. The main constraints in the project area are poverty, less opportunity of on and off farm employment, poor knowledge about technologies, low literacy rate, poor health & hygiene, indebtness, migration, etc. In the implementation of the project activities priority will be given for marginal and small farmers. The interventions like seed replacement, vegetable cultivation, orchard establishment, nutri-gardens, enhancement of livestock productivity, backyard poultry, capacity buildings, FBG's, SHG's, etc. will be more suitable for tribal households.

The proposed sub-project interventions are not likely to adversely affect livelihood of tribal. However planned efforts have made to ensure that all tribal

families residing in the project area are included and derive full benefit from the projects intervention.

**8 (b) Interface with communities:** All the families in the adopted villages will be benefited in the project period to avoid social disparity. Local institutions like Gram Panchayat, Cooperatives institutions etc. will be involved. A mechanism of village level committee and cluster level committee will be made. Members of village level committees will be involved at the time of input distribution.

Sub-project plan would be prepared and agreed with the communities and displayed at Rural Technology Centers. Participatory approach and transparency in the implementation would be maintained.

Gender issues would be adequately addressed.

**9. Consultations /disclosure to be done in future –**

- Launch workshops.
- Sensitization workshops.
- Interface during implementation with stakeholder.
- Brochures, pamphlets, reports and articles for awareness and technological empowerment.
- Press publicity, electronic media and webpage.
- Annual review workshops**.**

**Consortium PI** **National Coordinator** **National Director**

**Enclosure-I**

**Environmental Safeguards: Activities, Issues, Impacts and Mitigation Measures**

| Activities | Issues | Anticipated Level of Impacts | | Mitigation Measures (Negative Impact) |
|---|---|---|---|---|
| | | Positive | Negative | |
| Use of high yielding varieties of crops, Increasing Cropping intensity | Enhanced food security | 3 | | |
| | Loss of soil nutrients | | 1 | Measures like INM along with composting & vermin-composting employed for balance approach, Field demonstrations and farmers training on INM are an integral part of the sub project |
| | Stress on water | | 1 | Water harvesting and efficient use water through irrigation pipes. |
| | Pest Incidence | | 1 | Pest susceptible varieties be avoided, IPM particularly using locally available material and farmers training on IPM are an integral part of the sub projects. |
| | Loss of biodiversity | | 1 | Addition of potential land races in the cropping pattern. |
| Introduction of horticultural crops | Enhanced nutritional security | 4 | | |
| | Loss of area under field crops | | 1 | Loss of area under field crops would be compensated by enhanced productivity and income; and intercrops in orchards. |
| | Stress on water | | 1 | Water harvesting and efficient use of water through micro irrigation, pipes, RCT like bed planting, etc. |
| | Pest incidence | | 1 | IPM and use of bio-pesticides like neem based products, NPV, BTK be promoted. |

| | | | | |
|---|---|---|---|---|
| Integrated Nutrient and Water Management | Improved soil health through balanced use of chemical fertilizer supplementing with FYM, compost, vermin compost | 4 | | |
| | Enhanced water availability through resource conservation technology, micro irrigation, irrigation pipes, etc. Seepage losses in open drains plugged. | 4 | | |
| Animal health care and feed improvement | Less spread of animal diseases in the area and less animal borne human diseases through health care and improved feed of livestock | 3 | | |
| | Stress on fodder availability | | 1 | Measures like agro-forestry, fodder crops, manger feeding, UMMB, Mineral Mixture, etc. be employed. |
| Promotion of non conventional energy by biogas plants, smokeless chullah | Reduced Pollution, better agro ecology, improved human health | 3 | - | |
| Harvesting and storage of agricultural produce | Reduced losses due to storage pests, Reduced chemical use due to timely harvesting. | 2 | | |

**Enclosure-II**

**Social Safeguards: Activities, Issues, Impacts and Mitigation Measures**

| Activities | Issues | Anticipated Level of Impacts | | Mitigation Measure (Negative Impact) |
|---|---|---|---|---|
| | | Positive | Negative | |
| Use of high yielding varieties of crops, Vegetable Cultivation, Increasing cropping intensity | Enhanced income, Employment round the year, nutritional security | 3 | | |
| | Unequal access to inputs | | 1 | Measures be employed to ensure availability of quality planting material & other inputs to all families. |
| Animal health care and feed improvement | Nutritional & livelihood security | 3 | | |
| Processing and value addition of agricultural produce, packaging and transport | Enhanced income, Employment round the year | 3 | | |
| | Change in occupational pattern | | 1 | Participatory approach, Adequate capacity building would be done |
| | Reduced drudgery and enhanced capacity to women due to use of improved farm implements machines | 2 | | |

| | | | | |
|---|---|---|---|---|
| Formation of SHG's, FBG's & Producer Company | Economic empowerment particularly of women group through formation of women SHGs | 3 | | |
| | Reduced role of middle men, contractors through formation of SHG/CIG/FBG Federation | 4 | | |
| | Social conflicts among different members | | 1 | All the interventions to be decided and implemented in participatory mode through involvement of village level and cluster level committee members |