

**REPORT ON THE POST PROJECT EVALUATION  
OF ALLEVIATING POVERTY AND MALNUTRITION  
IN AGRO BIODIVERSITY HOTSPOTS**

***R RUKMANI  
R GOPINATH  
G ANURADHA***

AUGUST 2016



---

**M S SWAMINATHAN RESEARCH FOUNDATION**

III CROSS ROAD, TARAMANI INSTITUTIONAL AREA  
CHENNAI – 600113, INDIA  
[www.mssrf.org](http://www.mssrf.org)

# CONTENTS

## **PART - I**

<b>Section 1: Introduction</b>	<b>1</b>
<b>Section 2: Key Results of Major Interventions</b>	<b>3</b>
2.1. Major Interventions to Achieve Objective 1	
2.2. Major Interventions to Achieve Objective 2	
2.3. Major Interventions to Achieve Objective 3 & 4	
2.4. Major Interventions to Achieve Objective 5	
<b>Section 3: Successful Interventions</b>	<b>10</b>
<b>Section 4: Interventions with Potential for a Greater Impact</b>	<b>13</b>
<b>Section 5: Key Learnings and Recommendations</b>	<b>14</b>

### **List of Tables:**

**Table 1: Details of Coverage, 2011-14**

**Table 2: Project Objectives and Major Interventions**

**Table 3: Classification of Research Publications in APM**

# Report on the Post Project Evaluation of Alleviating Poverty and Malnutrition in Agro biodiversity Hotspots

## 1. Introduction

This report presents the results of a post-project evaluation of *Alleviating Poverty and Malnutrition in Agro biodiversity Hotspots (APM)*. This evaluation was carried out during April to June 2016, nearly 18 months after the completion of the APM project. The APM project was implemented for a period of 42 months, from March 2011 to August 2014, across three agro-biodiversity hotspots in India- Kolli Hills in Namakkal district of Tamil Nadu, Kundura in Koraput district of Odisha and Meenangadi in Wayanad district of Kerala.

The specific objectives of the APM project were:

1. Increase farm productivity by promoting integrated and sustainable use of local crop and livestock diversity with attention to under-utilized crops and breeds, vegetables and fruit trees.
2. Enhancing food and nutrition security at individual, household and community levels, understanding gender dimensions of poverty and socio-economic empowerment of women.
3. Enhancing on- and off-farm livelihood diversification options.
4. Need based capacity building of focal farm families involving *panchayats*, governmental, non-governmental and service providing institutions and policy makers.
5. Developing tools and processes including ICT for information/knowledge management and policy advocacy.

The project interventions covered 3845 households comprising of 16553 persons across the 3 project sites (*see Table 1*).

**Table 1: Details of Coverage, 2011-14**

<b>Project Site</b>	<b>Number of Hamlets / Villages</b>	<b>Number of Households</b>	<b>Number of Persons</b>
Kolli Hills	31	841	3673
Koraput	32	2004	8547
Wayanad	31	1000	4333
<b>Total</b>	<b>94</b>	<b>3845</b>	<b>16553</b>

Source: APM Baseline Report, 2011

The post-project evaluation has assessed the relevance, effectiveness, results and sustainability of various project interventions. The reach and depth of the project interventions, the nature of farmers' response to various interventions and factors underlying the success/failure of interventions have been considered in this evaluation. In order to achieve the project objectives, a set of interventions have been implemented and the details are presented in Table-2.

**Table 2: Project Objectives and Major Interventions**

<b>Project Objective</b>	<b>List of Major Interventions</b>
Objective 1: Increase farm productivity by promoting integrated and sustainable use of local crop and livestock diversity, with attention to under-utilized crops and breeds, vegetables and fruit trees	Participatory Varietal Trial Plots
	Yield Enhancement Trial Plots
	Seed Banks / Pulveriser Mills
	Vermi compost Pits
Objective 2: Enhancing food and nutrition security at individual, household, and community levels; understanding the gender dimensions of poverty and the socioeconomic empowerment of women	Kitchen Garden
	Private Fish Ponds
	Community Fish Ponds
	Backyard Poultry
Objective 3: Enhancing on- and off-farm livelihood diversification options	Value Addition in Millets & Mushroom Cultivation
	Collective Farming of Yam & Vegetable Cultivation
	Goatery and Poultry Units
Objective 4: Need based capacity building of focal farm families involving <i>panchayats</i> , governmental, non-governmental and service providing institutions and policy makers	Farmer Groups/Self Help Groups
Objective 5: Developing tools and processes including ICT for information/knowledge management and policy advocacy	Village Resource Centres
	Village Knowledge Centres

The evaluation relied largely on primary survey of households. With regard to each of the major interventions that have been implemented in the project, a sample was drawn for a detailed inquiry. Using random sampling method, households were chosen for interviews pertaining to each intervention across the three sites. The surveys covered different stakeholders of the project through interviews and focus group discussions using a check list. While the evaluation largely relied on primary survey across the three sites, these surveys were supplemented with information culled from various reports, documents and journal

articles produced during the project term, as well as detailed discussion with the project team.

Section 2 of this report discusses the results of the major interventions undertaken in the project; Section 3 presents the details of successful interventions; Section 4 provides details of interventions that have potential for greater impact and Section 5 provides the key learnings and recommendations.

## **Section 2: Key Results of Major Interventions**

### **2.1. Major Interventions to Achieve Objective 1**

Four major interventions have been undertaken in the project to achieve the first objective of increasing farm productivity. Key results of each of these interventions – Participatory Varietal Selection (PVS), Yield Enhancement Trials (YET), Seed Banks, Vermi compost - are discussed below.

**2.1.1. Participatory Varietal Selection:** Participatory varietal selection was an approach that was used to offer farmers a choice of crop varieties to match their needs. PVS was conducted for four crops- paddy, finger millet, elephant foot yam and cassava. Among the 66 farmers who participated in the PVS trials across the three project sites over the project period, 11 were selected for our primary study. PVS trials in paddy led to identification of newly introduced varieties as best varieties by farmers in all the three project sites. In Kolli Hills, ASD 16 and ADT 45 paddy varieties were selected for *kharif* season, while ADT 36, ADT 45 and ASD 19 were selected for *rabi* season. In Koraput, *Sahabhagi* and *Pandukagura* for upland; *Pratikshya*, *Sapuri* and MTU 1001 for medium land; and *Jajati*, *Puja* and *Geetanjali*; for lowland conditions; were the varieties selected. In Wayanad, *Sampatha* and *Deepthi* were selected as best varieties by farmers. About 50 percent of the interviewed farmers had continued cultivation with paddy varieties identified as best varieties.

With respect to finger millet, cassava and elephant foot yam, the PVS trials comprised of newly released varieties, as also the local varieties that were commonly cultivated by farmers. However, the farmers who were interviewed continued to cultivate the prevalent, existing varieties that were under cultivation and have not switched over to new varieties identified as best varieties, with regard to finger millet, cassava and elephant foot yam, due to various local specific reasons.

An important benefit for farmers from PVS trials has been the awareness on the recommended package of practices pertaining to the cultivation of paddy, finger millet, cassava and yam. Awareness has also resulted in considerable levels of adoption of some of these practices among farmers.

**2.1.2. Yield Enhancement Trials:** The major objective of yield enhancement trials are to demonstrate the enhancement in crop yields, due to adoption of improved agronomic practices as per the prescribed package of practices. YET demonstrations were conducted in the farmers' fields across the three project sites with respect to paddy, cassava and finger millet in Kolli Hills; paddy, finger millet and pulses (green gram and horse gram) in Koraput; and paddy and elephant foot yam in Wayanad. A total of 446 yield enhancement trials were conducted during the project period, of which 22 farmers were interviewed. The major success of YET intervention was the adoption of simple, doable farm practices by farmers, which led to a reduction in cost of cultivation, improvement in quality of produce and enhancement in yield.

In the case of paddy, farmers widely adopted the recommended practice of reducing number of seedlings per hill and this practice resulted in reduction of seed costs, better quality of grain produce and increase in paddy yield. As regards finger millet, adoption of line sowing and maintaining equal distance between seedlings to facilitate proper growth of the plant have received much acceptance among farmers. As regards YET in cassava, majority of the farmers could adopt the recommended practice for seed selection, thereby reducing crop loss and increasing yield. With respect to YET in elephant foot yam, farmers are able to follow most of the recommendations such as seed rate, planting method, distance between pits and application of manure. Of the farmers interviewed to assess YET, 55% had adopted the recommended practices in the following season. Further, the recommended practices were also adopted by other farmers who were not directly associated with MSSRF.

*“I found that adopting the recommended practice of lower number of seedlings per hill and provision of space between hills brought down the seed rate and enhanced yield in the case of paddy. Seed rate declined from 40 kg/acre to 30 kg/ acre while yield/acre increased from 12 quintals to 15 quintals. So, on the one hand the cost I incurred on seed was reduced and on the other my sale proceeds increased with higher harvested produce”.*

- Vijayan, Wayanad

*“In finger millet, I adopted line sowing using row-marker provided by MSSRF and replanted seedlings from high dense areas to low dense areas. These practices increased the yield/acre from 1.4 quintals to 2 quintals with a consequent increase in income per acre from Rs.2240 to Rs.3200 in 2013”.*

- Ramachandra Chikma, Koraput

*“I adopted seed selection and channel preparation method as recommended by MSSRF and managed a significant increase in yield/acre, from 125 bags (9.4 tonnes) to 150 bags (11 tonnes)”.*

- Bangaru, Kolli Hills

*“I reduced the distance between pits, from 1.20 meters to 0.90 meters and this resulted in an increase in the number of pits/acre from 350 to 575, leading to an increase in yield/acre from 23 bags (1.4 tonnes) to 38 bags (2.3 tonnes) in 2013. Further, as recommended, i also reduced the seed rate per pit from 1.5 kg to less than one kg”.*

- Aji, Wayanad

**2.1.3 Seed Banks:** Seed banks were established to store certain quantity of seeds of millet grown in the village and farmers who do not have seed to sow could take a seed loan from the seed bank and return the loan later, in kind, with interest. In a seed bank, typically, seed of every variety is recycled and seed quantity accumulated to serve more farmers,. Seed banks, along with pulveriser mills, were initiated in Kolli Hills and Koraput and these were managed by Farmers’ Groups. The combination of seed banks and pulveriser, as one unit, seemingly reflect the 4C approach (promotion of Conservation, Cultivation, Consumption and Commerce of millets) adopted by MSSRF. Totally 8 seed banks- 5 in Koraput and 3 in Kolli

Hills- were established during the project period. During the evaluation study, 4 seed banks were visited-two in each site. All the four seed banks were not functioning in the post-project period and this appears to be largely related to the poor functioning of the groups that managed the seed banks. However, 50 percent of the pulveriser mills were functioning and this is largely due to successful management of one or two individuals in the respective groups.

**2.1.4 Vermi compost:** Promotion of vermi compost was undertaken in the project as a measure to ensure crop-livestock integration as also to provide low cost, nutrient-rich organic fertiliser. Over 497 vermi compost tanks in Koraput and 400 in Kolli Hills have been constructed during the project period. A total of 40 farmers- 20 in Kolli Hills and 20 in Koraput- who were covered in the vermi compost initiative during the project period, were interviewed during the evaluation. In Koraput, about 60% of farmers who were interviewed have continued to produce vermi compost even after the project period, while in Kolli Hills the corresponding percentage is lower at 40%, giving an overall adoption level of 50% for the project as a whole. However, about 10% of farmers in our sample study (in Kolli Hills and Koraput) reported that vermi tanks were constructed during the last phase of the project, in 2014, and they received neither any training on vermi compost production nor any supply of earthlings. This also implies that about 10% of the vermi tanks constructed could not be utilised for vermi compost production and they served as storage tanks for sundry items.

Farmers perceived that application of vermi compost results in healthy plants, enhanced yield and better quality of crop produce. Application of vermi compost was recommended for the kitchen garden as also field crops (eg. vegetables, banana, pepper). Farmers also report a marginal reduction in use of chemical fertilisers with application of vermi compost.

*“I used to apply chemical fertilizer for my banana plantation, costing Rs.1600 for half an acre. After I learnt the technique of vermi compost production I have been applying only vermi compost and stopped purchasing chemical fertilisers. Not only has my cost of cultivation come down but I also observe a significant improvement in the quality of produce”.*

- Mahalingam, Kolli Hills



Farmers have also realized that application of smaller quantities of vermi compost prove to be as effective as large quantities of farmyard manure application. Production of vermi compost over and above one's need also provides scope for income generation. In our sample survey, about 5% of farmers in Kolli Hills and Koraput had sold their vermi compost produce to other farmers. Further, there are instances when farmers from project villages where this intervention was not initiated, have demanded that they be covered under this programme, indicating the perception of usefulness of the vermi compost initiative.

## **2.2. Major Interventions to Achieve Objective 2**

Three major interventions were undertaken in the project to achieve the objective of enhancing food and nutrition security. The three interventions are promotion of kitchen gardens, pisciculture and backyard poultry.

**2.2.1. Kitchen Gardens** were promoted to improve household food security by enhancing the household's access to a diverse set of vegetables and fruits. A total of 1412 kitchen gardens have been promoted during the project period- 398 in Kolli Hills; 387 in Koraput; and 627 in Wayanad. All the 45 households we interviewed across the three project sites report that the kitchen garden initiative helped in increasing the availability of vegetables at the household level and in improving their dietary diversity. This initiative made it possible for people to consume a variety of self-grown, pesticide-free, fresh vegetables. In Wayanad, nutrition dense orange flesh sweet potato was distributed to selected households belonging to *Panniya* and *Kuruma* community. The kitchen garden initiative has enhanced consumption of vegetables such as carrot, beet root, cauliflower, radish, cabbage etc, which they were not in the habit of consuming on a regular basis. **All** the 45 households who were interviewed are continuing the kitchen garden activity, though all the vegetables grown during the project period are not continued to be grown. About 47% in Koraput and 27% in Wayanad reported that they had surplus, over and above their requirement, and have shared/sold the produce from kitchen garden. Farmers vouch for the quality of seeds distributed by the project team that had better germination rate, better quality of produce, lower maturity period and better yield. Further, distribution of nylon nets to protect the kitchen garden from chicken and goats was found to be a useful supporting measure.

*“We were so excited to harvest a variety of fresh, pesticide-free vegetables almost every day from our backyard. Eating healthy and tasty food gave us a tremendous sense of satisfaction and we shall continue this practice of growing kitchen garden. Moreover, we could save up to Rs 150 per week- which we were spending on buying vegetables before we had a kitchen garden”.*

- Vennila, Kolli Hills

**2.2.2. Pisciculture** was introduced in common and private ponds to enhance household nutrition status through increased access to fish. Pisciculture intervention was initiated in 20 community fish ponds and 59 individual ponds during the project. Of these 4 community ponds and 6 individual ponds were surveyed for the evaluation study. During May 2016, 66 percent of individual ponds and 25 percent of community ponds were continuing with pisciculture activity. In individual ponds, fish was harvested four times in a year and the average catch was to the tune of 3 kg per harvest. Wherever pisciculture was promoted as a group activity in common ponds, the quantum of harvest was related to the size of the pond, availability of water and the group dynamics. In the community fish pond, the harvested produce was sold in Kolli Hills whereas in Koraput it was distributed within the village. One community fish pond in Koraput reported an average harvest of 600 kg of fish in 2013, that was shared among the 60 households in the village. Two subsequent harvests in a year from the community fish pond led to an average share of 20 kg/household/annum.

**2.2.3. Backyard Poultry:** Household level backyard poultry was promoted in Wayanad and Koraput in order to enhance consumption of eggs and chicken meat at the household level. In all, 734 households in Koraput and 200 households in Wayanad received chicks during the project period. On an average, *vanaraja* hen distributed in Koraput, laid 120 eggs in a year, while *gramasree* and *gramalakshmi* laid about 200 eggs in a year. In Koraput, the average size of the chicken was greater than the local variety. Once the chicks were received by a household, after about three to four months, a household had access to 2 to 3 eggs everyday on an average, for a minimum of one year. The consumption of eggs and chicken meat in a household certainly improved with the promotion of backyard poultry initiative.

### **2.3. Major Interventions to Achieve Objective 3 & 4**

Several interventions were undertaken through the project in order to enhance on-and off-farm livelihood diversification options for farmers: goatery and poultry were initiated in Kolli Hills; mushroom production, tamarind decorticator and value addition on millets were initiated in Koraput; and collective farming of elephant foot yam and vegetables were started in Wayanad. In all these activities, the role of the project was in formation of groups (SHGs and Farmers' Clubs), provision of technical guidance to group members, supply of basic inputs to start the group activity and necessary facilitation during the course of the activity. Group activities promoted for livelihood enhancement with regard to collective farming, and goatery were successful, while poultry, mushroom production and value addition in millets had limited success.

In addition to the groups that focused on income enhancement, other groups were also promoted as service providers. These groups were engaged in management of drudgery reduction tools or management of seed banks. Groups promoted to manage drudgery reduction tools - small farm machineries and pulverizer mill continue to function and are being effectively used by farmers.

### **2.4. Major Interventions to Achieve Objective 5**

Village Resource Centres (VRC) and Villages Knowledge Centres (VKC) were established with an objective of enhancing the capacities of farm families pertaining to agricultural practices, household health and food security aspects, marketing etc. In Kolli Hills 1 VRC and 2 VKCs, in Koraput 1 VRC and 3 VKCs and in Wayanad 1 VRC and 1 VKC were promoted during the project period. Management committees, comprising of village representatives, were promoted to manage the activities of the centres. For the evaluation study, in Kolli Hills, we visited one VRC and one VKC and in Koraput we visited two VKCs. Both the VKCs in Koraput are not functioning, while the VRC and VKC are functioning in Kolli Hills. In Wayanad the VRC that was operating from the APM office premises has been closed down, while the VKC has been handed over to the Meenangadi Gram panchayat.

Several types of research outputs have been produced in the project: research papers, reports, presentations in conferences and seminar and posters. These publications are available as

journal or book articles, paper/poster presentations, reports and project documents. Details of such research publications are presented in Table-3. An examination of the research papers suggest that out of 9 papers published, 5 papers cover objective 1, 1 paper covers objective 2, 1 paper deals with objective 3 and 2 papers cover objective 5.

**Table 3: Classification of Research Publications in APM**

Presentation Location	Poster - Presentation		Paper Presentation		Articles Published	
	UA team	MSSRF	UA team	MSSRF	UA team	MSSRF
International	9	5	4	6	1	5
Canada	7	6	5	6	0	2
India	0	8	0	7	0	0
Total	16	19	9	19	1	7

Source: Final technical report of APM, 2014

### **Section 3: Successful Interventions**

Of the many interventions that were undertaken in the project, seven interventions may be termed as successful. These interventions continued to be practiced in the field during the post-project evaluation, indicating their wide reach, acceptance, adoption and sustainability.

These interventions are:

- Yield Enhancement Trials
- Vermi compost Production
- Kitchen Garden
- Backyard Poultry
  - Collective Farming of Yam
  - Collective Farming of Vegetable Cultivation
  - Goatery unit managed by SHG

#### **a) Yield Enhancement Trials**

YET interventions were a major success as farmers realized increase in yield by adopting simple doable agronomic and other techniques that were propagated. The sustainability of crop-specific recommended practices also partly lies in the ability of farmers to customise

the learnings to their specific context. The practices that farmers continue to adopt are the following:

- in paddy, the improved practices relating to transplantation and spacing of seedlings;
- in finger millet, line sowing and maintaining equal distance between seedlings;
- in cassava, seed selection method; and
- in yam, seed rate, planting method, distance between pits and application of manure.

#### **b) Vermi compost Production**

Farmers continue to produce and use vermi compost as they perceive it as an extremely beneficial input for crop growth and soil health. While broadcasting is the usual method of application of farmyard manure, vermi compost is applied at the base of the plant. Typically, application of smaller quantities of vermi compost produce better yields than larger quantities of farmyard manure. This is particularly so for field crops such as banana and pepper, which are important in Kolli Hills, and vegetables in Koraput. Vermi compost was found beneficial for kitchen gardens across the two sites.

However, production of vermi compost requires the maintenance of a minimum moisture level for worms to survive and to be able to convert the organic waste to vermi castings. During severe summer, particularly in Koraput, continuation of vermi compost production is seriously hampered by scarcity of water. Further, out migration of farmers, particularly in Kolli Hills during January to April, makes it difficult for farmers to attend to such maintenance tasks. In the event of a farmer losing his earthworms, the production of vermi compost cannot be sustained. Hence, linking the farmers to supply sources of earthworms, or production of earthworms locally, become crucial for sustainability.

#### **c) Kitchen Garden**

The kitchen garden initiative helped in increasing the availability of vegetables at the household level, thereby diversifying the household's food basket. Further, households also reported significant saving in their food expenditure.

Though rural households across all three sites have always had the tradition of growing vegetables at homestead land, the number of varieties grown were few, not exceeding two or three. In Kolli hills, brinjal and tomato were the crops that were grown by households in the pre-project period, while in Wayanad it was brinjal and cowpea and in Koraput it was brinjal, country beans and pumpkin. Growing a kitchen garden where they consciously raise a variety of vegetables-greens, green leafy vegetables, roots and tubers and fruits-has been a new learning for the households. Further, application of manure/vermi compost for kitchen garden was not a regular practice for households before the project intervened in this area. Project's recommendation of application of vermi compost for kitchen garden was seen as an important contributor for growth of healthy plants by farmers. Thus, the farmers recognize that the project added greater value to a simple activity practiced by them. The contribution of kitchen garden to household's food consumption is well recognized by all households. For the kitchen garden initiative to be sustainable in the long run, it is imperative that access to good quality seeds/saplings is facilitated. A mechanism for production or purchase of good quality seeds by farmers' groups/SHGs is perhaps a workable model for sustainability and scalability of kitchen garden initiative.

**d) Backyard Poultry**

Promotion of backyard poultry ensured availability and access to fresh, eggs for households without incurring any major expenses. This initiative helped in diversifying the food basket by enhancing the consumption of eggs at the household level on a regular basis. During the post-project evaluation, we met some farmers who continued to have the hens that were distributed during the project period, particularly in Wayanad. However, sustainability of this initiative requires special focus on suitable breeds and management of risks (from diseases and predators).

**e) Group Enterprises:** Collective farming of yam; Collective farming of vegetable cultivation; and Goatery

With regard to the successful group activities, namely, goatery, collective farming of yam or vegetables, the role of the project was to train and support the women to turn these activities carried on at the household level into group enterprises and this has been done effectively in the project. The project has promoted and supported women groups to cultivate elephant foot yam/vegetables in seasonal paddy fallow in Wayanad. The group comprised of landed as also landless women farmers who leased in land. Farmers reported

earning a significant income from yam/vegetable cultivation and recognized the importance of this intervention in enhancing their income status. In Kolli Hills, goat rearing as an enterprise was initiated for a group, and the members unanimously report goat rearing to be a significant income earning activity. The forward and backward linkages were integral to the overall implementation plan of these three interventions and this proved to be the underlying factor for success of these group initiatives. Further, the group activities enhanced the capability of women and acted as the first step towards their empowerment and development.

#### **Section 4: Interventions with potential for a greater impact**

Some interventions that were implemented in the project had limited impact due to specific constraints. If the constraints are addressed these interventions can be made successful and sustainable.

##### **i) Participatory Varietal Selection**

This intervention provided an opportunity for farmers to observe the growth of multiple varieties in their own field and this was a useful learning experience. A major constraint in expansion of area with the variety used in the varietal selection is to do with limited availability of required quantity of such seeds. Further, lack of adequate knowledge on the identified seed varieties also poses a constraint for accessing seeds. Developing linkages for sourcing the new seed variety would make this intervention effective and sustainable.

##### **ii) Seed Bank**

Seed banks were functioning and serving the needs of the village community during the project period. The non-functioning of seed banks after the project period perhaps reflects the lack of adequate managerial and technical capacity of the management committee of the seed banks. For the sustainability of seed banks it is important to strengthen the capacity of seed bank committee members and create adequate awareness on the positive impact of seed banks.

##### **iii) Pisciculture in Community Ponds**

This was a newly introduced intervention in Kolli Hills, while in Koraput the practice of pisciculture in community ponds was already prevalent. A limiting factor for sustainability

of pisciculture in community ponds pertains to insufficient water through the summer months in the pond. Appropriate strategy is required to manage the risk involved in drying up of ponds, and must be applied to the intervention for it to be sustainable. Further, across all three sites, farmers had no knowledge about where fingerlings were procured during the project period, and this lack of knowledge was also a limiting factor for sustainability.

**iv) Group Enterprises (Value addition in Millets; Mushroom Production and Poultry)**

Group activities promoted for livelihood enhancement with regard to mushroom production and value addition in millets and poultry functioned effectively during the project period, but turned unsustainable after the project term. Limited development of input-output linkages appears to be the major limiting factor affecting the sustenance of these enterprises. The groups managed with the linkages developed for inputs (eg. spawn in the case of mushroom in Koraput) and linkages for markets (eg. poultry in the case of Kolli Hills) as long as the project lasted, but could not sustain once the project wound up. Thus, the development of forward and backward linkages needs to be integral to the overall implementation plan for the activity to continue and remain sustainable.

## **Section 5: Key Learnings and Recommendations**

**a) Input-output linkages**

A key learning of this evaluation refers to the need to strengthen the input-output linkages for all promoted interventions so that the activities shall continue after the project period. Several avenues may be tried for strengthening the required linkages. One such option may be the promotion of enterprises locally to cater to the input needs. For eg., promotion of spawn production enterprise locally will cater to the input needs of mushroom production units, and also create non-farm employment opportunities.

**b) Management capacity of groups/grass root institutions**

The performances of groups/grass root institutions that participated in the project varied widely. The variation in group performance appears to be related to the difference in the managerial and technical capacity of the group members. It is necessary to focus on building the capacity of group members so that the promoted group activities remain



sustainable. Adequate investment on capacity building of group members may also be seen as an important component for the sustainability of the project.

**c) Exit Strategy**

A clearly defined strategy to withdraw from villages needs to be put in place during the project term to ensure continuation of project activities in the post-project phase. A well defined strategy would help in bringing out the role change of community leaders/grass root institutions promoted during the project. Grass root institutions that were hitherto supported by the MSSRF will have to be capacitated to manage their activities independently without any external support after the project period. A strategy for handing over the assets created during the project term should also be part of the overall exit strategy.

The evaluation found that almost all the interventions that were taken up in the project were well received by the community participants across the three project sites. Across all three project sites, the target households are from the most marginalised sections, predominantly belonging to tribal and Dalit communities, either with no land holdings or with small and marginal holdings, eking a livelihood from the margins. The successful and sustainable interventions of the project have had a positive influence on dietary diversification and income of households, thereby contributing to the major objective of the project of alleviating poverty and malnutrition.