



MAHILA KISAN SASHAKTIKARAN PARIYOJANA
BASELINE REPORT

“Promoting Livelihood Security Among Women
Farmers in South Odisha”

Supported by
National Rural Livelihood Mission,
(Govt. of India) &
Sir Dorabji Tata Trust, Mumbai

Implemented by:
Madhyam Foundation,
Bhubaneswar, Odisha
(on behalf of SODI consortium)



Mahila Kisan Sashaktikaran Pariyojona

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Preface

This baseline study was undertaken over a period of six months starting from February 2014 to establish a starting point on which the impact of the current program will be measured on long term basis in the target operational areas. The study gathered and assessed quantitative and qualitative data from a large and diverse sample of 199 villages covering 9763 households from four districts (Rayagada, Koraput, Malkangiri and Nawarangapur) of South Odisha. Its findings represent a first step in South Odisha Development Initiative's (SODI) ongoing attempts to gain a deeper understanding of food security and livelihood issues in the operational villages.

South Odisha Development Initiative (SODI) looks forward to throw lights on the grey areas and to learn the practical and innovative solution to the problems in the domain of livelihood that affect the community as a whole and everyone as individual in the project area. Thus, we intend to move forward while taking clue from the past. We intend to build our future attempts on the edifice of past as this will give required enthusiasm and temperament needed to whiz past on the track of development and socialization.

The purpose of this brief document is to share our learning and findings of the base line survey undertaken in the operational areas of four districts. We look forward to receive relevant information and support from other agencies concerned about improving the quality of life among people. This would also be helpful to us as it will strengthen our efforts, resources and skills to promote better health, education, habitat and livelihood in these inaccessible terrains.

We sincerely hope that the findings of the study will be extremely useful to the various stake holders of the project as well as to all those who are involved in preparation of policy and programs for marginalized communities like schedule tribes, Dalits, OBCs, Minorities and marginal communities.

We would like to convey my heartiest thanks to all the partner NGOs without whose active support and cooperation this huge task could not have been materialized. I am also thankful to the community members and respondents who have given their valuable time to make the survey participatory and meaningful.

Lastly I must thank my team members for completing the study process in stipulated time frame.

Subrat Kumar Singhdeo
Executive Director
Madhyam Foundation
And
Convener, South Odisha Development Initiative (SODI)
September 2014

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List of Acronyms

BPL	Below poverty line
CBO	Community Based Organization
CRP	Community Resource Person
CSP	Community Service Provider
DRCS	District Registrar of Cooperative Society
HH	Household
FG	Farmer Group
KVK	Krushi Vigyan Kendra
MG	Marketing Group
MFI	Micro Finance Institution
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MKSP	Women Framers Empowerment Project
MIS	Management Information System
NABARD	National Bank for Rural Development
NREGA	National Rural Employment Guarantee Act
NTFP	Non Timber Forest Products
PDS	Public Distribution System
PNGO	Partner Non-Governmental Organization
PRP	Para Professional
SGSY	Swarnajayanti Gram Swarozgar Yojana
SHG	Self Help Group
SC	Schedule Caste
ST	Scheduled Tribes
VDC	Village Development Committee
IPM	Integrated Pest Management
INM	Integrated Nutrient Management
PG	Primary Group
MKSP	Mahila Kisan Sashaktikaran Pariyojana
PTD	Participatory Technology Development

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Executive Summary

Madhyam foundation in collaboration with five civil society organizations is implementing the project “Promoting Livelihood Security among Women Farmers of South Odisha” since June-2013. The project is supported by Ministry of Rural Development (MoRD) for empowerment of women farmers under the program ‘ Mahila Kisan Sashaktikaran Pariyojna’ of National Rural Livelihood Mission for a period of three years. The project is intended for reaching out 13200 numbers of Mahila Kisan households in 288 villages of four districts, namely Malkangiri, Koraput, Nawarangapur and Rayagada of south Odisha in a consortium named as South Odisha Development Initiative (SODI). Harsha Trust, RCDC, Madhyam Foundation, Pragati, OPDSC and Chetna Organic Farmers association are the present partners of SODI to implement the program where as Madhyam Foundation has been coordinating the activities of SODI as its convener since inception. The main objective of SODI is to establish a model of collectively working together in South Odisha and improving the socio-economic well being of the poor and marginalized community, specially the tribal.

The Ministry of Rural Development [MoRD] has approved the project to reach out to 13,200 women farmers in 288 villages under 11 CD blocks and four districts of South Odisha within a period of 3 years. The pattern of assistance for the project is 75% from NRLM fund and 25% from Sir Dorabji Tata Trust, Mumbai.

While the basic objective of MKSP is to improve the quality of life of the women cultivators at large, the major focus of the project is to ensure food security, enhance household level income and promote vibrant community institutions of women farmers for improving their collective bargaining power.

The primary focus of this baseline study is on role of women in agriculture and rural livelihoods, income from agriculture, linkages with the government schemes related to agriculture and relationships with primary and secondary institutions. Keeping in view the objective of the study, a total of 199 villages were covered across four districts. The baseline study covered 9763 households in 33 gram panchayats of these four districts. Apart from the individual interview at household level, FGDs were also conducted in few selected villages to assess the qualitative aspects of the study objectives.

This report summarizes the main findings related to the present scenario of livelihood options and practices, poverty and its multi-dimensional nature, infrastructural facilities, institutions, accessibility to the government schemes and level of their satisfaction. The report also briefly discusses the livelihood activities pursued by the households and the livelihood outcomes as a result. The detailed information and analysis are being compiled, which would highlight geographical variances, construct poverty profiles and would identify key trends effecting poor.

The report has been divided in to six chapters. The first two chapters highlights the objectives and methodology of the study where the 3rd and 4th chapters highlight on the study findings especially on livelihoods scenario. The 5th chapter depicts the support from linkage with Government schemes where as the recommendations and suggestions are highlighted in the final chapter. Hence the overall report concludes with a set of broad findings and recommendation which will be a reference material for the next phase of the project implementation.

Chapter -I

Background and Objective

1.1 Background

Odisha is the eleventh most populous state in India as per the 2011 Census with 41 million people contributing 3.47 percent to the total population of India. Over the last decade, the state has witnessed a 14 percent growth in its population. Most of this population is concentrated in the rural areas with the urban population constituting only 17 percent. According to the Planning Commission's Tendulkar Committee Report 2009, the poverty headcount ratio of Odisha, at 57.2 percent, is the worst among all Indian states and way above the national average of 37.2 percent. If factors beyond income are considered (Multidimensional Poverty Index)¹, about 63.2 percent of the people in Odisha live below the poverty line. Rural poverty, at 60.8 percent, is also significantly higher than the urban poverty, which is 37.6 percent, and the worst in India. Further, the extent of poverty is not evenly distributed in all the regions and among all social groups of Odisha. The Scheduled Castes and Scheduled Tribes of the state also have a high incidence of poverty as compared to the SCs and STs in the country as a whole².

The performance of the state in terms of literacy remains a source of concern. Although the literacy rate of Odisha (73.45 percent) is only slightly lower than the national average (74.04 percent), the gap between male and female literacy, at 82 and 64 percent respectively, is huge. According to the Odisha Human Development Report, although public expenditure on education has been rising in nominal terms, the real increase has been very limited.

Administratively, Odisha is divided into 58 Sub- divisions and 171 Tahasils in 30 districts. There are 6227 G.P.s under 314 C.D. Blocks in the State. The state is located at the sub-tropical coastal location and is therefore prone to tropical cyclones, storm surges and tsunamis. 10 out of 30 districts of Odisha are falling under Eastern Ghat and Southern Highland region is called as South Odisha. In terms of ecological vulnerability and indices of poverty, all the CD blocks in these 10 districts are backward (Ghadei Commission report - 1994).

South Odisha Development Initiative (SODI) is a consortium of seven development organizations working in south Odisha which came into being in 2009 – 2010. Pradan, Harsha Trust, RCDC, Madhyam Foundation, Pragati, OPDSC and Chetna Organic Farmers association are the present partners of SODI. The main objective of SODI is to establish a model of collectively working together in 10 districts of South Odisha and improving the socio-economic well being

¹ Human Index Report 2010

² Human Index Report 2011

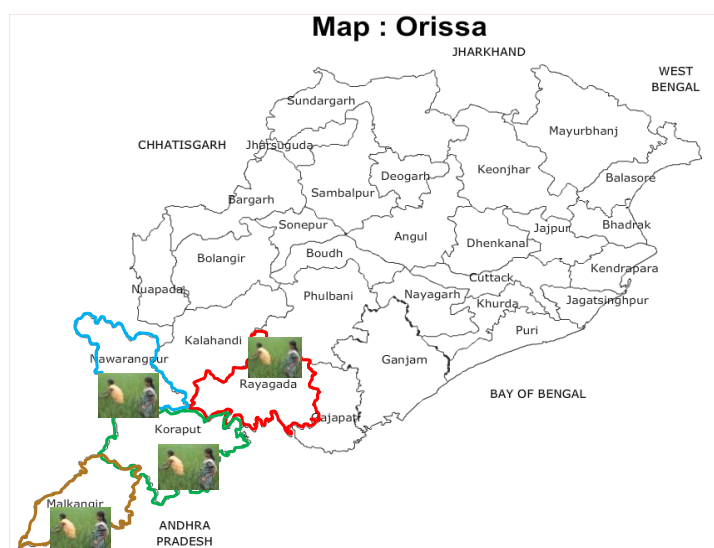
of the poor & marginalized community, specially the tribal. Madhyam Foundation of Bhubaneswar, Odisha has been co-coordinating the activities of SODI as its convener.

Agriculture, the single largest production endeavor in the country is increasingly being recognized as a female activity. Agriculture sector employs 80 percent of all economically active women; they comprise 33 percent of agriculture labour force and 48 percent of self employed farmers.³

Despite such extensive involvement of women in agriculture, their access to extension services and production assets like seed, water, credit, subsidy etc is very much constrained. Most of them are not recognized as farmers for want of ownership of land, they are not considered as beneficiaries of various government schemes. Further due to multiple roles that women have to perform within the household and in agriculture, her access to knowledge and information is also constrained and her opportunities get limited. Therefore, to improve the present status of women in agriculture, the GOI in MoRD announced MKSP as sub-component of National Rural Livelihood Mission (NRLM) with the primary objective to empower women in agriculture by making systematic investment to enhance their participation and productivity, as also create and sustain agriculture based livelihoods of rural women.

1.2 About the Project

The Ministry of Rural Development [MoRD] has approved the role of Madhyam Foundation along with another five civil society organizations for implementing MKSP to reach out 13,200 women farmers in 248 revenue villages, 11 CD blocks and four districts of South Odisha, namely Koraput, Nawarangpur, Malkangiri and Rayagada. Apart from Madhyam Foundation, the other five implementing partners are RCDC, OPDSC, Pragati, Chetana Organic Farmers' Association and Harsha Trust. The project period is for 3 years starting from July-2012. The pattern of assistance for MKSP project is 75% from NRLM and 25% from Sir Dorabji Tata Trust, Mumbai.



³ Govt of India, Agriculture department website

The basic objective of MKSP project is to improve the quality of life of the women cultivators at large. The major focus of the project is to ensure food security, enhance household level income and promote vibrant community institutions of women farmers for improving their collective bargaining power.

The specific objectives of the project are as follows:

- To enhance the participation and productivity of women in agriculture
- To create sustainable agriculture related livelihood opportunities for women
- To improve skills and capabilities of women in agriculture to support farm and non-farm based activities
- To ensure food and nutrition security at the household and community level
- To enable women to have better access to inputs and services of the government and other agencies

1.3 Objective of the study

In the above backdrop, the baseline survey is intended to generate first hand information on the contemporary situation of the operational area. As the project will be implemented for a period of three years, a definitive comparison would be made with that of the project findings to understand whether changes as desired/mandated has been made and the impact visible as a part of project intervention is desired and well directed. The data from the baseline study would generate a set of indicators which will be closely monitored over time to time to assess the direction and pace of project. However the study has the following specific objectives:

- To capture the present demographic and socio-economic profile of the project area
- To assess the existing livelihood pattern and identify various sustainable agricultural practices in the project area
- To figure out the coverage of Mahila Kissan under various social and economic security schemes of the Government
- To analyze the prevalence of other social issues and forms of gender based discrimination that affects the decision making and empowerment of women in their community.

Chapter: II

Research Methodology

Before describing the research methodology, it would be contextual to highlight the parameters identified for measuring the livelihoods status of Mahila Kisans. The basic objective of MKSP being improving the quality of life of the women cultivators at large, the following parameters have been identified for comparing the livelihood status at the starting and terminal points of Mahila Kisan Sahaktikarana Pariyojna which will specifically show the achievement of the project or its failure or even a level of status-quo:-

- Sources of earning
- Ownership of assets
- Status of livestock ownership
- BPL status
- Migration status
- Crop-wise area and their productivity
- Total area under cultivation with the break-up of irrigated and un-irrigated area
- Basic facilities for Irrigation structure available
- Use of fertilizer and pesticide
- Levels of skills and performance by women in agriculture
- Increased access of women in agriculture to productive technology and information
- Drudgery reduction for women in agriculture through use of tools/technologies
- Improved market access for women's produce/product
- Pool of bare-foot experts for knowledge dissemination
- Nutritional security of women/child

2.1 Methodology

The aim of this study was to identify the socio-economic profile dominated by primary and secondary types of occupation, to prioritize issues and problems that shape and reshape the agricultural profile of the community residing in the operational areas. It also aimed at making a scoping exercise of identifying linkage that exists between different set of institutions as well as resource units so that elimination of poverty through linkage of resources can be done. Hence, a interview schedule based survey was adopted in these four districts to find out the field situation in the project areas. In-depth interviews of head of the household were carried out to identify the important parameters that really shape the livelihood of the people. Apart from this, Focused Group Discussion (FGD), interview with key informants, cross checking and triangulation of data/information were also conducted during the whole process of data

collection. Besides respondents, PRI representatives; Anganwadi workers, Health workers, school teachers, village head and experienced senior staff were also consulted during the primary data collection process.

In the base line survey, emphasis was given to find out the present status of women farmers located in four districts in terms of their caste composition, economic development, association with different institutions, agricultural development, irrigation facility, infrastructures availability, source of income, patterns of migration, size of landholdings, cropping pattern, availability of forest produce and animal population, etc. The information reflects on their needs and gaps present in their socio economic development. All these information are collected with the help of structured household schedule. In the present survey 9763 households of 199 villages in nine blocks are covered.

The survey work was carried out by the local animators who were supervised and guided by the qualified and experienced field staff of partner organizations. Even the household schedule was examined by the respective supervisor to ensure the quality of survey work. The information of these schedules was transferred to excel sheets for data analysis. The checking of data entry was confirmed at several stages. The statistical tables were generated and interpreted by the SODI secretariat, located at Madhyam Foundation. The baseline survey work was carried out between February to July-2014. The table below shows the geographical coverage of the baseline study.

2.2 Sampling and sample size

Depending on the project compulsions, 100% households in the 1st year of project intervention are covered under the study. The details of the sample are given in the table no. 2.1 .

Table No: 2.1

Geographical Coverage under MKSP Baseline study:

Partner	District	No of Blocks	No of Panchayat	No of Villages	Total HHs
Madhayam Foundation	Malkangiri	Mathili and Khairput	Seven	33	1651
RCDC	Rayagada	Gunupur and Munniguda	Six	28	1678
Chetna	Rayagada	Bisamcuttack and Muniguda	Five	50	1655
Harsha Trust	Nawarangapur	Kosagumuda and Papadahandi	Eight	28	1579

OPDSC	Rayagada	Rayagada and K Singhpur	Six	29	1550
Pragati	Koraput	Koraput and Kotapada	Seven	31	1650
Total	4	11	33	199	9763

The above table shows about the sample size taken from different districts. It has been decided during the process of study that the interview schedule will be administered only to women as the women are the principal target group for the project. However, among the age groups itself, the representation of above 35 years dominates the distribution followed by representation from above 18-35 years age group. As the project is concerned with the livelihood aspects a higher percentage of samples from 18 years and above are taken considering the case that these age groups are economically most vibrant and majority of them are engaged in the agricultural production.

2.3 Tools for the data collection

Three tools were administered during the process of primary data collection. These are as follows:

Household Survey: The household survey was carried out as per the sample finalized in consultation with partner NGO staff. While the household survey provides essential quantitative figures, the case study and FGD supplemented evidence to the findings. Apart from household survey, specified guidelines were developed for Focused Group Discussion and In-depth interview with various other stakeholders associated with the process.

Focus Group Discussion: In all sample villages, FGD was conducted separately for men and women on the selected variables. 6-8 participants in each group were interviewed for 30-45 minutes in a group to elicit responses related to their life and livelihood.

Village Profile: Village profiling was conducted in all the sample villages using semi structured interview with key informants from the village. During the exercise we focused on listing the resources, its usages, productivity and economic analysis and the existing gaps.

2.4 Pre- testing of Tool

Pre-testing of household tool was carried out in one of the village in Rayagada district. The team pre-tested the tool and pointed out the problem areas in the tools and the difficulties faced in administering the tool which was modified after discussion within the team.

2.5 Training of survey team

A one-day orientation was conducted at Rayagada for the interviewers and supervisors on the content of the interview schedule and the methodology for conducting the FGD. Each of the members filled in two set of interview schedule among them to get themselves oriented on the content. Interactive sessions used for the training helped participants to learn three tools thoroughly and they also participated enthusiastically in mock sessions. After each session/tool, feedback was given to the participants and also clarifications were made.

2.6 Implementation Process

The study was carried out in three phases each having its own requirement:

Phase 1: Preparatory phase

Preparation of study design: The study design was presented in the SODI consortium meeting which was finalized after a series of consultations. Accordingly the data collection tools and matrices developed. A one-day orientation was conducted at Rayagada for the interviewers and supervisors on the content of the interview schedule and the methodology for conducting the FGD.

Finalization of Interview Schedule: The baseline interview schedule was developed and reviewed by partner chiefs to address the study objectives. Based on the feedback from partner chiefs the interviews schedule was revised and finalized for training. Along with the interview schedule, guidance notes were prepared for focused group discussion.

Baseline Study Action Plan: In consultation with all stakeholders, an action plan was developed and it was agreed by all the partners that the timeline has to be adhered as per the plan of action. Activities mentioned in Action plan include completion of data entry, data collection, data analysis, submission of report, consolidation and finalization of report at Madhyam Foundation level, and submission to ministry. Responsibility was also fixed on project staff for completion of each activity.

Phase 2: Data Collection

Fieldwork: Field work was carried out within 3 month, in between 20th February to 20th May, 2014. Each PNGO formed two teams comprising two members each. Along with the team, partner NGO chiefs were also involved in the process of data collection to ensure the quality of the information.

Back check: After the interviews were completed, supervisor conducted back checks i.e. go to the household where interviews were completed and back check information recorded by administering certain sections of the interview schedule on ample basis.

Phase 3: Analysis and Report Writing

Data Entry and Tabulation: The filled in interview schedules were edited and scrutinized in the office by the field investigators. All open ended questions were then coded and entered in excel. For the closed ended questions a program was developed using excel sheet. The data were entered ensuring the accuracy. The data analysis was done in Excel (Pivotal table) and tables generated as per the analysis plan that was finalized in consultation with PNGOs.

Data presentation: The analyzed data was presented in the form of a report.

2.5 Structure of the report

This report summarizes the key findings of the data collected through the above process. The report also briefly discusses the livelihood activities pursued by the households and the livelihood outcomes as a result. The detailed information and analysis are being compiled, which would highlight geographical variances, construct poverty profiles and would identify key trends effecting poor.

The report is broadly compartmentalized in to six sections. The first few sections of the report look at infrastructure availability in the villages, community socio economic condition, determinants of well being and the extent of relative poverty. The next few sections analyses the agricultural practices, productivity, difference in livelihood activities, access to livelihood services and the extent to which livelihood outcomes have met the expectations of the target group. The report concludes with a set of broad findings and recommendation for the next phase of the project implementation.

Chapter-III

Study Findings

Profile of Operational Villages

The objective of this chapter is to understand the village profile, demographic profile, infrastructural facilities etc across the 199 villages covered under the sample of the study. The chapter is the result of the analysis obtained in the village profile tool. For better understanding of the geographical area, all the tables were generated on the basis of data gathered at each partner level.

3.1 Household Profile

This section portrays complete information about the profile of the households surveyed, i.e. different social category, economic status, type of houses that they reside in, availability of drinking water and toilet facilities. In addition to this, the chapter highlights on the educational profile of the household member with special focus on women work participation

3.1.1 Demographic Profile

The total number of households in all the sample project villages (199 villages) is 9763. In terms of demographic profile, Scheduled Tribe seems to be the pre dominant category as it forms 78 percent of the households. The analysis of caste composition essentially tilts towards schedule tribes as the composition of schedules tribes out numbers all other social category. The Scheduled Caste forms a composition of nearly 12 percent in the sampled villages and other backward and general castes contributed to about 10 percent of the households in the sampled villages. The table below gives a much more detailed description of the villages (that were part of this study) and the division of households as per caste

Table No 3.1

Caste wise distribution of HHs in villages

Partner NGO	District	Total HHs	ST	SC	Others
Madhayam Foundation	Malkangiri	1651	1287	198	166
RCDC	Rayagada	1680	1310	201	169
Chetna	Rayagada	1655	1290	198	167
OPDSC	Rayagada	1550	1325	203	171
Harsha Trust	Nawarangapur	1579	1231	189	159
Pragati	Koraput	1650	1287	198	165

Total		9763	7730	1187	997
Percentage		100	77.97	11.97	10.06

Source: Primary Data

3.1.2 Status of Institutional Membership

Institutions, both within and around the community, play a major role to increase the quality of life of the inhabitants of a particular area. During the mapping of institutions, it was revealed that a number of institutions are in operation in villages. Some of the institutions are- village development committee, joint forest management group, SHGs, primary agricultural cooperatives, youth clubs etc. The functionality and efficiency of institutions vary from village to village. Although most of the households in any area have close affinity to some political parties, yet in development context we do not consider the same as one of the key factors that contributes largely towards increasing the quality of life of a household. Hence, the functioning of political groups has not been included in the study framework.

The other factors like association with different non-political and developmental groups and institutions within the village and the area are major contributing factors in quality of life of the people. In this context the association of each household with such institutions was assessed during the field study. The status of such institutions is presented in the following table:

Table No 3.2

Status of Institutional Membership

Partner NGO	Institution Building Status				
	SHG	Cooperative	Youth Club	Farmers Club	VSS*
Madhyam Foundation	780	2	146	337	675
RCDC	802	0	231	523	342
COFA	628	0	489	356	567
OPDSC	818	240	367	567	731
Harsha Trust	1074	0	410	241	698
Pragati	632	4	567	564	643
Total	4734	246	2210	2588	3656
Percentage	48.4	2.5	22.6	26.5	37.4

*VSS – Vana Suraksha Samity

Out of the total 9763 Mahila Kissan households under MKSP project, 4734 (48.4 %) are members of Self Help Groups (SHGs) and only 2.5 Mahila Kisans are the members of

cooperatives. Of the total MKSP farmers 37 percent are members of their respective Vana Suraksha Samity.

3.1.3 Social and economic security status

With respect to the food security status of the households covered across the villages, it was noted that 85.3% households are availing food security entitlements through BPL and ration cards. They have BPL cards either in their name or in the name of their undivided family heads at the time of BPL survey. Apart from this about 9 % of the Mahila Kissan HHs is reported to be the beneficiaries under Antyodaya Anna Yojana. About 4.16 percent of the households have Kisan Credit Cards. However 32.14 % households availed credits from institutional sources. The table below shows the socio-economic security status of sample households.

Table No: 3.3

Socio-economic security status of Sample Households

Partner NGO	BPL/ Ration Card holders	Voter Card holders	Kisan Credit Card holders	Availed institutional Credit
Madhayam Foundation	1292	1277	41	297
RCDC	1474	764	39	705
COFA	1446	1378	46	530
OPDSC	1367	1425	196	961
Harsha Trust	1294	1427	64	332
Pragati	1456	1429	27	363
Total	8330	7700	413	3187
Percentage	85.3	77.66	4.16	32.14

Source: Primary Data

Although the selected households are mostly poor, but still there are many households which can be clubbed as poorest of poor. The indicators for such households are - land less households, women headed households, widows, households with disabled members as head of the household and any other reasons for utter poverty.

3.1.4 Household Assets

Assets are divided into productive assets, household assets and tools/Implements. The household asset which is related to the primary occupation of the household is referred to as productive assets. Often times, these assets facilitate certain kinds of livelihood activities the households are engaged in. In the study area, the percentage of households holding productive

assets is very few. The Mahila Kissan households most frequently own essential productive items such as small tools and implements only.

Table No 3.4

Possession of Domestic Assets

Partner NGO Name	Cycle	Motor cycle	TV	Fan
Madhayam Foundation	1340	06	82	700
RCDC	1208	08	89	746
COFA	893	11	108	331
OPDSC	1368	14	112	487
Harsha Trust	1330	09	84	184
Pragati	1261	07	98	179
Grand Total	7400	55	573	2627
Percentage	75.80	0.5	5.8	26.91

(Source: Primary data)

Table No 3.5

Possession of Agriculture Assets

Partner NGO Name	Bullock cart	Bullock Plough	Pump set	Weeder
Madhayam Foundation	21	75	06	34
RCDC	33	112	12	0
COFA	49	158	05	0
OPDSC	147	169	12	0
Harsha Trust	231	132	14	35
Pragati	181	157	09	43
Grand Total	662	803	58	112
Percentage	6.78	8.2	0.5	1.15

(Source: Primary data)

3.1.5 House Types

The house types surveyed in the area are divided into three broad categories such as Kutcha, Pucca and semi-pucca. It was reported that amongst the total households surveyed, about 80 percent resided in Kachha and semi pucca houses with thatched, tin or asbestos roof, and only

about 2 percent reported that their house was of the Pucca category. Thus, it can be concluded that Kachha type of house is predominant in the area. This data seems to be consistent in relation to the predominance of BPL population in the study area. In terms of walls of the household, more than 90 percent household's walls are made of mud and raw bricks.

The following table shows the status of housing pattern in the sample villages. The data depicts that around 80 percent households stay in kutcha and semi pucca houses where every year they repair the house and incur some expenditure for the same. About two percent households have RCC houses which are safe and the annual maintenance expenditure is less.

Table No 3.6

Type of House in the sample villages

Partner	Thatched	Tin	Asbestos	RCC	No Roof	Others
Madhayam Foundation	687	241	470	0	131	122
RCDC	376	745	509	0	45	3
Chetna	338	114	229	191	286	497
OPDSC	1028	177	184	0	0	161
Harsha Trust	683	298	270	0	56	272
Pragati	776	325	455	0	0	94
Total	3888	1900	2117	191	518	1149
Percentage	39.8	19.5	21.7	2.0	5.3	11.7

Source: Primary data

Table No 3.7

Coverage of HHs in different Housing Schemes

Partner	IAY*		Mo Kudia		Own		Gopabandhu Yojana	
	HH	%	HH	%	HH	%	HH	%
Madhayam Foundation	401	24	176	11	1045	65	29	2
RCDC	403	24	96	6	1174	70	5	0
Chetna	343	21	214	13	1075	66	23	1
OPDSC	16	1	9	1	1525	98	0	0
Harsha Trust	394	25	81	5	1072	70	32	2
Pragati	430	26	257	16	937	58	26	2
Grand Total	1987		833		6828		115	
Percentage	20.35		8.53		69.94		1.18	

Source: Primary data

**IAY-Indira Awas Yojana*

In order to understand the profile of respondents covered in the study, certain other factors such as availability of drinking water and sanitation facilities was also studied.

In terms of availability of toilet facilities, it was noted that despite the numerous sanitation programs prevalent in the state, only about 5 percent of the total respondents reported to possess a toilet and the rest did not.

It was noted that public hand pump was the predominant source of drinking water amongst the respondents, as nearly 67 percent reported that it was their main source of drinking water. Public tap water was noted as the main source of drinking water by nearly 13 percent households. Amongst the other sources of water supply used were stream/river, protected dug well, hand-pump at home and unprotected dug wells.

3.1.6 Source of Fuel

Rural energy occupies centre-stage in rural development issues. Cooking energy has the major share in total household energy consumption. Accessibility and availability of cooking fuels at affordable prices is becoming more difficult day by day for poor people, many of whom are outside the modern energy system. The use of unprocessed bio-fuels for cooking is interlinked with many other factors such as socio economic conditions, availability of alternative fuels, cooking practices, health impacts and gender equality. In the study area, the most important sources of fuel energy for cooking is fire wood. The following table shows the sources of fuel wood in the study area.

Table no 3.8

Primary source of Fuel for Cooking

Types of fuel	MF	RCDC	COFA	OPDSC	Harsha Trust	Pragati	Grand Total	%
Leaves, straw,	0	0	0	5	35	0	40	0.41
Fire wood	1642	1469	1640	1284	1457	1459	8951	91.68
Cow dung	0	0	0	7	28	12	47	0.48
Kerosene oil	9	71	0	212	39	176	507	5.19
Electricity	0	43	1	28	15	0	87	0.89

(Source: Primary data Collection)

Around 0.41 percent households still depend upon the straw and leaves as primary source for cooking where as 91.7 percent depend on fire wood. Traditionally, it is assumed that clean fuels (other than cow dung, straw, leaves, crop residues etc) are not used by the poor people because they are not affordable because of high price and the low purchasing power of the

rural households. These straws, leaves and crop residues and dung are generally gathered from own fields and livestock. The use of coal, gas and Kerosene Oil is very minimal.

Mostly the households depend on multiple sources for cooking. However, 18 percent respondent opined that they depend only on one source for fuel, where as 77 percent of the households stated they depend on two sources for cooking. It has been observed that the source of fuel wood has a direct relationship with the income pattern. Most of the families (women and girl child) arrange the fuel wood from their own sources.

During the FGD with women, they expressed that gathering fuel-wood involves a lot of hardship in walking long distances and carrying head-loads of fuel-wood that cause health disorders and hazards among women and children. The results reveal that women undergo a lot of drudgery due to the use of bio-fuels. They walk approximately 2.5 km to collect fuel-wood. It has been observed during the primary data collection. The use of kerosene for cooking is negligible in the area.

Table No: 3.9

Drinking water and irrigation

Partner	No. of HH	Well	Tube Well	Bore well	Pond	River	LIP	Dug Well	Pipe Water
Madhayam Foundation	1651	57	1535	4	39	0	0	5	0
RCDC	1678	1125	415	0	0	0	0	0	140
Chetna	1655	1	1640	0	0	0	0	14	0
OPDSC	1550	87	1447	0	0	16	0	0	0
Harsha Trust	1579	56	1495	0	6	1	3	18	0
Pragati	1650	5	1526	15	14	42	5	43	0
Total	9763	1331	8058	19	59	59	8	80	140
In %		13.6	82.5	0.2	0.6	0.6	0.1	0.8	1.4

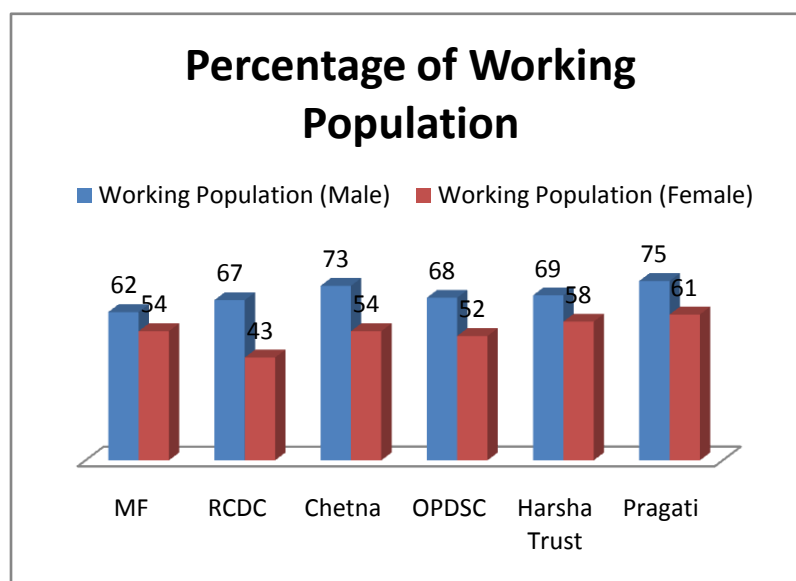
3.2 Economic profile of the Respondents

An attempt was made to understand various livelihoods activities that the respondents and their household members above age of 18 years are involved. Their days of involvement in the same was also calculated which in turn would give a detailed understanding of the nature of activities and nature of involvement of the household members covered in the study.

3.2.1 Working Population

Analysis of economic phenomenon is central to know the quality of life in any of the village. On the other hand, understanding the rural economy in the operational area requires comprehensive analytical treatment of elements and facets of the economic structure which constitute the framework of social life. However within our constraints, we have carried out a simple analysis of type of engagement, its source, variety, availability, extent of participation of women, skills, etc. The sources of livelihood in the study area are predominantly based on natural assets available inside and outside the village. Land and nonfarm based livelihood activities are the main source of income for majority of the households. Households with cultivable land are engaged in farming, while others are engaged in agriculture labour, NTFP collectors, nonfarm activities etc. Few families are also involved in livestock rearing and vegetable cultivation.

The following graph shows the partner wise employment status and its percentage in the study area. We have taken the percentage of the employed persons above 15 -50 years of age from the total population of the same age group as the employment rate. As a whole, 67 percentage of working population were engaged in income generating activities



and the percentage of female from the total female working population is only 57 percent where as the male is 69 percent. The engagement period varies from two months to ten months depending upon the type and source of occupation. It has been noticed that 22 percent children under the age group of 15 years were working as child labour in the study area which has not been included in the analysis. There is sufficient opportunity to enhance the economic participation of women in the study area.

3.2.2 Primary and Secondary Livelihood Activities

The following table provides a glimpse of the overall households' livelihood strategies in terms of the combination of current income generating activities employed by the household head (primary and secondary). For each, the first and second most contributing livelihood activities

are provided. The figures represent the total household and percentage of HHs engaged in the particular occupation.

Table no 3.10

Income Generating Activities of Households

Occupation Type	Primary Occupation	Percentage	Secondary Occupation	Percentage
Only Cultivation	993	10.02	0	0
Only Labour	2379	24.00	2081	20.99
Cultivation and Labour	3668	37.00	0	0.00
Petty business	892	9.00	99	1.00
Grocery Shop	198	2.00	0	0.00
NTFP dependant	297	3.00	4292	43.29
Small Ruminants	793	8.00	0	0.00
Traditional Craft	297	3.00	1215	12.26
Migration	397	4.00	1425	14.37
No Secondary Source	0	0	802	8.09
Total	9763	100 %	9763	100 %

Source: Primary data

The table points out to over dependence on agriculture and wage labour in the study area. A majority of respondents are having cultivable land either own or rented whereas second highest group of respondents depend on the wage labour on farm sector. Also a major portion of respondents who arrange their per capita income from the secondary sources prefer to work as non agricultural labour outside the village. A small segment of the population relies on traditional skill related work such as carpentry, pottery, petty business etc to eke out a living. This distribution is almost same cutting across geographical territory of the study area

3.2.3 Seasonality of Income

The seasonality analysis shows that while a large part of the activities are concentrated for a period of few months only, there are also activities that continue for the whole year. The engagement of households in these activities varies from village to village. The table below shows the source of income and its relationship with different seasons and month

Table No: 3.11**Seasonality of Income Source**

Source of Income	J	F	M	A	M	J	J	A	S	O	N	D
Agriculture												
Agricultural Labour												
Wage Labour outside village												
Small ruminants selling												
NTFP Selling												
Seasonal Migration												
Selling of Fuel wood												
NREGS work												
Traditional Artisan(rope making, pottery, black smith, bamboo basket making etc)												
Petty Business (Glossary Shop)												
Vegetable vending												

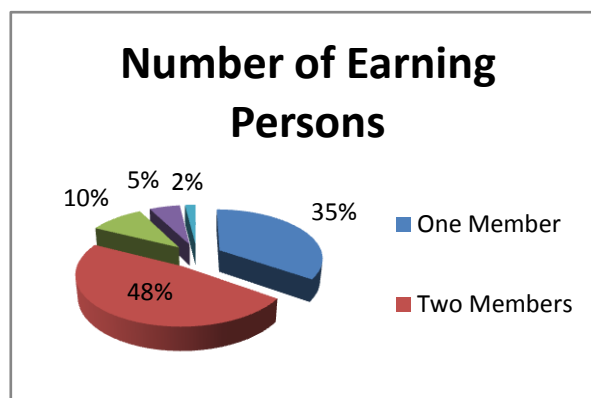
Note: Columns represent for month

Source: Primary data through FGD

The seasonality of engagement points out that barring petty business all other activities are season based. However, in the context of wage labour, community is engaged for the whole year but it is very uncertain. While farming is largely confined from June to December, NTFP collection ranges from Apr-Sept. Migrant labour finds place from January to June and then Sept- December. The seasonality of engagement also differs from village to village. In villages where there is forest coverage seasonal engagement is different from other villages.

3.2.4 Earning members per households

Out of total productive population, 63 percentages are engaged in different source of livelihoods. The graph describes the persons engaged per household in the study area. On an average 35 % of total households have only one earning member and 48 % of the households have two members to feed the family. Only 2 percent % households have



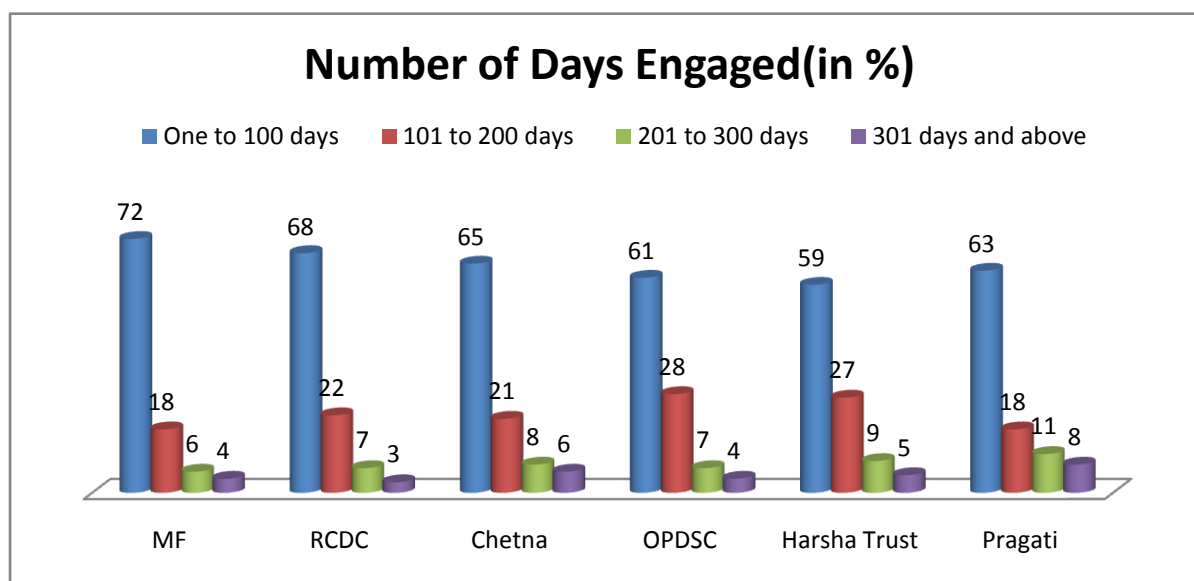
above five earning members in their families.

3.2.5 Women and Occupation

As the area is tribal dominated, cash earning in the study area was shared by both male and female, 52 percent of the earning persons were male and only 48 percent were female from the total working population (18-59 age group). However, the percentage of skilled worker among female is very less than the male counterpart. Female work force is deployed in unskilled categories such as agriculture, gathering fuel wood and collecting water. Women did not figure at all in high skilled work. In moderately skilled work the share of women was very less as the traditional skill is generally acquired by the male. Even in this category their skills were confined to tailoring only. The statistics highlights the disadvantaged position of women in the field of employment. It has been observed during the FGD with women, they revealed that the men restrict their movement of work inside the village only. Only two types of activities performed by women have been labelled as agricultural in nature namely agricultural daily wage labour (wage earning) and agricultural work in own field (non- wage earning). On further analysis of this data, it was not surprising to find that the majority of the respondents from all six partner area were involved in doing agricultural work in their own field.

Women remain responsible for most of the household tasks and work long hours. Most women mention that they spend 10 to 15 hours on household chores such as fuel source gathering (wood, cow dung) and water collection, child rearing, house cleaning, house repair, etc. While the work activity of men is generally “cash earning”, women’s work is “cost saving” to a great extent. Rigidity in occupational pattern is gradually diminishing. Because of poverty, low rate of return, competition and demand diversification, people are increasingly taking up multiple activities for livelihood.

Figure below shows that most of the working population are engaged in wage earning activities surveyed in the six partner operational villages. Only five percent households reported that they were involved in work for 301-365 days, around 8 percent were involved for more than 200 and less than 300 days in last year. However a significant composition (85 %) of people surveyed also reported that they were involved in wage earning activities for less than 200 days. The following graph shows the partner wise picture of the operational villages.



Respondents believed that agriculture is the predominant occupation practiced by majority of the population in the state and its practice is not influenced by caste or communities, however the only factor that emerged in was that, this occupation is practiced only if the population has their own land, otherwise they become non-farm labourers or get involved in other occupation. Collection of forest produce like Mahua, Tendu, etc. also emerged as an occupation in almost all the partner area.

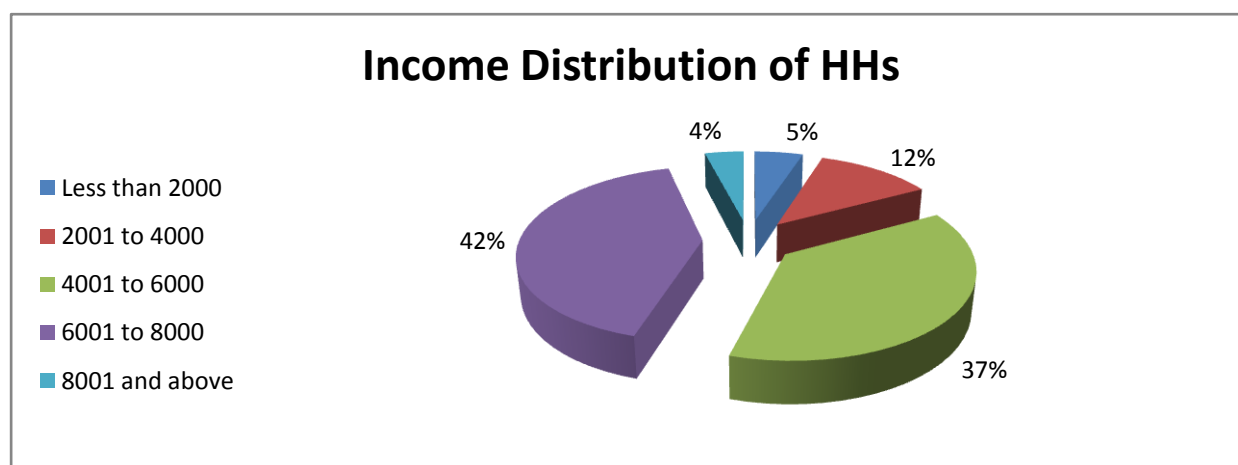
3.2.6 Level of Satisfaction amongst working women

An attempt was also made to understand whether the working women were satisfied with the activities performed by them and it was noted that nearly 52 percent women reported that they were satisfied and about 40 percent women reported that they were not satisfied (the remaining 8 percent could neither describe themselves as satisfied or not satisfied).

On further examining the data collected to assess the level of satisfaction amongst women involved in wage generating activities, it is found women engaged as agricultural daily wage labour had split opinions regarding their job, the number of women satisfied (44.8 percent) were almost similar with the number of women not-satisfied with their jobs (43.2 percent). However there is a significant difference when the same figures for non-agriculture daily wage labour as measured, here the percent of women satisfied (33.9) is outweighed by those who are not (43.6 percent). The major reason why the women were not satisfied with their wage generating job of working as an agricultural daily wage labour was because 59.3 percent of them felt that they were not paid well, some also felt that they did not receive timely payment hence they were not satisfied.

3.2.7 Income Pattern

The total income of a household consists of income from various sources such as agriculture, livestock rearing, wage labour, vegetable growing, small business etc. The average monthly income of household was approximately Rs. 3700 with average family size of 5.2 members. The main components of income sources are farm and nonfarm labor. The rest are involved in activities such as masonry, shops, vegetable vending, carpentry, NTFP, etc. The annual income from agriculture depends on land holding size, productivity (depends on irrigated or un-irrigated land), no of crops taken during the year and the type of crops cultivated. The net income from each crop is a function of yield, input cost and the minimum support/intermediary prices for the produce. Certain crop such as paddy has lower margin because of higher input cost. The following graph shows the income pattern in the community.



3.2.8 Expenditure Pattern

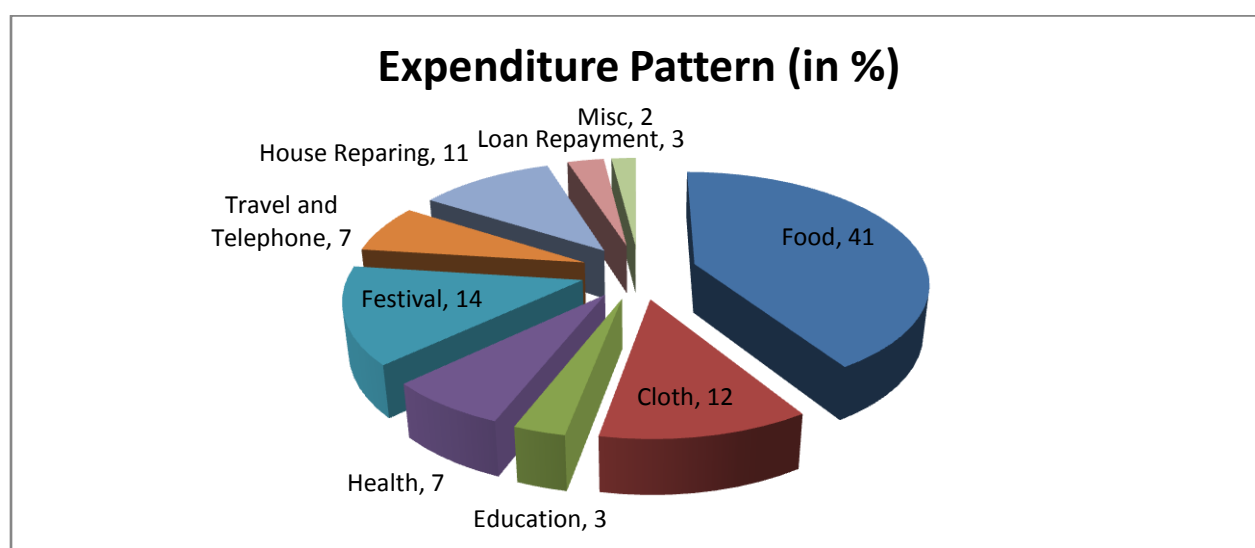
This section on expenditure is an indication of priorities and needs measured by investment of cash by households during the past twelve months. Apart from food in general, the areas that received the most attention were clothes, festivals, health, loan repayment and shelter. Some of the lowest priority areas were the investment on education, animal husbandry and agriculture.

According to the national sample survey, the monthly per capita expenditure in rural areas is Rs 818 as against Rs 1548 recorded for urban areas. An average person in rural Orissa spends Rs 507 (around 62 per cent) per month on food. In case of urban areas the monthly expenditure per person stood at Rs 749 (48.4 per cent). "Higher percentage of expenditure on food indicates a lower standard of living," said Dr Almas Ali, a member of the Central steering committee on health for the 12th Five Year Plan (2012-2017).⁴

⁴ <http://timesofindia.indiatimes.com/city/bhubaneswar/Orissas-per-capita-spending-among-lowest-in-the->

The study area situation is no way exception than the NSS survey data. The pattern of annual expenditure is presented in the following graph. Clearly, majority of the households are at a level of sustenance and just have enough for food and basic necessities. Comparison of annual income and expenditure reveals that very less surplus is available for saving. The poor saving is indicative of higher vulnerability and very slow growth of capital formation at the household level. It was interesting to find that the top most priority has been given to the food and festival, which has incidentally been established as the main cause of migration in this region. In addition to this it is revealing that 12 percent of the total annual income is spent on maintaining and repairing of the houses. This establishes the fact that the communities have been spending lot of money in maintaining their houses, as they have mostly thatched houses.

Expenditure Pattern of Household



Source: Primary data

Across all categories, the major portion of the income goes to consumption. First priority is given to buying food for the family. Households spend money for many other common needs and activities such as house reconstruction/repairing, cloths, fuel i.e. firewood or Kerosene, children's education, medical treatment, transportation to work, telephone etc. The graph shows that apart from food, spending on health is also significant. This is also consistent with the information in health section where all households reported illness as the most common shock. Given that the body is an essential tool for poor people's livelihoods it is understandable that they do invest in the health care. After health, households spend most (12 %) on house repairing, followed by festivals (11%). They spend for giving gifts to others on the occasion of puja, marriage, and celebration in different festivals.

3.3 Household Economy

People live from hand to mouth in the study area, running into debt in financially exacting situations. A significant 64 percent of the households had saved nothing whereas most of them incurred loans. When asked how they managed when they are laid off work, 29 percent of the respondents said they made small borrowing from friends and neighbor. Another 17 percent borrowed from shopkeepers, mostly in kind and sometimes in cash. Another 18 percent said they borrow from the land owner and middlemen to sustain their livelihoods.

3.3.1 Savings

Among all sampled households, only 36 percent households have small savings. The table provides the percent of households with savings.

Table no 3.12

Saving Behaviour

Partner NGOs	Account or Membership in Percentage				
	SHG	Cooperative	Post Office	Bank	Others
Madhayam Foundation	780	2	0	45	1390
RCDC	802	0	0	289	988
COFA	628	0	0	59	1282
OPDSC	818	240	63	282	556
Harsha Trust	1074	0	28	247	767
Pragati	632	4	6	54	1270
Grand Total	4734	246	97	976	6253
Percentage	48.4	2.52	0.99	10.00	64.05

Source: Primary data

Only 13.5 percent of the households surveyed are having account in banks, post office or cooperatives. Whereas SHGs play a vital role in rural savings The group membership promotes collective action. Regular savings provide momentum both to the groups and individuals. It acts as the fuel for the purpose of providing driving force to the groups. However it is seen that savings from the group activity are limited and it is confined to Rs 20 - Rs 40/-per month per households which is not adequate to initiate the group venture or the individual enterprise.

3.3.2 Loans and Borrowing

Of all households sampled, only 121 households have or had a loan or borrowed money in the past twelve months from bank. The average loan per household is around Rs 6000.00. The most common source of loan is money lenders. The following table depicts the details of the loan

status among the sample households. Sources of loans also varied from village to village and across the different category of households. Usually poor households tend to take loans more often from moneylenders and relatives, while non poor households rely more on banks, cooperatives and government schemes.

Table no 3.13

Debt Trap (Nos of HHs)

Extent of Debt	MF	RCDC	COFA	OPDSC	Harsha Trust	Pragati	Total	% of HH
Less than 5000	85	0	0	322	48	161	616	6.3
Rs 5000-10000	416	587	36	794	158	471	2462	25.2
Rs 10000-20000	525	482	542	335	1037	649	3570	36.6
Rs 20001-50000	624	592	1074	83	324	345	3042	31.2
Above 50000	1	17	3	16	12	24	73	0.7

Source: Primary data

Purchasing seeds, sowing/weeding, purchasing fertilizer, medical treatment, festivals and social customs are some of the purposes for availing loans. Besides economic condition, occupation type also influences the use of a loan. As expected, agricultural production households used loans primarily for investments in farming. Business households most frequently borrowed money and used these loans for off farm investments. Households' involvement in income generating activities is strongly associated with membership in SHG. In the lean period when there are no employment opportunities available, households spend available savings and credit on food. The data suggests that households take credit from multiple sources to manage the installments rotationally and end up being in revolving debt. It is clear that the rate of informal lending is much higher than the formal lending.

Chapter -IV

Livelihood Scenario

This chapter discusses the utilization of resources particularly the land (land ownership, agricultural practices, main crops, techniques adopted, etc), NTFP and Livestock. As discussed earlier, the sources of livelihood in the study area are predominantly based on natural assets available in the villages. Land based livelihood activities are the main source of income for majority of the households. Households with cultivable land are engaged in farming, while others are engaged in agriculture labour thus indirectly thriving on agriculture. Most of the families are also involved in wage labour locally in the absence of all weather agricultural income opportunity. Livestock rearing, NTFP collection and vegetable cultivation are being carried out in albeit, in a less significant way.

4.1 Livelihoods

Though villages in all regions pursue agriculture as the primary occupation but the secondary occupation is found to be different which is mostly influenced by the local natural resources and other livelihood support avenues prevailing in this area. The study revealed that the livelihood opportunities of the communities has been showing clear downward trend. Both tribal and non tribal have been facing many problems in getting reasonable returns from their agriculture because of increasing pressure on the land with the growth of population, erratic rains, lack of irrigation facilities, lack of market facilities, un fair market practices etc. Similar kind of reasons along with the depletion of forests, has contributed to diminishing income from forest produce. More people are being forced to wage labour in search of livelihood inside the block as well as migrated to outside of the villages. In almost all the communities opined the non functionality of MGNREGS in their village. Apart from the agriculture in some communities animal husbandry is also a source of livelihood. Due to lack of fodder and health facilities for the animals, this sector is also showing a down ward trend in terms of productivity.

4.2 Agriculture

Paddy is the main crop in the operational villages, apart from paddy, cereals like maize, kodo-kutki and other small millets, pulses like tur and kulthi and oilseeds like groundnut, niger and sunflower are also grown. Despite accelerating growth rates in food grain as well as non- food grain production, the status of agriculture in the operational area is not comparable to other areas of the states in terms of agriculture production. However, it has been observed that over the years there is a shift from the traditional agriculture practices in the area. Among the cereal crops, paddy followed by maize showed relatively high growth rates. In some villages, summer and winter paddy cultivation was observed in selected patches of area. Among pulses,

production of arhar and gram witnessed reversal largely due to area shrinkage. The acreage under the minor millet (Mandia, Gurji, Jowar, Bajra, Koda, etc) has been reduced to a great extent.

4.3 Land Classification

The village settlement for dwelling and agriculture has expanded over a period of time through clearance of forest. Almost all the land in the area is uneven, undulated and sloppy. The total village area can be classified in four categories i.e. upland, middle land, low land and Bari (homestead) land. Due to lack of protection measures and maintenance of upland, soil erosion becomes acute every year.

All four districts covered under the baseline study falls in the undivided Koraput district which is known for its hilly terrain. As per the government record of undivided Korpaut district, 57 percent of the total cultivated area belong to upland category followed by Midlands at 24 percent and Lowlands at 19 percent. The baseline survey area land classification is more or less falls in this type of land classification where more than 50 percent of the cultivated area is under the category of upland where there is no irrigation facilities available.

4.4 Size of Holdings

The size of holding also determines the class and category of farmers. The tribal society is known for homogenous nature on this front as most of these have been allotted land pattas under government schemes. Out of the total households, 13 percent HH possess more than 3 acres of land, though most of the lands are unproductive. 35 percent households are categorized as small farmers who possess 1-3 acres of land. This clarifies that a major group of households, i.e. about 48 percent HH are marginal farmers having land holding less than 1 acre of land. Increased family sizes have also resulted in land fragmentation. The detail of land division is given in the following table. All the households have the cultivable land. However, few of the households possess the low land where the production of crop is assured. In the upland the farmers prefer to cultivate kolthi, arhar, etc as it requires less water. However, it has been observed that in the process of modernization, farmers are not opting for the cultivation of minor millet rather prefers to cultivate paddy even in the up land. The cultivation is only restricted in rainy season as there is no provision of irrigation facilities in the village. In the winter season, few farmers cultivate vegetables for the domestic use and selling purpose.

Table No: 4.1**Size of Land Holding**

Partner	HHs	Land less HH	Less than 1 Acre	1 to 3 Acre	More than 3 Acre
Madhayam Foundation	1651	121	749.7	566.1	214.2
RCDC	1678	87	843.23	604.58	143.19
COFA	1655	101	854.7	528.36	170.94
OPDSC	1550	77	721.77	545.01	206.22
Harsha Trust	1579	92	728.63	550.19	208.18
Pragati	1650	69	774.69	584.97	221.34
Total	9763	547	4672.72	3379.21	1164.07
Percentage	100	5.60	47.86	34.61	11.92

Source: Primary data

4.5 Area under cultivation

This is an important parameter the result of which when compared with terminal year will show the impact of the project. The table below shows the area under cultivation classified under irrigated and un-irrigated.

Table No: 4.2**Area under cultivation (In Acre)**

Partner	Kharif Irrigated area	Un-irrigated area
Madhayam Foundation	886	1835
RCDC	902	1300
Chetna	836	1481
OPDSC	819.45	2056.55
Harsha Trust	781.64	409.36
Pragati	886.02	1926.98
Total	5111.11	9008.89

Source: Primary data

The above table clearly shows that irrigation wise the sample villages are backward. Even if the participation of women cultivators is made more intensive, the effort will not yield much so long as irrigation facilities are not enhanced.

4.6 Agricultural Practices

The farming situation in the study area is highly influenced by quantity and distribution of the rainfall. The differences in the farming situation are also due to variations in the soil moisture status in different land types. The Kharif months (Mid-June to Mid Sept) are seen with a range of crops like paddy, millet, arhar, maize and vegetables. Kharif months are followed by pulses, maize, mustard, gram and vegetables. It was reported by the community during the FGD that wherever adequate water facility is available, the farmers are able to cultivate even in summer season. But very few households take risk to cultivate in summer season apart from vegetables for household consumption. The detail of the cropping pattern is discussed in the following paragraphs.

The major cultivable land is devoted to paddy, vegetables and maize. Three major factors - soil and land types, availability of water and economic rate of return are the dominant reasons for a preferred cropping pattern. The productivity of various crops varies from district to district.

4.6.1 Khariff Crop Cultivation

The analysis shows that average area under Kharif crop is far more than that of Rabi crop. Community prefers Khariff crop due to less risk. However, it was stated by the community that, the expenditure is high in the Rabi crop than the Khariff crop. Of all the sample households, 100% opined that they cultivate paddy in the Khariff season. The decision to cultivate paddy is influenced by food, availability of work, and the ecological area. Generally, the percentage of paddy cultivating households among the poor households is more compared to others. However, it has been stated by community during the FGD that the acreage of paddy cultivation drops due to the uncertainty of rainfall, less productivity and introduction of other crops. The Khariff crop yield brings out to the front that, most of the households yield between 8-10 quintals of paddy per acre. The comparative analysis also showed that only a few of the households engaged in production could sell paddy. This points out to the fact that either they don't have sufficient paddy to sell or to store for future consumption. With earlier analysis pointing out that most of the households are having food for less than 8 months, this is evident that most of the productions are used for consumption purpose.

Table No: 4.3

Type of Kharif crops practiced by HHs

Partner NGO	Paddy	Millet	Arhar	Niger	Maize
Madhayam Foundation	1597	438	356	413	567
RCDC	1663	376	314	381	489
COFA	1641	523	471	623	634

OPDSC	1678	612	265	589	713
Harsha Trust	1489	476	289	434	768
Pragati	1641	453	378	413	453
Total HH	9709	2878	2073	2853	3624
Percentage	97.93	29.03	20.91	28.78	36.55

Multiple Response Table

The Khariff crop yield brings out to the front that, most of the households yield between 8 to 10 Quintals of paddy per acre. However some of the community members opined that the production of paddy in upland depends on the availability of water during the flowering stage. Some time they get 8-10 quintals and sometimes it is less than 2 quintals per acre. The households yielding more than 25 quintals of productions from Kharif crop is insignificant. The following table shows the average production of different crop during the Khariff Season in different category of land.

Table No 4.4

Average Production of Khariff Crop

Crop	Up Land	Medium Land	Low Land
Paddy	2-4 Quintals	8-10 Quintals	12-15 Quintals
Millet	40-60 Kg	60-100kg	0
Arhar	1-2 Quintals	1.5 -2 Quintals	0
Niger	40-60 Kg	60-100kg	0
Maize	1-2 Quintals	1-3 Quintals	0

4.6.2 Rabi Crop Cultivation

The Rabi crop is given a primary importance in the study area. The analysis points out that almost all the households (those who have access to arable land) cultivate crops in their land. However, some of the community expressed that late recede of flood water and excessive presence of aquatic weeds delay the cultivation of Rabi crops. The productivity of the Rabi crops is also very good as opined by the community members. During the Rabi they cultivate pulses, maize, potato, mustard, onion and vegetables. Comparatively, farmers prefer pulses in large scale due to less labour, less water and more return. Senior citizens of the study area opined that pules are now being replaced with vegetable cultivation. Both traditional and improved seeds are used in the study area. Percentage share of area under improved seeds is comparatively higher than the traditional variety. This shows that the interest of the community towards the use of hybrid seeds. It has been expressed by the community that now more and more people are interested for the cultivation of cash crops than the cereals.

Table No 4.5

Households into cultivation of Rabi Crop

Partner NGO	Paddy	Millet	Niger	Maize
Madhayam Foundation	213	78	121	234
RCDC	164	113	102	336
Chetna	276	112	245	276
OPDSC	167	132	98	451
Harsha Trust	154	79	137	398
Pragati	223	117	196	337
Total	1197	631	899	2032
Percentage	12.07	6.36	9.07	20.50

4.6.3 Vegetable Cultivation

Vegetable cultivation is practiced by three-quarters of the households in the overall sample. Of these, 66% reported growing one or more kind of vegetable in homestead lands or on part of their cultivated land. The number of households growing vegetables is very significant. The following table gives the % of households producing vegetables.

Table no: 4.6

Vegetables Cultivation in the study area: At a Glance

Sl	Vegetable Variety	Coverage	Use of yield (Consumption/Selling)	Observation/Community Opinion
1	Parbal	Very Low	Selling	Mostly cultivated by the Malkangiri farmers who have prior experience
2	Cabbage	Medium	Selling	Few households cultivate the crop those who have labour force in the household as well as access to credit
3	Cauliflower	Medium	Selling	
4	Potato	High	Consumption/ Selling	Most of the household are cultivating to address the consumption need as well as selling
5	Onion	Low	Selling	The households having some land with assured irrigation source are engaged.
6	Tomato	High	Selling	The households having some land

7	Brinjal	Medium	Selling	with assured irrigation source are engaged.
8	Beans	Low	Selling	
9	Radish	High	Both	Most of the household do the same as the investment is very low.
10	Pumpkin	High	Consumption	Grown in backyard for household consumption
11	Lady Finger	Medium	Both	Most of the family cultivate in homestead and kitchen garden mainly for consumption.
13	Greenleaf	Medium	Both	
14	Bitter gourd	Medium	Selling	Most of the family cultivate in homestead and kitchen garden for consumption as well as selling
15	Cucumber	low	Selling	

(Source: This information obtained through FGD with senior citizens as well as the farmers of study area and compiled in the framework presented)

The above table is meant to provide an idea of the varieties of vegetables grown. The major vegetables in the area include onion, brinjal, okra, runner bean, cow pea, various gourds, tomato and radish etc. Households having sound financial backup and attitude are engaged in vegetable production. Although households engaged in vegetable production are following traditional practices, fencing and using timber and fruit trees for climbing vegetable plants is becoming a popular practice. The most commonly used inputs for vegetable cultivation are organic fertilizers, pesticides and chemical fertilizers. By contrast, botanical pesticides and green manure are now used by the framers. However, Cow dung is comprehensively used as manure in selected households.

4.7 Adoption of Agriculture Techniques

The study points out different types of agricultural techniques are used by the farmers across the operational villages. Few of the common types such as crop planning, good quality seed, soil testing, seed sorting, seed treatment, use of vermin composting, tillage before monsoon etc. are widely known and practiced. Even though there are regional variations to the degree to which the techniques are practiced, yet most of these are common and are in place since long. Similarly, soil testing, seed treatment are least prioritized whereby seed sorting are of significant importance. In all the four districts around 73 percent HHs opined that they have adopted more than two new techniques for their cultivation. The following table elaborates different techniques adopted by farmers in four districts.

Table No 4.7**HHs Adoption of Farm Techniques (in % of total HHs)**

Indicators	MF	RCDC	COFA	OPDSC	Harsha Trust	Pragati
Crop planning	3	2	3	3	2	1
Soil Treatment	5	6	7	6	7	5
Seed Treatment	44	46	35	38	49	41
Conservation of Seeds	61	59	64	73	58	63
Bio Manure (Handi Khata)	23	24	29	21	28	26

Source: Primary Data

4.7.1 Crop Planning

Crop planning means what, when, where and which plant to grow in relation to their requirement for space, sunshine, water, maturation, season of planting and tolerance for each other etc. It involves a cropping pattern in which different categories of vegetables are raised, followed by system of crop rotation to keep the cycle going and to provide a suitable, healthy environment for plants to grow. From the table it is clear that around 2.33% HHs follow crop planning in the operational villages.

4.7.2 Land Preparation

Land preparation is the first activity that a farmer does with respect to agriculture. Land preparation generally includes land levelling, weeding, applying manure, harvesting, etc. With regards to leveling of land most of the community opined that they use traditional equipment for ploughing and land leveling. In some villages, community opined that they use tractor and modern equipments for land preparation and leveling. However the percentage is very insignificant as high cost is involved to hire the tractor in the operational villages.

4.7.3 Seed Selection

With respect to seed selection, it was noted that High yield varieties of seeds were popular amongst the farmers. Hybrid varieties were not widely used, but a few households mentioned its use for the crops of Paddy and Maize. Use of traditional seeds was widely noted for the crops of Maize, Niger, Millet, Black Gram and Paddy.

Table No 4.8**Use of Type of Seeds (in Percentage)**

Seed Type	MF	RCDC	Chetna	OPDSC	Harsha Trust	Pragati
High Yield Variety	35.7	38.5	37.6	13.0	9.3	35.3
Hybrid Variety	6.4	13.6	0.4	3.1	14.7	3.1
Traditional Variety	57.9	48.0	62.0	83.9	76.0	62.6

Source: Primary Data

Further analysis of household interviews indicated that, the variety of seeds popular across crop categories emerged to be traditional. It would be interesting to see the kind of seed varieties used by farmers across four districts, which in turn would give an idea about the amount of agricultural produce, and subsequently the amount of income earned from selling that agricultural produce. Hybrid varieties of seeds are popular among the households those who have close proximity to urban set up whereas traditional varieties of seeds seems to be popular among all the villages.

In terms of procurement of seeds, the trend emerged to be similar amongst all crop categories except for Cotton. It was observed that for Maize, Niger and Paddy the use of seeds from the last yield was popular and was reported by more than 45 percent respondents. The following table shows the source of seed in different partner's operational villages.

Table No 4.9**Sources of Seed Procurement (in HHs)**

Source	MF	RCDC	Chetna	OPDSC	Harsha Trust	Pragati	Total	Percentage
Market	211	272	199	381	331	419	1813	18.57
Cooperative society	87	57	61	89	74	65	433	4.44
NGO	31	49	53	38	69	58	298	3.05
Own	876	1072	1122	972	882	1001	5925	60.69
Relatives/ Neighbour	67	51	49	46	71	47	331	3.39
Department of Agriculture	49	42	39	32	38	36	236	2.42

Source: Primary Data

4.7.4 Nursery Raising and Transplantation

Analysis of nursery raising and transplantation based on the findings from Group Discussions, it was observed that nursery was raised for paddy and vegetables in all districts. Further, it was observed that for all the other crops seeds are sown in rows. Here the land is drilled properly to maintain moisture and heat.

4.7.5 Weeding

As mentioned earlier, based on FGD findings, weeding was done manually across all crop categories in all districts. Mechanical weeding is done in case of line transplanting of paddy and SRI only.

4.7.6 Fertilizer/ Pesticides Application

The primary data reveals that majority of respondents depend on market in case of purchasing fertilizers and pesticides. The following paragraphs exhibit the source and usages of seeds, fertilizers and pesticides in the operational villages.

4.7.7 Fertilizer and Manure

In agriculture, application of fertilizers and manure plays a very important role in the quality and quantity of the produce obtained, hence it is essential to understand the practices of the respondents with this respect. Almost all the respondents reported that they are using organics and botanicals for all the crops they grow. Here, the respondents were asked about the fertilizers that they used for any of the crops that they cultivate. The results obtained indicated that nearly 89 percent respondents used straight fertilizers, about 11 percent respondents used complex fertilizers and only handful respondents practiced the use of micronutrients. Here, it is important to realize whether the farmers actually understand the combination of the fertilizers that they are using and whether they are applying these at the right time and in right quantity.

In terms of use of organic manure, it was observed that this practice was prevalent only amongst quite a few respondents. With respect to place of procurement of these fertilizers, nearly 81 percent respondents reported that they procured it from the markets and the rest reported to procure it from the Cooperative Societies.

4.7.8 Use of Chemical Pesticide

An attempt was made to understand the practices with respect to the use of pesticides amongst the household sample studied. The results obtained indicated that across the crops Paddy, Arhar and Vegetable, the use of insecticides seemed to be popular. Out of total farmers,

81 percent farmers said that they use chemical fertilizer. Main fertilizer is urea and DAP. Some of the farmers said that they use pesticides at the most critical situation.

4.7.9 Harvest

An attempt was made to study the machinery that is used by the respondents to harvest their yield, which would in turn help to comprehend the penetration of technology with respect to agriculture amongst the sample covered. Sickle was found to be the pre-dominant machinery used for the purpose of harvesting as reported by about 93 percent respondents. Participants in the Focus Group Discussions also mentioned that harvesting was done manually across all crop categories in all the districts studied.

4.7.10 Threshing

In the FGD, it was noticed that in all the districts threshing was done manually however, in some villages thresher machines were used.

4.7.11 Storage

Storage also contributes to be an essential component of agriculture as it is one element which if executed properly may fix a good price for the yield. The respondents were quizzed about whether they stored the crop that they produced or directly transported it after the harvest. Here, it was noted that majority, nearly 89 percent respondents reported that they did not store their crop and the rest reported otherwise. With reference to the enquiry on where exactly did they store the crop, nearly 90 percent respondents, of those who store the crop, reported that they stored it inside their house.

Table no: 4.10

Trend in Agricultural Practices

Factors	Trend	Reason
Crops		
Paddy	Constant	Assured production, less risk and food habit
Arhar	Negative	Non Availability of timely rain, moisture stress, low productivity, govt provision of pulses
Til/Niger	Constant	Low investment, low irrigation, high consumption need
Gram and Kulthi	Negative	Change in food habit, availability of subsidized food stuffs, alternative crops
Vegetable	Positive	Change in food pattern, High cash in hand, Low duration, exposure to outside and market,

Technique		
SRI/Line sowing	Positive	High yield, presence of IFAD, demonstration by Govt
Broadcasting	Negative	Low productivity, high expenses during grass cleaning
Seed		
Traditional	Negative	Low productivity, lack of knowledge on preservation and multiplication,
HYV & Hybrid	Positive	High productivity,
Fertilizer & Pesticides		
Use of Cow dung	Negative	Low animal holding, replace as fuel wood
Chemical Fertilizer	Positive	More requirement for HYV & Hybrid variety, Easy availability in market
Pesticide attack	Increasing	More frequent attack of pesticides

Source: Primary Data

4.8 Seasonality Analysis

Seasonality analysis also called as seasonal calendar represents various activities happened in a year. By this tool we try to bring the engagement pattern of people in the operational villages.

Table No 4.11

Cropping Seasonality and their engagement

Crop Items	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Pulses												
Paddy												
Vegetables												

Source: Primary data through FGD

In most of the cases, families highlight that they do not get adequate job throughout the year. They are absorbed for a maximum period of six months in the agricultural set up in and around the village. The seasonality of cropping depicts that farming is largely confined from June to March and few households are engaged in NTFP collection from January-June.

4.9 Status of Minor Forest Produce Collection

The region has abundance of minor forest produce and tribal are known to meet a part of their income through the forest produce. Among all the communities, the Tribal community is more dependent on the forest than the other communities. However, due to change in the weather parameters, NTFP collection has been reduced. As per the community this year the production of *Mahua* is less due to untimely rainfall in the month of April and May. When they have less collection of NTFP, they prefer to migrate outside the village in search of livelihood.

4.10. Income from NTFP

Collection of Non Timber Forest Produce (NTFPs) is a major source of income for the families in the village. In addition to agriculture, residents are also dependent on surrounding forests. Minor forest produce is extracted both for household consumption as well as for the market economy, some of which have a considerably high market value. While we were unable to gather details about the agrarian economy, the table below presents information about forest products extracted by residents and their market value.

Table no: 4.12

Local Market Prices for Non-Timber Forest Produce

Name of NTFP	Local price during harvest season (per Kg)	Local price (Per Kg) during off season
Mahua Flower	Rs 10	Rs 25
Mahua Seed (Dori)	Rs 12	Rs 18
Char Seed	Rs 40	NA
Sal Seed	Rs 18	--
Bahada	Rs 5	Rs 6
Amla	Rs 6	Rs 8
Myrrh (gum resin from sal tree)	Rs 80-100	Rs 80-100

Source: Primary data through FGD

The revenue generated from NTFP provides the family with supplementary income and employment for 1-3 months per annum. The respondents stated that they are engaged in the collection, processing as well as marketing of the NTFP produces such as Chara, Mahua, medicinal herbs, different kinds of shoots, roots, Sal leaves, and Sal seeds. People usually collect these NTFP from the month of December to June every year and sell it to middlemen at a price much below the anticipated or market price. They prefer to sell to the middle men instead of government as they take advance from them before the NTFP collection. Due to lack of marketing and storage facilities, the collector hardly has the option to preserve it and bargain

for a better retail price. However, NTFP production is gradually decreasing due to destruction of forest cover and growing pressure on the forest to support an ever-growing population volume.

Table no: 4.13

Type of NTFP collected and utilized by the community

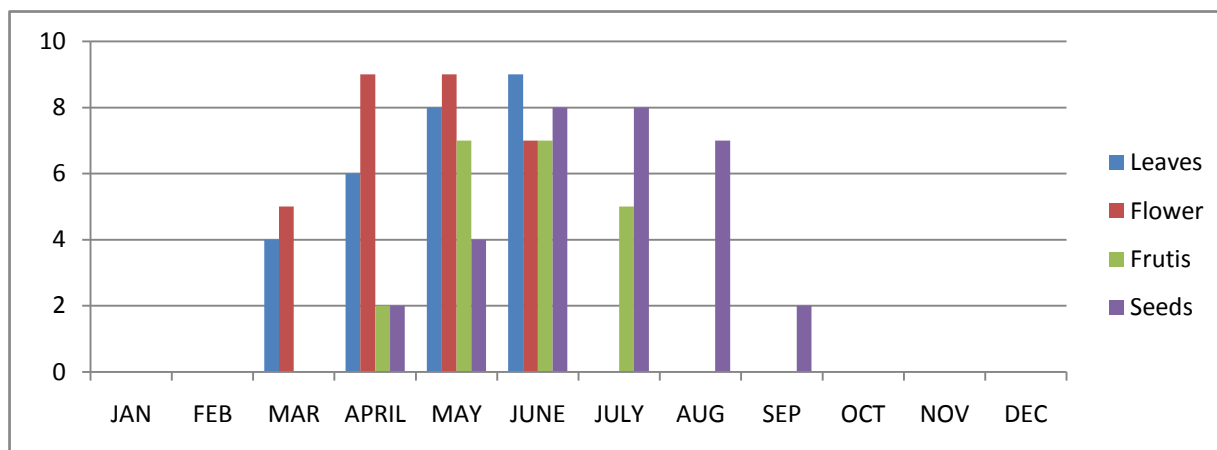
Types	Collected by	Utilization	Value addition
Tuber/shoot /root	Both Male and Female	Consumption	Some roots they dry and keep for summer season
Leaves/grass	Mainly Collected By Female	Selling	Drying and Grading
Flower	Collected By Female, Male(some time) , aged persons and children	Female sell in market, both Mahua & Mushroom	Drying of Mahua Flower
Fruits	Both by Male, Female, Senior Citizen & Also Children	Consumption, Selling	Processing, Grading
Seeds	Collected By Female	Selling	Drying and processing dori and kusum for Oil
Medicinal	Collected By Female	Selling	Drying

Source: Primary data through FGD

4.10.1 Seasonality of NTFP

The present situation reflects that all the major NTFPs are available around one to three months except for grass, stem and Bark. The tubers are available round the year. From October to April the shoots are found while from April to September the roots are available. All these products are consumed by the households. Tendu leaves are available from February to June; the peak period is April and May. Mahua flower and mushroom are found during the spring and rainy season respectively. More collection of Mahua takes place in April and May where as in case of mushroom it is month of September. During March to October the fruits and seeds are collected by the community members. Non-availability of employment opportunities has increased dependency on NTFP. However its production has decreased. The table below shows the seasonality analysis in terms of availability of NTFP during a year.

Month wise availability of Major NTFP



Note: Scale refers to availability and engagement of HHs for collection of NTFP

4.10.2 Marketing Mechanism of NTFP

It is a fact that activities undertaken by primary collectors are not able to provide adequate income because of limited accessibility to markets. It is clear that community in the forest fringe villages have started these activities as they possess traditional skill base and have access to the resource base. The individual selling mechanism and small surplus restricts them access to remunerative markets which requires tradable quantity. With poor marketing infrastructure and lack of access to storage facilities they are compelled to sell off their produce to local traders, market/hat or to the middleman. Generally their produce hits the market during the peak season whereby in a competitive market situation getting a better price becomes increasingly difficult. There are possibilities of increasing trading period at the community level to gain from the increase in price during the lean season.

As the community shared, they sell the NTFP products in the weekly market/hat, local traders, middleman inside the village, middleman outside the village and in SHG. In the weekly market/hat they sell as per their traditional measurement. No weighing of goods is done. In return they buy household items and ration from the market. They take their products to the local trader nearest to the village and sell. Here sometimes they measure in weighing machine. Middleman from outside the village comes to the village and takes the product without any measurement. In case of middleman inside the village same story repeats. At the society they sell in measurement of goods and get price accordingly.

The study reveals that the selling mechanism of almost all the products is predominantly individual oriented, which has helped traders (small as well as big) to gain in a big way. The primary producers are not getting competitive or best prices for their products. A closer look at

the value chain of any of produce shows that the traders simply gains more because of his scale of operation, storage facility, adequate finance, etc. In addition lack of competition and information at the primary producer / collector level provides them with another tool to get the produce at a relatively lesser price (commonly known as distress sales). It is not that farmers or collectors have not tried their hand in adopting alternative means to get better prices but chronic dependence on trader and collapse of the means after a period of time leads them to remain in the vicious circle. It is worthwhile to note that majority of the forest produce are sold in the raw form and are traded in the same form without any value addition. Though the primary collectors are aware that value addition can fetch more income but cannot do so because the need of money which forces them to sell the produce. The most important factor is introducing value addition initiative at the community level would mean increased break even period and a high gestation period of return above investment.

4.11 Migration

Migration is a social, economic and universal phenomenon in modern times, through which human being move from one place to another place in pursuit of certain cherished objectives like avenues of better employment, better wages, better working and living conditions, better quality of life and better livelihood. Poverty and migration are always been interrelated in Odisha. Inadequate employment opportunity in farm and non farm sector and over all economic backwardness has led to distress migration of resource poor and disadvantaged families. Seasonal migration has become an important livelihood strategy of many of the rural poor in the study area.

Table No: 4.14

Migration Status of Sample HHs

Partner	HH studied	Migrant HH
Madhayam Foundation	1651	288
RCDC	1678	296
Chetna	1655	302
OPDSC	1550	387
Harsha Trust	1579	276
Pragati	1650	291
Total	9763	1840
Percentage		18.8 %

(Source: Primary data Collection)

In almost all the operational villages, migration is a regular phenomenon. However, the duration and place of migration varies from village to village. During the discussion, it was revealed that households migrate for at least four to six months in search of employment. Households migrate after the harvesting season and remain there till the onset of monsoon. However, the youth prefer to work for the whole year. Households are engaged mostly in unskilled wage labor, construction sites and in other wage labor. As expected, migration rates were extremely high from villages which are located in dry areas without assured irrigation and prolonged drought conditions. Less forest coverage, inaccessibility, more concentration of tribal, lack of employment opportunity, lack of proper implementation of MGNREGS are some of the factors for which the magnitude of migration in the operational villages. The following table shows the type of engagement as reported by the community during the discussion.

Table no 4.15

Type of work engaged at destination (%)

Type of Work	% of the total migrants engaged
Agriculture	4
Construction skilled labour	13
Daily labour in industry	26
Brick kiln	9
Domestic Servant	1
Unskilled const. labour	47
Grand Total	100

Source: Primary data through FGD

It was revealed during the discussion with community that the Scheduled Tribes and SCs are several times more likely to migrate compared to other communities. The magnitude of migration streams is closely associated with village characteristics and the opportunity available in the village for gainful engagement.

In operational villages most of the migration is short distance migration in nature i.e., within the state. However, this kind of short distance migration is for more than two to three months. Almost one third of them also report migrating outside the state for more than three months. They move to Hyderabad, Chennai, Goa, Kerala, Tamil Nadu and other parts of the state. The migrants usually stay for 4 to 6 months in these towns in a compromised condition in order to survive and send nominal money back to the villages where their old and infirm parents as well as female counterparts reside.

4.12 Food security

Though state outlays for meeting the food insecurity has been increasing with major development projects, the change in the tribal family to meet the hunger needs has not undergone any paradigm shift. In agricultural patterns there is a shift from food crops to commercial crops leading pushing tribal to hunger. Declining NTFP coupled with non-availability of work is also depressing sustenance of tribal. The food seasonality analysis points out that the crop cycle starts from June and ends with harvesting in the month of January. People usually grow paddy, pulses, vegetables as well as Oil seeds from their own land. Similarly wage labor in agriculture is mostly available in July, August, November as well as December when seeds are sown, transplanting work, grass cleaning and harvesting is done.

The analysis shows that wage labor in construction is available round the clock. But they prefer February to July after the harvesting is done as this is the lean season.

Table No 4.16

Seasonal Calendar of food security in the study villages

Activities	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Crop Cycle												
Food availability own land												
Wage Labour in agriculture												
Need for credit												
Most difficult months												

Source: Primary data through FGD

Religious festivals are quite demanding financially and people being poor cannot afford to manage the demands of new clothes, sweets, housing guests for which they have to spend a lot. Most of these festivals start from the month of August and continues till November. People take loans for meeting various demands of these festivals. Hence the need for credit is felt during May to October every year. Similarly most difficult months for food collection are April to August due to loss of employment, erratic rainfall or lull summer.

People find it difficult to secure food accessibility from April to August. Primary reasons for this are:

- They exhaust whatever earnings from agriculture and wage labor prior to the rainy season and have very little cash to buy food;
- There is less food stock available with them as food from agriculture lasts only eight months;
- Food grains from PDS is not enough;
- In the rainy months people do not find work either in agricultural or construction sectors. In the absence of wages people find it hard to make both ends meet.
- They depend on maize consumption stored for emergency needs;
- They also sell livestock to ward off food crisis during these months.

Chapter - V

Government Schemes and Institutions

This chapter explores how much the various government programs have succeeded or failed to tackle food security, livelihoods and migration. Except the PDS that has reached almost all corners of the operational villages there is not much help for other sectors such as livelihoods and education. It has undermined livelihoods and destabilized prices, and this is where the government programs should step in and help in supporting communities in adapting their livelihoods to make them more resilient. The programs must address our broken food system, livelihoods and adaptive capacity of the community.

5.1 Government Schemes, Programs and Policies

The government has designed various welfare schemes to cover the marginalized communities in the rural areas. These schemes are basically the “safety net” measures initiated by the government to ensure that the minimum basic needs and amenities of life reach the vulnerable rural communities. Due to illiteracy and lack of knowledge of the various schemes, the schemes have found their way to either not so poor tribal communities or to the hands of middlemen who have exploited the schemes to their benefit. The information collected from the primary and secondary stakeholders reveal that the “welfare schemes” of the government are yet to reach the most backward/backward villages, in few cases even if it has reached, people have to face various hurdles to access it, the schemes are also controlled by the powerful local government officials, the public awareness regarding the few schemes is virtually nil.

Table No: 5.1

Coverage under different programs and Schemes

Partner NGO	Total HH	Widow pension	HH with Job card	HH with Ration Card
Madhayam Foundation	1651	24	1254	1487
RCDC	1678	31	1167	1086
Chetna	1655	29	1124	905
OPDSC	1550	38	1023	1087
Harsha Trust	1579	42	1241	1112
Pragati	1650	37	1325	1092
Grand Total	9763	201	7134	6769
Percentage	100	2.1	73.1	69.3

Source: Primary data

5.2 Accessing Agricultural services

The respondents were asked about whether they had received any agriculture extension services in 2013-14 and it was noted that nearly 33 percent respondents had received these services in the year 2013, while the rest reported otherwise. With respect to the Institution from where these respondents had received the services included District/ Block/GP level officials as reported by 33 percent respondents and private companies as reported by nearly 9 percent respondents. NGOs seemed to be more actively involved in providing these services as nearly 80 percent respondents reported this. Only about 7 percent respondents had received these services from Krishi Vigyan Kendra.

The respondents were also asked whether they had attended any demonstration on Agriculture, and the results indicated that only a handful nearly 11 percent had attended such demonstrations, while the rest reported otherwise. Amongst those who had reported to attend such demonstrations, nearly 9 percent reported that it was disseminated by District/ Block level Officials, nearly 80 percent reported to have attended those that were conducted by NGOs and about 11 percent from Krishi Vigyan Kendra. With respect to attending these demonstration activities in the year 2011, it was noted that only a handful, about 6 percent reported to have attended it while the rest reported otherwise.

Chapter -VI

Conclusion and Recommendations

In the above sections, we have discussed in-depth about the area, their land, resources, their livelihood and economic wellbeing, institutions, etc. Migration has been discussed as an extreme face of poverty by which people are unguided and lead to exploitation. The most alarming form of deprivation is seen in the form of insufficient and non-accessible government and other support machinery, which are supposed to play an important facilitative and supportive role in shaping the future of under privileged section who are expected to take leadership for shaping their locality, region and country.

Major findings

Crop failure and Droughts: Agriculture in these regions is also highly vulnerable to the vagaries of nature. Drought-like conditions as well as the moisture stress due to erratic rain has made life difficult for the people. The moisture stress not only affects the monsoon season (Kharif) agriculture but also affects the winter season (Rabi) agriculture. The community confirmed that over the last decade or so, the climate has been acting in a highly unpredictable manner and the states have witnessed succession of severe drought conditions. This has added to the volatility in the agriculture production.

Irrigation: Water problem is an issue for almost all the villages of study area. It is evident that in almost all the villages the water is drawn from the tube wells but the depth of tube wells are limited to 100-120 ft. All the villages suffer from water scarcity during March to July. The womenfolk and children carry the water for the entire family from these sources located more than 200 meters from their main habitation. Another problem is that due to deforestation the water runoff prevents recharging of ground water reserves. With no rainfall till June this year, many of the perennial water sources have dried up.

Marginalization of Landholdings: Due to ever increasing population pressure in these villages, the landholdings are getting increasingly marginalized. The vast majority of landholdings have now become either marginal (that is, one acre or less) or small (1-3 acres). It would not be an exaggeration, therefore, to say that agriculture in these villages is dominated by large number of very small-sized holdings. A related problem is the fragmented nature of holdings. This factor is now threatening to become a serious problem in the sense that median size of landholding is now reaching the threshold beyond which it will become an 'uneconomic' proposition, particularly under the present production system.

Pattern of Occupation: In primary occupation both farming and wage labor consumes 35% of the total workforce, whereas in the secondary segment, small ruminant rearing and NTFP

selling account for 30% of total labor force. Similarly agricultural labor accounts for 25% in the primary category whereas vegetable vending accounts for 20% of the total secondary workforce engagement. Block wise patterns show uniformity in all types of occupation barring NTFP selling, seasonal migration, selling of fuel, traditional artistry and basket making.

Low agriculture productivity: The communities in the study area are mostly dependent on agriculture for their livelihood. However the productivity of land has gradually declined because of increasing cost of inputs, failing productivity of lands and regular occurrence of natural hazards. Lack of knowledge and information on improved agriculture or alternative agriculture deprive the youth to make their agriculture practice profitable.

There is no proper coordination between the Govt. schemes / programs and the farmers. From the FGDs it has been inferred that, over the last decade and half, the agriculture sector has witnessed a trend of increasingly low 'return on investment' from agricultural operations due to ever increasing cost of inputs (particularly, the costs of irrigation, fertilizer and labour) and stagnating output values. The combined effect of these factors is that, in the farmer's perception, agriculture is turning into 'unviable' economic activity. This, in combination with the marginalization factor, is discouraging the farmers from making investments required to upgrade the factors of production.

The infrastructural and support/service systems needed for agricultural development, like credit, input supplies, post-production value addition and processing, storage, and marketing are in a very poor shape in the study area. Similarly, the credit delivery system is also highly inefficient. One of the critical bottlenecks that have hampered agricultural production/productivity is the lack of availability of timely seeds.

Unskilled labour (Low earning): Most of the youth go for daily labour works in agriculture, wage labour in non-farm sector and they earn miserably compared to their hard work. Some of the youth work as drivers without proper license. The youth realize that they are not well trained with different skills. So it is too difficult for them to get good wages for their work. The youth feel that training on livelihood skills can provide them with more earning opportunities. As they earn themselves, they were forced into early marriage. Even those who are idle, they are also forced into early marriage. Due to low earning and family burden, there are conflicts within the family. The other reason for early marriage is to bring the girl home to increase the work force. During the consultation process, the youth expressed that if they have better earning, they can have better living standard and they can take care of their own children in better way.

Agricultural wage labour households are the most livelihoods insecure: In terms of education/literacy, food insecurity, health, productive asset base and access to livelihood

resources they are the most vulnerable. Nearly half of the agricultural labour households are in the always poor category, and there are no households located in the non-poor wealth group. Agricultural wage labourers are also the least likely to have savings and the most likely to take out loans. These households have limited asset ownership, particularly non-productive assets. Fewer of these households own land than any other group and, of those that do, the mean land value is less than any other occupation group. This group has less investment in perennial crops and almost no participation in business ventures.

Vegetable production is limited by technological constraints and marketing: Almost 50% of households in different occupation groups cultivate vegetables, but most of them follow traditional practices. The same holds true for seed preservation. Improved management practices, together with optimum utilization of homestead, can help these households in increasing vegetable production. The ability of households to garden is constrained by the lack of access to quality seed and lack of knowledge in seed preservation.

Access to markets is dependent upon rural infrastructure as well as economies of scale. In general poorer households have limited access to markets and sell their produce locally. The wealthier households are more likely to market production in urban markets and through middlemen. Although the majority of households cultivate vegetables, production is limited due to the traditional practices employed.

Trend in NTFP: Over the years, forest cover has been reduced to a great extent, having direct impact on the availability of NTFP in the study area. Rapid deforestation, uncertain rainfall and high temperature have made the situation more critical. The effects of climate change have also contributed a lot towards the shifting of livelihood of the community. Many community members echoed, *“Jungle ta kami jauchi aue jungle ru kama miluchi”*. (Jungles are reducing day by day.....from where we will get the forest produce???)

Lack of value addition to NTFP Products: Most of the households do not process or add value (except drying) to the NTFP collected from the forest. This is due to lack of knowledge and technology at village level. As a result of this the households sell the product at lower rate to middlemen. The marketing mechanisms for the NTFP are almost nonexistent except few products.

Animal and People: The livestock sector has significant potential for improving the livelihoods of landless people and small and marginal farmers, who comprise the majority of rural poor in the operational villages. Many poor rural households own livestock and gain some income from it. At present, resource and institutional constraints prevent poor producers from realizing the full potential of their animals. However goat rearing, pig rearing and small-scale poultry are common among many tribal groups. Its products are used for exchange, localised sale; meet

the emergency needs and domestic consumption. Thus, these items usually remain outside the scope of commercial marketing. After agriculture and NTFP, animal rearing is one of the major sources of livelihood in the area. From the discussion with the community, it has been observed that both agriculture and the small ruminants rearing have become increasingly risky pursuits and households have sought other sources of income, most notably through migration for daily labour.

Status of Women: Women's status in the region is significantly neglected. The burden of poverty is biased towards women, given their low literacy rates, poor nutrition, lack of income opportunities due to poor mobility, and discrimination. Efforts should be made to support interventions that increase women's empowerment and social mobility. Emphasis should be given to both social mobilization as well as group savings.

Recommendation

In general, their livelihoods and food security and other health or socio-economic problems, are even more endangered in the operational villages due to several factors. After a macro level analysis of the ground level situation has been made, a number of recommendations emerged. These recommendations are not only directed to make the individuals stronger but also empower the communities to which he/she belongs to become much more empowered.

A. Increase the Knowledge and skill base of people

Establish linkage with government programs and Policy: Necessary tie up with National Horticulture Mission, Krishi Vigyan Kendra, Agricultural department, Water Resource department, etc. can be done to promote different schemes mooted by Govt. among farmers. This increasing knowledge base will facilitate the growth of farmers and restrict the impact of climate change on them.

Developing cadre at community level: It is felt that there is a need to supplement the orientation programs with developing a cadre of community youths to address current issues. This cadre can be links between the community and the Panchayat and other departments.

Developing micro-plans on each village: Micro-plans can be initiated in each village incorporating the adaptation strategy components to the effects of climate change.

Development of communication materials: IEC is important to increase the knowledge and skill of the community. It is seen that there is a dearth of literature and communication materials. Therefore development of different communication materials along with street plays will help in enhancing awareness and learning on climate change.

B. Empowering the Women

Formation and strengthening of SHGs: The women groups shall be promoted to take up massive small savings activity. This may be promoted by matching revolving grant support under the program. The SHG should be formally registered with a provision of investing the money reserved for the enterprise and livelihood promotion in the village or nearby villages. But this institution cannot be dissolved to share the resources (cash) among members. The cash reserve has been observed to be highly instrumental to act as a safety net during scarce periods. This institutional arrangement immediately acts before any other help reaches the village. Apart from this the cash reserve available in the village with the SHG would cater to needs of landed farmers for agricultural investment, the landless and poor for enterprising activities. Or else there have been instances of banks and financial institutions neglecting/ harassing these farm based investments and small enterprises or delaying the loan.

Involvement of Women in Agriculture: Despite the long-lasting experience of women in plant domestication and agriculture the study team observed that women farmers are not taken into account as key actors and stakeholders, although women play multiple roles in agricultural production and cope with different disasters. There is a great need to create awareness of the important role that traditional knowledge of women and indigenous people can play in the promotion of sustainable development.

Corporate – SHG linkage for rural market: Corporate linkage will foster secure income for the SHGs. There will be skill enhancement for members and there will be an upliftment in their social status.

C. Increasing agricultural productivity

The analysis found that most of the families rely on agriculture. However, per acre productivity and yield has not increased in recent years. In most of the cases, per acre returns are confined to 10 quintals for paddy, which are quite insignificant in comparison to other area of the state. Similarly, even within the region itself, a great variety of differentiations are marked between agricultural practice and productivity. The study has also given to understand that the people residing in these areas are poor, so they cannot afford to further invest in agriculture. Following interventions can be undertaken to address the need of the farmers in the study villages:

- Promoting farming methods suitable for adaptation to rain-fed farming
- Continuing the promotion of agro-forestry and mixed farming to protect local flora

- Promoting bio-diverse organic farming based on agro-ecological principles by combining traditional agricultural knowledge with innovative farming methods. This leads to improved food self-sufficiency and food security at farm and community levels
- Giving more emphasis to the cultivation of vegetables, primarily for home consumption but also for sale
- Encouraging community farming, especially regarding vegetable production with availability of quality planting materials, INM, IPM, water management and use of technology

Biodiversity based organic farming: The experience with small holders in different states of India confirms the importance and role of biodiversity based organic farming. It not only ensures better yields but also reduces the risks related to climate change. Organic farming and the use of local crops and varieties reduces water demand and use significantly, making production less vulnerable to draught. It has been widely recognized now that the small and poor are much more vulnerable to climate change, therefore organic farming is capable of reducing their risk as the examples in the box indicate.

Fodder cultivation: In order to address the scarcity of natural animal fodder, it is recommended that there should be promotion of cultivation of grass and other fodder plants in and around the villages.

D. Diversification of crops

Promotion of Second crop: Barring Kharif crops (Mostly confined to Paddy, Arahara, Til) and some vegetable cultivation no other crops are seen in the study area. Both these crops are depending too much on weather condition. Due to small holding size, the productivity is limited. In these conditions second crop can be taken by using the moisture of the soil after harvesting of paddy.

Promotion of Minor Millet: Ragi (finger millet) is a rain-fed crop which grows in any type of soil. It is resistant to drought as well as to very heavy rainfall. Traditionally ragi is grown with many other pulses such as horse gram, kodo, kudki, pigeon pea etc. It is an essential component of the diet for the tribal 10 years back. Nevertheless, for two decades now, the area under ragi is declining continuously. As a result, its share in the daily diet is also reduced significantly. In many parts of state it has been completely replaced by paddy and wheat. Ragi is very rich in calcium and other essential minerals and low in carbohydrates.

Focus on Horticulture: Horticulture can be used as a supplementary source of income with one small nursery in each block. There will be tie up with the National Horticulture Mission. Floriculture can also be looked into for supplementary income in addition to horticulture.

E. Improved water resources management for agriculture

Improving water availability in rural communities by rejuvenating the old water sources and reintroducing or expanding rainwater harvesting and traditional irrigation systems in the village;

Rejuvenating the dying springs and streams by raising plantations in the catchment areas and adopting the traditional watershed approach;

Develop water users group and a mechanisms to manage efficiently the water bodies and tube wells in the villages;

Promote land based activities to harvest the water in the upland. Simply the major step would be to put a diversion bund at the principal location along which the runoff from the non-arable area enters the cultivated lands. Some water may be impounded upstream of it and then led out along two guide bunds extending in either side. The graded (0.5%) guide bund would be created along the interface of the cultivated and non arable land. Only the intense and long showers will be able to reach the outfall point. The uplands being located immediately below the guide bund will get the first benefit and thus will escape the effect of drought. Water harvesting structure(WHS), Ponds and Sunken ponds would be developed as found suitable when guide bund runs across different terrains (when it passes over a gully there will be a WHS and when it passes through a low swampy land it would be a pond or sunken structure. Dug wells shall be dug out in the downstream of guide bund to harvest seepage water for crop production.

NRM, integrated watershed development programs and restructuring field extension set up.

F. NTFP processing and marketing

Processing of NTFP materials: The analysis showed that NTFP materials collected and sold to individuals/traders on as it is basis. Hence, the collector doesn't get due value for the produce. Value addition through processing provides the seller twin opportunities of adding value to the product and increasing the durability. Such facilities can be installed with SHGs. The micro finance institutions financial power can be utilized for this purpose. Sal seed oil, incense sticks etc. can be taken up as marketing activities.

Providing market facilities for NTFP products: Collection and marketing of NTFP produces ranks second in the list of occupation for the people in the study area. However, as we have seen, people are not satisfied with the way the forest products are marketed. Similarly, they have to move many kilometers away from their home to get a fair price for their produces. Even though govt. sells outlet exist, yet in many cases, the local trader/middlemen purchases the produces

paying them a price much below the market value. Even though as per NTFP collection and marketing provisions the GPs have to play a major role in conducting NTFP marketing, yet such provisions seem to stick to paper only. NTFP marketing opportunities must provide greater scope/options to the seller.

Adding value to the produce: Non-timber forest produce including common use products such as tamarind, Kendu leafs, Harida, Bahada etc offer enormous opportunities for value addition through de-seeding / de veining and packaging. In the case of horticulture crops, segregating and grading the produce itself fetches differential prices. Hence adequate steps should take to use the opportunities to enhance the income of the households.

G. Improved governance of social safety net programs

The recent thrust on creating durable and productive assets through convergence of MGNREGA works with programs of agriculture and allied sectors are leading to enhanced yields. With the scope of works under NREGA expanded to include lands of small and marginal farmers, it is possible to significantly enhance the irrigation potential in rain-fed areas and drought-proof small-holder agriculture, leading to sustainable, higher yields. Conservation technologies — stress-tolerant, climate-resilient varieties of seeds, zero-tillage, raised-bed planting, Systems of Rice Intensification (SRI), can build adaptive capacities to cope with increasing water stress, providing “more crop per drop”.

H. Access to savings, credit and other financial services

Linkages with institutional finance: The absence of well-defined institutionalized financial services for the small and marginal farmer has been an open invitation for moneylenders to entrap needy farmers into huge debt burdens. And many times it is this moneylender who graduates to function as the middleman and exploits the farmer with both low prices for his crop and usurious interest rates for loans. Any effort at livelihood strategies to offer complete solutions to farmers without eliminating the role of the middleman and replacing him with institutional financial services for the farmer would not only be incomplete but counter-productive as well. Lower interest rates from banks automatically reduces the debt burden, and freedom from the compulsion of selling their crop to money lenders further enhances increased income possibilities. Overall, financial security and long-term planning of cash flows through their cooperatives that are trained to offer these inputs to their members becomes a definite possibility for these farmers. Hence, project should promote and establish linkage with micro finance institutional for the small and marginal farmers.