

DETAILED PROJECT REPORT

**Enhancing Livelihoods of Women in Agriculture in
Pottangi & Semiliguda Blocks of Koraput**



Under



**Mahila Kisan Sashaktikaran
Pariyojna
(MKSP)**

Project Implementing Agency



**Life Academy of Vocational Studies
LAVS**

Contents

S. No.	Contents	Page No.
A	Summary of the Proposal	
B	Detailed Text	
1	Project background, context and rationale	
1.1	Demographic Profile of the area	
1.2	Rural Poverty Context in the area	
1.3	Context of Social Inclusion and Social Mobilization	
1.4	Context of Financial Inclusion	
1.5	Livelihood Context	
1.6	Performance of NREGA in the state	
1.7	Existing Livelihood Initiatives and social sector initiatives in the selected area	
1.8	PIA's prior experience in developing the prototype for proposed interventions	
	Basic PIA Information	
2.	Detailed Intervention Strategy & Phasing	
2.1	Objectives of the project	
2.2	Project Strategy	
2.3	Community Institution's Architecture	
3.	Detailed Programme Components	
3.1	Detailed Proposed Actions	
3.2	Convergence with MGNREGA and other line Departments	
3.3	Training and Capacity Building of Communities	
3.4	Training and Capacity Building of Community Professionals	
4	Implementing Arrangements	
4.1	Implementing Plan	
5	Implementation Schedule	
6	Result Framework	
7	Monitoring, Evaluation and Learning	
8	Budget Narrative	

Summary of the Project

A 1.	Title of the Project	Enhancing Farm Livelihoods of Women SHGs in Pottangi and Semiliguda Blocks of Koraput District	
A2.	Project Duration	Three Years (2014-15 to 2017-18)	
A3	Total Budget	Rs 1,73,40,750 (INR)	
A4	PIA	Life Academy of Vocational Studies (LAVS)	
A5	Coverage of the Project	Number of District- One Number of Blocks- Two Number of GPs- Ten	Number of Villages- 88 Number of SHGs- 300 Number of families- 3000
A6	Key output of the Project	<ul style="list-style-type: none"> • The project will support 3000 direct beneficiaries of Pottangi & Semiliguda Blocks of Koraput district • There will 30% increase in farm income of the beneficiaries and agricultural productivity • 70% of the women in agriculture and their families will have physical and economic access to adequate food and nutrition • Crop intensification and diversification will be achieved in the project area and cropping intensity will enhance by 20% • 60% of women farmers will increase their level of skill and access to production inputs and technologies to adopt sustainable agricultural practices • 90% of women in agriculture have increased access to market and market information for better marketing • 45% of women members increased access to productive land, inputs, credit & technology • 70% of women beneficiaries will adopt market-led extension and ensure market linkage • 60% of arable land will have access to soil health measures, INM, IPM and integrated water management practices • 70% women in agriculture have reduced their drudgery • Visible increase in adoption of eco-friendly technologies for organic farming • Substantial reduction of out-migration • Increase in seed replacement rate by 10% and resort to decentralised seed production • Adoption of integrated farming system for better utilization of resources by 20% women farmers • Conservation of agricultural bio-diversity in the villages • Increase area under irrigation by 20% due to adoption of soil and water conservation technologies and rain water harvesting • Value addition to agricultural produce by 50% women farmers • Adoption of integrated natural resource management techniques by 50% women farmers 	

Chapter-1

Project Background Context & Project Rationale

Background

Odisha is among the poorest of India's major states, despite its rich endowment of natural resources, and coastline. Odisha has the highest proportion of poor persons in its population relative to all other states/UTs in India. However, there have been positive developments in recent years, and poverty rates in Odisha have declined from 57.2% to 37% between 2004 and 2009-10 (Odisha Economic Survey, 2012-13). Despite this improvement, poverty rates in Odisha are about 7% more than the National average. Non-monetary indicators of poverty too confirm the low welfare status of Odia households. Eighty four percent of Odisha's 41.9 million population is rural, and a vast majority of the poor live in rural areas.

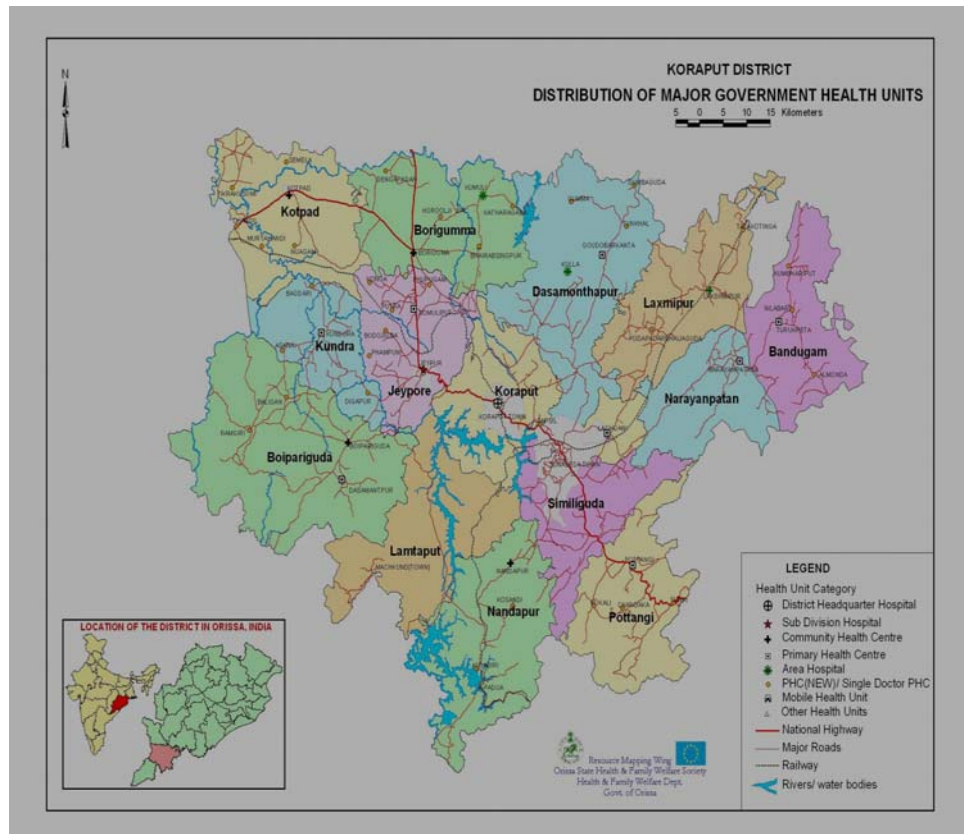
Koraput district of Odisha is mostly backward. The livelihoods of the rural people are mainly agriculture, collection of NTFP forests and animal husbandry. The agriculture is under developed due to bio-physical constraints. The crop productivity is comparatively low and the farmers have less access to irrigation. Shifting cultivation practiced at quick successions has caused serious biological and environmental implications. The women population of the district is underprivileged. Keeping this in view, the MKSP has been prepared for implementation in Pottangi and Semiliguda Blocks of Koraput district. The project aims to cover 3000 women households in 10 Gram Pachayats of two Blocks in the district.

1.1 Demographic Profile of the Area



Koraput district is one of the backward districts of Odisha. With the geographical area of 8807 sq km the district has human population of 13, 76,934 as per census 2011. The rate of literacy is only

49.87% as against the State literacy of 73.45%. The density of population in the district is 156 which is much less than the State density of 269 per sq km. The district has 14 CD Blocks, 226 Gram Panchayats and 2243 villages. The sex ratio of the district is 1031 per 1000 males, whereas it is 1044 in rural areas. This means that more number of women live in rural areas. The literacy rate in the district is still less in rural areas with 43.27% (Census 2011). The ST population of the district is 49.62% of the total whereas it is 13.04% in case of SC (Census 2001). It means the ST and SC population of the district is 62.66% as against the State average of 38.66%. The minority population of the district is hardly 6%.



The district is characterised by low per capita income, livelihood insecurity of people, low agricultural productivity, poor health and nutrition of rural mass and poor infrastructure development. The problems of the district have been further accentuated by the activities of Left Wing Extremities (LWE). The tribal women of the district are triple burdened with production, reproduction and maintenance of household assets. Since the food security is not solely agricultural dependent and partly forest-dependent, the tribal women are engaged in forest activities in lean agricultural seasons. They are to travel a long distance in fetching water and fuel wood. Some of their household activities are passed on to the girl children at the cost of their education. The district profile is presented in Table 1.1 while demographic features are presented in Table 1.2

Table 1.1 District Profile of Koraput

1.	Geographical area	Sq.km.	8807.0
2.	Total Population	Lakh	11.81
3.	Sub-divisions	Number	02
4.	Blocks	Number	14
5.	Clusters / Circles	Number	130
6.	Revenue villages	Number	2028
7.	Urban habitations	Number	05
8.	Gram Panchayats (village councils)	Number	226
9.	Taluka Panchayats (Block councils)	Number	14
10.	Nagar Panchayats (Municipal councils)	Number	01
11.	Length of road network	Km.	7001
12.	Length of rail network	Km.	281
13.	Rivers	Number	04
14.	Water bodies	Number	372
15.	Watersheds	Number	26
16.	Irrigated agriculture	Hectares	64730
17.	Rain-fed agriculture	Hectares	94381
18.	Wasteland	Hectares	18571
19.	Forests	Sq.km.	1879.53
20.	Major and medium dams	Number	04
21.	Large and medium industries	Number	03

Source: 1. District Stastical Hand Book, Koraput, 2007.

Table 1.2 Demographic Features of Koraput District

Total population (2011 Census)		13,76,934
	Males	6,77,864
	Females	6,99,070
Total Households (2001 Census)		2,84,876
Total rural population (2001)		9,82,188
	Males	4,88,975
	Females	4,93,213
Total urban population(2001)		1,98,449
	Males	1,01,768
	Females	96,681
Density of population(2011)		156 per sq.km
No of female per 1000 males (2011)		1031
Literacy rate (2011)		49.86%
Male literacy rate		61.29%
Female literacy rate		38.29%
Scheduled Caste Population (2001)		153932 (13.04%)
Scheduled Tribe Population(2001)		585830 (49.62%)

1.2 Rural Poverty Context in the Area

In general term poverty has been defined as “deprivation in wellbeing” and encompasses several dimensions and deprivation such as material deprivation, social deprivation, political deprivation, intellectual deprivation, deprivation in health and inability to cope with inabilities and vulnerabilities. The poverty head count ratio of Odisha was 46.40% during 2004 as against 27.5% in the country as per Lakadawala Committee methodology. This was 57.2% in Odisha during 2004 as per Tendulkar Committee methodology, which has been reduced to 37% during 2009-10 (Odisha Economic Survey, 2012-13). During the year 2009-10 the poverty ratio was the highest in Bihar (53.5%) followed by Uttar Pradesh (37.7%) among the major States of the country. Odisha was ranked third next to UP whereas MP was very close to Odisha with 36.7%.

Human Development has been conceived as processes that enable people to improve their skills, capabilities and choices to live a long, healthy and fulfilled life. Human Development Index has been regarded as a measure of living standards of the people in a particular region. The HDI of Odisha was 0.579 and that of Koraput was 0.431 during 2004-05 (Human Development Report, 2005). Koraput district was placed at rank 27 among 30 districts of Odisha indicating that the district is one of the most backward districts in the State. The BPL survey 1997 in Odisha indicated that 66.37% of families were BPL families in the State.

The district was having the second highest of BPL families in the State next to Nawapada district. The per capita NDDP of Odisha in 2009-10 at 2004-05 price was Rs 22846 and it was Rs 23576 in the same year (Economic Survey of Odisha 2012-13). The share of GDDP to GSDP of Koraput in 2009-10 at 2004-05 price was 3.23%. As per HDR 2004 Koraput appears to be a backward district in the State and the HDI of the district is ranked 27 among 30 districts. The human development indicators of the district are presented in Table 1.1.

Table 1.3 Human Development Indicators (2004-05)

Indicator	Odisha	Koraput
IMR	97	136
Health Index	0.468	0.218
Income index	0.545	0.539
Overall literacy rate index	0.636	0.362
Education index	0.723	0.536
HDI value	0.579	0.431

The BPL families in Koraput district was 1, 62,931 during 1992 which was increased to 2, 21,846 during 1997. The district-wise BPL families during 1997 have been indicated in Table 1.5.

Table 1.4 Block-wise BPL families of Koraput

S.No	Block	BPL families in 1992	BPL families in 1997
1	Jeypore	13061	21642
2	Bariguma	19049	31453
3	Kotpad	13788	18323
4	Boipariguda	14635	19396
5	Kundra	9958	13009
6	Koraput	9746	11578
7	Semiliguda	9949	12784
8	Pottangi	9826	13558
9	Nandapur	15742	17938

10	Lamtaput	9713	12359
11	Dasmantpur	12163	16964
12	Laxmipur	9607	12688
13	Narayanpatana	6630	8517
14	Bandhugaon	9074	11637
	Total	162931	221846

Source: DRDA, Koraput

A large proportion of people live in severe poverty, despite the fact that a subset of people has experienced improvements in living conditions with respect to food, clothing and housing. Improvements, at best, may have helped reduce the extent of severity, but not the duration of poverty. Physical remoteness at regional/district level emerges as the most important factor explaining the level of poverty in Koraput, which is significantly higher in comparison with forest-based districts in Northern Orissa. The impact is diluted when a comparison is made between a more remote village and a less remote village within the same district. Remoteness has a negative impact on literacy and access to health (and family planning) services and exacerbates expenditure poverty. The incidence of poverty among SCs is higher compared with STs. Nevertheless, incidence of poverty even among non-SC/ST households is as high as 75%. This suggests that, more than just social identity, regional characteristics have a great impact on poverty (ODI Working Paper 325 & CPRC Working Paper 165).

Vulnerability

(a) Household level vulnerability

The total number of workers of the district is 570435, which is 48.32% of the population. Cultivators constitute 32.42% of total workers while agricultural labourers constitute 40.22% (Census 2001). Of the 147262 operational landholders in the district 60292 are marginal and 50181 are small while remaining are medium and big farmers (Agricultural Census, 2000-01). The numbers of ST and SC holdings are 94210 and 19241, respectively. The operational holdings as per 2005-06 Censuses are 162880 with average holding size of 1.53 ha (Odisha Agricultural Census, 2009-10). The holdings are fragmented and small in size, which do not provide scope for farm mechanization. The food security of the tribal families is not solely agriculture dependent. The supplementary income derived from gathering of NTFP, animal husbandry and wage labour is not just sufficient for ensuring food and nutritional security of all households. The landless families depend on wage labour, collection of forest produces, animal rearing and migration for their sustenance.

(b) District/State level Vulnerabilities

Koraput district in Orissa has the highest child vulnerability index in the State. The IMR of the district is 89 (SRS 2006) against the State average of 73 (SRS 2006). The neonatal mortality rate in Koraput is 66.8 against State average of 51.7. Similarly the post neonatal mortality rate is 35.2 in the district against the State average of 21.4 (Annual Health Survey Bulletin of Odisha, 2011-12). In case of women severity underweight (less than 17 BMI) is 15.05% and under weight (17-19 BMI) is 26.67% (Kar, Gyan et al 2007: A study of Food Related Nutrient Deficiency in KBK Districts of Orissa). Thus the children and women are most vulnerable in the district. The PDS involves the entire work of procurement of various food grains, building of and maintenance of stocks, their storage, movement and delivery to the beneficiaries. The focus is on incentivizing farmers through fair value of their produce i.e. paddy by way of payment of minimum support price

1.3 Context of Social Inclusion and Social Mobilization

Scheduled Tribes (*Adivasis*), Scheduled Castes (*Dalits*) and people with disabilities are amongst the poorest groups. *Adivasis* account for about 22.13 per cent of the State's population (Census 2001). This slow rate of poverty decline is lower than that in the rest of India's population. Hence, *Adivasis* are increasingly concentrated in the poorest deciles of the population. There has also been an *increase* in tribal poverty in states such as Orissa where three-fourths of tribal households now fall below the poverty line. *Dalits* constitute 16.53 per cent of State's population. In the past, they have been socially ostracized, economically exploited, and denied human dignity and a sense of self-worth.

The poor and especially the groups above face geographic, economic, social, political and identity-based exclusion. Some groups of people are excluded simply on the basis of where they live. In rural areas, geographic or spatial exclusion is associated with remoteness, poor connectivity, difficult terrain (including hills, mountains, forests and deserts), low agricultural or resource potential, and poor access to services. Economic exclusion is due to the lack of access to labour markets, credit and other 'capital assets' among some people. These may in turn be due to the lack of education, technical skills and access to technology. Social exclusion cuts across all other forms of exclusion. People who are socially excluded suffer from multiple disadvantages and discrimination on the basis of their identity (e.g., race, ethnicity, religion, caste, descent, age, disability, sexual orientation, HIV status, migrant status, and so on). The poorest of the poor tend to be highly excluded socially, and have the weakest voice and representation in society. Caste discrimination has been identified as the most pronounced and prevalent form of exclusion. There is strong social division along caste lines which determines social behavior and economic segmentation. Social exclusion is a cause of poverty, conflict and insecurity and also a consequence of these.

An important aspect of poverty that the groups above face is a lack of access to the institutions that deliver services for livelihoods and development. A range of institutions, formal and informal, play vital roles in rural service delivery. Formal institutions are those that provide basic services (health, education, water and sanitation, Public Distribution System (PDS)), while informal ones include traditional social, religious, recreational and political associations that perform various economic and non-economic functions for their members. Some informal institutions such as SHGs, producer organizations and federations have emerged as 'alternative' institutions for the poor. Some of the key constraints that the poor face in accessing services are: poor physical access, affordability, and social distance including discriminatory attitudes among service providers. Many institutions that are intended to serve the poor, such as the PDS, often exclude them.

Reports on the IRDP, SGSY or the NABARD SHG-Bank Linkage program show how the better-off amongst the 'target group' corner most of the benefits. This is due to their greater 'voice' failure of targeting systems to remove the 'creamy layer, lack of support mechanisms (such as their own institutions) among the poorer people, lack of their ability to take risks, and so on. For instance, irrigation projects benefit farmers with large lands, sometimes even to the detriment of small land owners. Moreover, even strategic inputs such training and capacity building do not factor in the specific needs of poorer groups. Programs aiming to lower gender barriers also may not be effective as few identify the 'real' issues clearly and evolve specific strategies to address them. There are also regressive effects such as women's savings from their hard-earned incomes being used to provide dowry for their daughters and obtain "better" bridegrooms. Some of these problems could be addressed by better social accountability efforts. Although these are now being included in some programs, there is still little commitment to these mechanisms at higher levels, or capacity and ownership of them at the grassroots. For these many reasons, the impact of development efforts falls short of what is desired.

Social Mobilization

Social Mobilization is a crucial step if social inclusion is to be achieved. Rapport building prior to beginning activities in a village is important. This would include meetings with all community members to explain the project, including meeting with PRIs and civil society organizations, separate meetings with women, etc. Strong communication strategies, house-to-house information prior to community meetings, location-specific meetings are additional efforts that will have to be made. Although the project emphasizes working with women, attention should also be given to addressing men in poor households to ensure that they are supportive of the women in their families participating in the program. It is important to get the public support of community 'opinion-makers,' including religious leaders, and use them as local mobilizers.

Based on these core strategies, the Government of Orissa has established Mission Shakti under the Women and Child Development Department. This is an umbrella body for empowering the poor through the formation and strengthening of SHGs. As in other states in India, SHGs are the predominant mode of microfinance in Orissa. The total number of SHGs in Orissa is estimated around 300,000. In Koraput district 13200 Women SHGs have been formed and 10,866 of them are under Mission Shakti.

Situational analysis of the SHG program in Orissa suggests that there are certain issues that are constraining the impact of the program to a great extent. Some of the key issues are: (i) no definitive estimate of the number of functioning SHGs and their quality are available; (ii) a significant proportion of SHGs are either defunct or functioning a very low levels of potential; (iii) a large proportion of SHGs are functioning in a manner that significantly deviates from self-help principles; (iv) the quality of book-keeping is generally reported to be poor; (v) on-time recovery of SHG loans has fallen to 93%; (vi) a large number of GP level and Block-level federations have been promoted without clarity of purpose or need for financial viability; and (vii) still a substantial number of poorer households are out of the SHG fold.

Despite the rapid growth of the SHG-bank linkage, outreach of financial, insurance and marketing services is far below demand and there is tremendous scope to address this demand. While SHGs have provided access to financial services for a large number of people who previously did not have this opportunity, the services available through SHGs remain very rudimentary. Moreover, the livelihoods portfolio of a rural poor household is sub-optimally developed due to various factors such as; a) low productivity of major sectors; b) limited capacity of producer organizations; and c) inadequate livelihood support services SHG members predominantly invest in small scale agricultural and non-farm activities such as livestock and poultry rearing, production of lentils and other products for the Government's Mid- Day Meal Scheme for school children, and local handicrafts and weaving. Overall the quality and quantity of products is limited due to the lack of technical back-stopping, ideas regarding new livelihood opportunities and access to technically qualified service providers and new markets.

1.4 Context of Financial Inclusion

According to Rangarajan Committee Report, 2008 financial inclusion can be defined as "the delivery of credit and other financial services at an affordable cost to the vast sections of the disadvantaged and low income groups". The various financial services include savings, credit, insurance and payments and remittance facilities. The objective of financial inclusion is to extend the scope of activities of the organized financial system to include within its ambit people with low incomes. Through graduated credit, attempts must be made to lift the poor from one level to another so that they come out of poverty. Access to basic financial services such as savings, payments and credit can make a substantial positive difference in improving poor people's lives. Financial inclusion efforts do have multiplier effect on the economy as a whole through higher savings pooled from the vast segment of the bottom of the pyramid population by providing access to formal savings arrangement resulting in expansion in credit and investment by banks. It is important to bring the poor and under-privileged sections of the society within the banking fold for

inclusive growth. Provision of a set of basic financial products and services for the vulnerable and financially excluded sections is made by RBI for a savings cum overdraft product in the form of no-frills account, and entrepreneurial credit in the form of Kisan Credit Card (KCC)/General Credit Card (GCC). Spread of financial literacy across all sections of the society by creating awareness about financial products and services among the population is the second step.. Banks have been given complete freedom to price their advances so that lending in the rural areas could be a commercial proposition. Given the lower penetration of formal credit and recourse to money lenders what matters is the availability of credit rather than the cost. Banks have also been given the freedom to open branches in centres with population of less than 1, 00,000.

Use of technology and innovative delivery models is intended to bring down the cost for providing large quantum of small-ticket transactions. This initiative included putting in place a system of Business Correspondent (BC) Model to provide door-step delivery of financial products and services by authorized agents of banks; and Electronic Benefit Transfer (EBT) for routing of payments of the central and state government welfare schemes like social security pensions, Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGS), National Old Age Pension Scheme (NOAPS) directly to the bank accounts of the beneficiaries. In this direction, the effort so far has been to make basic banking facility available to all villages with a population of over 2,000 by end-March 2012. The next step is to provide banking facilities with population below 2000. State Level Bankers Committees (SLBCs) are preparing roadmaps for banking facilities in these villages in a time bound manner. For meaningful financial inclusion, it is envisaged that banks would set up brick and mortar branches in a cluster of 8–10 BC units in a reasonable distance of 3–4 km.

Indebtedness has been acknowledged as one of the most infamous stumbling blocks in the way of rural prosperity. It is cancerous, self-perpetuating, malignant and maleficent. It abates agricultural production, abashes social psyche, aggravates inequalities in the distribution of socioeconomic opportunities and benefits, arrests social progress and misdirects social efforts. It is observed that in the Indian context rural indebtedness is resonant with the overtones of unproductive usage, usurious ensnaring and deplorable condition of the poor farmers and agricultural labourers. The issue of farmers' indebtedness becomes a matter of intense debate whenever the agricultural sector faces distress. But, the root cause of the current crisis is not indebtedness alone - indebtedness is just a symptom. The underlying causes are stagnation in agriculture, increasing production and marketing risks, institutional vacuum and lack of alternative livelihood opportunities. There is an urgent need to expand the production base of agriculture with emphasis on small and marginal farmers so as to integrate them with mainstream development. This calls for appropriate technological innovations, institutional alternatives and introduction of novel instruments of intervention.

It is apparent that addressing financial exclusion will require a holistic approach in creating awareness about financial products, education and advice on money management, debt counseling, savings and affordable credit. Specific strategies to expand and outreach of their services have to be under taken in order to promote financial inclusion. In Koraput district there are 33 public sector banks, 36 regional banks and 73 commercial banks (District Statistical Handbook, 2009). Attempt has been made for financial inclusion of tribal SHGs on priority basis in the district.

The SHG - Bank Linkage Programme can be regarded as the most potent initiative since Independence for delivering financial services to the poor in a sustainable manner. NGOs have played a commendable role in promoting SHGs and linking them with banks. NGOs, being local initiators with their low resources, are finding it difficult to expand in other areas and regions. The SHG - Bank Linkage Programme is now more than 15 years old. There are a large number of SHGs in the country which are well established in their savings and credit operations. The members of such groups want to expand and diversify their activities with a view to attain

economies of scale. Many of the groups are organizing themselves into federations and other higher level structures.

Micro Finance Institutions (MFIs) could play a significant role in facilitating inclusion, as they are uniquely positioned in reaching out to the rural poor. Many of them operate in a limited geographical area, have a greater understanding of the issues specific to the rural poor, enjoy greater acceptability amongst the rural poor and have flexibility in operations providing a level of comfort to their clientele. Micro-insurance is a key element in the financial services package for people at the bottom of the pyramid. The poor face more risks than the well off. It is becoming increasingly clear that micro-insurance needs a further push and guidance from the Regulator as well as the Government.

1.5 Livelihoods Context

Since immemorial, tribal living has passed through different stages under influence of natural and ethnic factors. The genesis of tribal livelihood may be traced back from hunting and forest based livelihood. To counter the sufferings of tribals, development agencies have shown greater attention to improve their living standards. It is felt widely that the vast ethnic group can be productive and can contribute effectively to the nation building, provided their livelihoods get strengthened. It is in the above perspective; analysis of the livelihoods of the tribals is of paramount importance.

A study undertaken by the CRRI, Cuttack revealed that there were five major livelihood patterns such as farm, forest, wage, migration and business/ service based. Majority of the tribal families (55.41%) had farm based livelihood followed by wage based (27.48%), forest based (6.67%); migration based (5.41%) and business/ service based (5.00%). Under farm based, three distinct types of livelihoods were observed namely; crop based, horticulture based and animal husbandry based having the share of 88.72 per cent, 10.52 per cent, and 0.75 per cent, respectively. The above finding indicates that at present, the tribal families are more involved in farm sector for their livelihood and big chunk of them have resorted to wage employment. The analysis of the secondary and tertiary sources of income of tribal households depending on farming provides very interesting facts that all the tribal households (100%) had forest activities as their secondary or tertiary source of income. Among the sectors that were taken by the tribal households as their secondary livelihood, wage earning (30.83%) topped the list, followed by forest activities (15%), crop production activities (13.33%) and animal husbandry activities (11.67%). (Singh, Abha & Saranghi, BN: 2012: Livelihood Patterns and Resource Base of Koraput and Rayagada District)

Major problems faced by local communities include: predominance of small undulated and fragmented land holdings with limited cultivated area, low level of agricultural productivity due to lack of irrigation and better technology, limited livelihood options, abject poverty, low level of literacy leading to poor education, health & hygiene, food and nutrition insecurity, poor infrastructures for agricultural development, and technological gap.

Agriculture & Allied Activities

Agriculture is the mainstay of the economy of the district. Jeypore tract of the district is considered as the secondary origin of rice. The cultivated area of the district is 3,04,000 ha which is about 34.50% of the geographical area. Kharif paddy area is limited to 1,14,000 ha which accounts for 37.50% of the cultivated area. This means that non-paddy crops are more important than paddy crop. The high land constitutes about 61.5% of the cultivated area and low land is confined to 12.5% only. A typical low land called *Jholla* land is seen in most of the villages where water is available throughout the year for two rice crops. The gross cropped area of the district is 4, 15,250 ha with cropping intensity of 155% against the State average of 167% (Odisha agricultural Statistics, 2010-11). The cropped area, production and productivity of field crops are presented in Table.

Table 1.5. Area, production and productivity of different crops in Koraput district

Crop	Koraput			Odisha		
	Area (000 ha)	Production (000 mt)	Yield in kg/ha	Area (000 ha)	Production (000 mt)	Yield in kg/ha
Paddy	134.35	253.77	1889	4225.69	6931.16	1640
Total cereals	234.07	375.99	1600	4703.36	7770.49	1652
Total pulses	40.07	16.89	412	2079.69	999.38	481
Total oilseeds	45.83	20.35	955	770.68	638.01	828
Total fibres	0.47	3.75	1436	107.85	474.89	793
Total spices	10.98	60.00	5520	154.46	456.80	2957
Sugarcane	10.24	904.66	883.46	40.84	2907.48	71192
Vegetables	28.53	342.53	12006	698.63	9027.74	12922

Source: Odisha Agricultural Statistics, 2010-11

It is apparent from the above table that cereals, pulses, oilseeds, spices and vegetables are important crops of the district. Besides these crops fruit crops are grown in an area of 42,470 ha which is more than 8% of State's area fruit crops. The district also grows fruit crops in largest area among all the 30 districts of Odisha. Maximum area is covered by cashew nut and mango. Irrigation potential has been created for 1,00,823 ha during Kharif and 66,641 ha during Rabi up to 2010-11. This means that irrigation potential for Kharif has been created for 33% of cultivated area, which is lower than the State average. The normal rainfall of the district is 1567.2 ha which is more than the State average (1451.20 ha). Fertiliser consumption in the district in terms of plant nutrients is 46.31 kg/ha which is less than the State average of 62.85 kg/ha. Seed replacement rate in the district is lower than the State average.

Of the 14 Blocks of the district irrigation potential is highest in Jeypore Block and the lowest in Bandhugaon Block. Yield of paddy is 40.20 quintal per ha in Jeypore Block whereas it is 18-23 quintal per ha in other Blocks. Fertiliser consumption is correlated with irrigation availability, which has also been reflected in higher crop yield. Thus there is wide inter Block variation in agricultural development.

In Pottangi and Semiliguda Blocks there is opportunity for further agricultural development as the soil and climate are favourable for growing a wide array crops like vegetables including off-season vegetables, oilseeds, wheat, spices and flower. There is township in Sunabeda and Damanjodi which provide scope for marketing of agricultural produces. Marketing infrastructure has already developed at Kunduli for easy marketing of perishable products and spices. Research Stations are located at Pottangi and Semiliguda for better transfer of technology.

FAO has recognized that the Koraput region in the state of Odisha, has a rich assembly of unique floral and faunal diversity. The genetic repository of the region is of great significance in the global context. About 79 plant angiosperm species and one gymnosperm are endemic to the region. In addition, *people, who belong to different tribal groups, have conserved and preserved a large number of land races of rice, millets, pulses and medicinal plants, using diverse traditional cultivation practices, which have been developed as an answer to the topographical and ecological diversity of the region.* Koraput has been identified as an important centre of origin of rice. The changes in the traditional practices coupled with both, natural and anthropogenic pressures require immediate attention for conservation of these unique species and genotypes for perpetuity

In addition to agriculture there is enough potential in the district and the project area for livestock promotion, fishery, apiary, sericulture and agro-forestry.

Problem statement

Since the introduction of the scientific agriculture, farmers and consumers have lacked awareness and information on the dangers posed by chemical substances on the conventionally grown products to the growers, consumers and the environment. The conventional agriculture has provided for the usage of toxic materials in crop protection without putting into account the other problems they will generate and their effects. The soil fertility has been affected most given that in this form of farming, soil is no longer regarded as a living system constituent which should be kept free of pollution by poisonous chemical agents and consequently reducing its productive quality over time thus poor yields and eventually subjecting households to food insecurity. Human health has been put in danger in at least two major ways; the handlers of the synthetic farm chemicals do not comply with the worker safety rules when in operation and on the other hand residues of chemicals sprayed on crops ends up being ingested by the consumers of these foods. This therefore has been responsible for adverse health effects such as disruption of the hormone, nervous and immune systems. Conventional agriculture does not consider its impact on the environment either. So much pollution has resulted from environmentally careless practices such as chemical depositing causing decimation of insects and other organisms' populace, fertility decline, water, air and soil pollution. Mechanization has encouraged tree felling and loss of ground cover. This facilitates erosion and later desertification while monoculture which is best associated with mechanization, has brought about the loss of indigenous food stuffs and seed banks hence denial of communities' nutritional security. Over dependence on external inputs has made small scale farmers fall deeper into debts and progressive poverty levels because majority cannot cope with the ever rising prices of the farm inputs.

Livestock

Livestock are an important source of livelihood for rural households in Odisha. The farming system in Odisha is predominantly characterised by a mixed crop-livestock system. The latter is the main source of draught power and manure, a means of supplementary income and an asset for food security. The state has a large livestock population. Cattle are the primary livestock assets, followed by goats, as they account for nearly 60 per cent of the total livestock population. The role livestock plays in sustaining and enhancing poor people's livelihoods is being increasingly recognised and it can contribute significantly to poverty reduction. Livestock are also one of the most important productive assets in the rural areas and function as insurance mechanism to cope with household related crisis (Ahuja *et al.* 2000; World Bank, 1999; LID, 1999). Access to cost-effective quality livestock services will be one of the critical factors in translating the growing urban demand for livestock products into an opportunity for poor livestock keepers.

Integrated Livestock Development Programme (ILD) in the Koraput district supported by Danish Agency for International Development (DANIDA) was operating in 100 villages located in 4 Blocks in the Koraput district of Odisha covering 5000 tribal families. The project, which was initiated in 1993, has adopted an integrated approach to livestock development which focused on poverty reduction.

The livestock population of the district is quite substantial as seen from the Table.

Table 1.6. Livestock population in Koraput District and production

S.No	Name of livestock/product	No. /Ton as per 2011-12 report
1	Buffalo	175993
2	Cattle (CB)	16588
3	Cattle (Indigenous)	508387
4	Cows (CB)	13127

5	Cows (Indigenous)	22435
6	Sheep	126261
7	Goat	158084
8	Poultry	848582
9	Pig	51382
	Production	
10	Milk	130640 ton
11	Egg	14181000
12	Meat	1862 ton

Source: DES, Odisha, 2011

There is tremendous scope for livestock promotion in the district due to favourable climate and market. There are 25 hospitals/dispensaries and 111 livestock aid centres in the district for treatment of animals. Still there is a need to strengthen the animal health improvement system and cultivation of fodder crops for development of dairy. Focus should also be given on backyard poultry. Breed upgradation, upkeep and maintenance, housing, animal health care, vaccination, insurance and marketing have to be improved in the district.

Fishery is another rewarding livelihood option. The annual production of fish in the district is only 3786 ton. (DES, 2011). The district has got good nos. of Gram Panchayats, Revenue and private water bodies of which most of the tanks are seasonal, need renovation for taking up semi-intensive and intensive pisciculture. There is good nos. of reservoirs, MIPs, existing in the district suitable for pisciculture. The district has feasible water area of 6160 ha for fishery. There are 2 nos. of Govt. Fish farms in the district one at Jeypore and another at Kotpad with the prime objective of catering the seed demand of the district as well as neighbouring districts. The total area of Jeypore and Kotpad fish farm are 24.67 Ac. and 2.96 acre, respectively. At present the Kotpad fish farm is being used by OPDC on lease basis. With the available infrastructure and market there is scope for improvement of fishery in the district.

Non-farm/NTFP

Household members of the district collect various minor forest products for most of the year and seek wage labour in and around their village. It is common for members of the household to visit weekly markets to make small purchases (such as grains available from the public distribution system), to indulge in drinking country liquor (and, of late, branded types) (adult males) and to seek credit for substantial expenditures on social functions, food grain procurement and health services. A typical household either is landless or operates a very small holding. One-third of households do not own any land and the average holding size is three acres. The problem is not so much one of access but one of land title quality, since a large proportion of the land has not been surveyed. Estimates for forest produce cover the value of marketed products only. In this respect, income estimates are underreported. An important component of households' coping mechanisms is increased use of forest resources for self-consumption and for selling in the market. The latter is generally underreported but the reality is that NTFP is an important part of households' livelihood strategies under normal situations and becomes an increasingly significant component of coping mechanisms during shocks.

Processing of tamarind, mahua flower, hill broom, leaf plate, roots and tubers, medicinal plant parts, honey, tasar are taken up by the poor tribal communities. However, due to want of storage space and technology they are not able to raise their bargaining power.

1.6 NREGA in Odisha

Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) is a major flagship programme of India, which was enacted by the government of India as the National Rural Employment Guarantee Act (NREGA) in September 2005. This social welfare programme is primarily intended to enhance the livelihood securities of the people in rural areas by supplementing wage employment opportunities to the unskilled labor force. The programme is in force with the intention that it would act as a strong safety net for the poor in the wake of lack of alternative employment opportunities. In an attempt to ensure the rural economy to grow, the scheme is expected to regenerate the rural natural resource base for sustainable livelihood by carrying out soil and water conservation activities. The other key attributes of this scheme are time bound guarantee, labour-intensive work, decentralized participatory planning, women's empowerment, work site facilities and above all, transparency and accountability through the provision of social audits and right to information. The unprecedented use of information technology in this programme is considered to bring about greater transparency through intensive monitoring and faster execution. The payment of wages through bank and post office accounts is another innovative step that is likely to reduce fudging of the muster rolls on the part of the implementing agencies since the actual payments are beyond their reach.

MGNREGA was shifting its priority from material intensive work to natural resource management, financial inclusion, facilitating livelihood opportunities and extending irrigation facilities for people at grassroots in Koraput district. The district had vast intermediate patches of un-utilized land and efforts were now on for maximizing its proper utilization through MGNREGA by expanding the basket of project keeping in view of the geographical condition of the district. While the district had a target of generating 3,95,115 man days for 97,334 household with an estimated expenditure of Rs.99,80,51,649 in 2013-14, the district had achieved in generating 7,11,277 man days for 40918 household with an expenditure of Rs.13.2 Cr as on date. The most encouraging factor was that out of the total 2.84 lakh MGNREGA job card holders, 1.25 lakh of them had opened their accounts in banks for receiving their payment through e-account transfer process.

1.7 Existing Livelihood Initiatives and Social Sector Initiatives

External aided Orissa Tribal Empowerment & Livelihoods Programme (OTELP) is being successfully implemented in 30 backward remote blocks of 7 southwest districts of Odisha including Koraput since 2005 benefiting 56180 families spread over 1034 villages. It adopts micro watershed as unit of planning and implementation with community participation for livelihoods promotion including farm, off farm and nonfarm enterprise interventions. The results so far are encouraging and have impacted the lives of tribal families in the area of operation with improved field crops production, food security and physical infrastructure etc. With the success of ongoing OTELP and its impact over tribal people, the Govt. of Orissa has pleased to extend the programme into additional 251 MWS, likely to cover nearly 700 villages in Malkanagiri and Koraput districts. This new extended programme named as OTELP Plus with state government funding will operate in the uncovered micro watersheds in 12 blocks of both the districts from 2011-12. This programme will address the key livelihoods issues of about 40,000 tribal families in these selected remote villages. Like present OTELP, it will adopt a seven years project cycle with a total cost of Rs.263.94 crores. The state government will finance Rs.76.90 crores from state plan and the rest will be sourced from various mainstream development programmes like MGNREGS, BRGF, RKVY, NHM, Biju KBK etc. These funds will be routed to the respective Village Development Committees through the ITDAs. Both OTELP and OTELP plus are being implemented in Potangi, Nandapur, Bandhugaon, Narayanpatna, Baipariguda and Lamtaput Blocks of Koraput district.

The State Government has launched a three-pronged strategy to eradicate poverty through the Odisha Livelihood Mission (OLM). The strategy includes social mobilisation for capacity building to increase income of the poor, extending bank linkages to create employment opportunities and enhance micro-finance to reduce vulnerability. The Mission has intensified its activities for strengthening community-level institutions to make its interventions self-sustaining. Capacity of the self help groups (SHGs) and producer groups are enhanced through skill upgradation to make proper use of funds pumped into the sector. Though the programme aimed at covering all the households and bringing one woman of each family into the SHG fold, it has not been possible due to lack of mobilisation by the field level functionaries, official sources said. Five to 15 SHGs spread over one or two villages are being organised into cluster level forum (CLF). Meanwhile, Gram Panchayat level federation (GPLF) and block level federation (BLF) have been completed, the sources said. Professional resource persons (PRP) at block level have been selected to provide requisite service to GPLFs, CLFs, producer groups and SHGs. Besides, community resource persons have been chosen from among the practitioners and members of the SHG to operate at GP level on performance based incentive for support activities to producer groups.

1.8 PIA's Prior Experience

LAVS has earlier working experience in mobilisation of women SHGs, working at village level in Koraput district for livelihoods security and empowerment of tribals under Odisha Tribal Livelihoods and Empowerment Programme (OTELP), community mobilisation in Odisha Community Tank Management Programme (OCTMP), village level micro-planning in Kalahandi District under WFP, and watershed management programme with NABARD assistance. With the prior experience in similar fields, we are confident to manage the MKSP in Pottangi & Semiliguda Blocks of Koraput district.

BASIC PIA INFORMATION

1	Name of PIA	Life Academy of Vocational Studies (LAVS)	
2	Legal Status (NGO / Network NGO / CBO / Producer Co. /Section-25 Co. / Pvt. Co/ Other – Please specify)	Society registered under Societies Registration Act XXI of 1860	
3	If Network NGO, number of partners being supported?	Not working in net-working mode	
4	Registration No. & Date of Registration	Registration No.: 3710/384 of 1991-92 Date of registration: 28. 11.1991	
5	Name of Donors in the past 3 years, if any (give max 3)	<ol style="list-style-type: none"> 1. Orissa Tribal Empowerment & Livelihoods Programme (OTELP) under ST&SC Department, Government of Odisha funded by DFID, WFP, IFAD and Govt. of Odisha 2. Department of Water Resources, Govt. of Orissa (Orissa Community Tank Management Project funded by the World Bank) 3. Watershed Development Project funded by NABARD, RO, Bhubaneswar 	
6	Name with Size (Budget in INR) of relevant projects handled in	Name	Size
		Orissa Tribal Empowerment & Livelihoods Project (OTELP)	7,00,00,000/-

LIFE ACADEMY OF VOCATIONAL STUDIES (LAVS)

	the past 3 years (give max 3)	Food For Human Development	55,57,739/-
		Watershed Development Project (NABARD)	3,50,00,000/-
7	Annual Revenue of PIA for the most recent audited financial year	Rs. 10, 584, 034/- (FY 2010-11)	
8	List ongoing projects (max 3) and their Size (INR)	Name	Size
		Orissa Tribal Empowerment & Livelihoods Project (OTELP)	7,00,00,000/-
		Orissa Community Tank Management Project (OCTMP)	18,00,000/-
		Watershed Development Project (NABARD)	3,50,00,000/-
9	Completion of last project (MM/YY)	12/10 (Village Development Micro Plan project funded by World Food Programme at Jugisaipatna of Kalahandi district)	
10	Total value of assets available with the PIA.	Rs. 19,18,944.00 (as on 31.03.2011)	
11	Experience of working with		
(i)	Women SHGs/Groups (Y/N)-1(a) in Appraisal Sheet	Yes, since the year 2000, LAVS has been working with Women SHGs (formation, nurturing, external credit support etc.)	
(ii)	Agriculture based livelihoods with existing women groups (Y/N) 1 (b) in Appraisal Sheet. If YES, please elaborate in section B.1	Yes, LAVS has been implementing projects involving women farmers in Micro plan project, OTELP, OCTMP and Watershed Development Project. It has also undertaken studies relating to 'Women centric agriculture enterprise in Orissa' funded by OXFAM.	
12	In the proposed project, what % of the implementation will be undertaken by existing capacities and what % will be leveraged from external community based organizations in the project area? – 1 (d) in Appraisal Sheet	Existing – 60% External – 40%	

Human Resources

Name	Sex (M/F)	Position	Education qualification	Relevant Experience (Years+ Sectors)
Bansidhar Sarangi	M	Extension Specialist	M. Sc. (Ag)	31 years of Agriculture extension sectors in different positions in Dept. of Agriculture, Govt. of India
Prabir Kumar Nandi	M	Agricultural Expert	M. Sc. (Ag)	29 years in Procurement, Contract Management, Disbursement, Marketing, Capacity Building of farmers, linkage with marketing facilities,

				buy back arrangement and linkage with financial institutes.
Pravakar Ray	M	Extension Specialist	M. Sc. (Ag)	35 years in Agriculture Extension
Krishna Chandra Aich	M	Soil & Water Conservation Specialist	M. Sc. (Ag)	35 years in Agriculture in Soil Conservation
Subrat Kumar Pattanaik	M	MF & ME Coordinator	Graduate	12 years in micro-credit extension & micro enterprise development
Paramananda Rana	M	Livestock Specialist	M. Sc.	7 years in livestock management
Umakanta Mishra	M	CRP	Matriculate	8 years in Community Mobilization
T. P. Rama Rao	M	CRP	Matriculate	10 years in Community Mobilization
Ganapati Pangi	M	CRP	Matriculate	7 years in Community Mobilization
Dhaneswar Burudi	M	CRP	Matriculate	5 years in Community Mobilization
Laxman Khara	M	CRP	Matriculate	6 years in Community Mobilization
Sukra Kata	M	CRP	Matriculate	7 years in Community Mobilization
Basudev Khara	M	CRP	Matriculate	7 years in Community Mobilization
Kishori Rout	F	CRP	Matriculate	7 years in Community Mobilization
Radhamani Guntha	F	CRP	Matriculate	7 years in Community Mobilization
Sasmita Khila	F	CRP	Matriculate	7 years in Community Mobilization
Sunita Khila	F	CRP	Matriculate	7 years in Community Mobilization
Gorikata Bali	F	CRP	Matriculate	7 years in Community Mobilization

Audited financial statements of last three years are attached

Infrastructure Base

1. Training hall
2. Tele-Connectivity
3. Computer with accessories/ printer
4. Office equipment
5. LCD projector with screen
6. White Board
7. Vehicle

Resource Base for Training: Six resource persons as shown as Human Resources (Sl. 1 to 6) can be deployed as trainers.

Chapter-2

Detailed Intervention Strategy and Phasing

2.1 Objectives of the Project

To improve the present status of women in Agriculture, and to enhance the opportunities for her empowerment, Government of India has announced "Mahila Kisan Sashaktikaran Pariyojana" (MKSP), as a sub component of the National Rural Livelihood Mission (NRLM). MKSP strives to improve the present status of women in Agriculture, and to enhance the opportunities for her empowerment. The core agenda of MKSP is to create sustainable institutions around agriculture and allied activities, create sector specific and geography-specific best package of practices and create a wide pool of community resource persons for scaling up livelihood interventions in the country. *The primary objective of the MKSP is to empower women in agriculture by making systematic investments to enhance their participation and productivity, as also create and sustain agriculture based livelihoods of rural women*

Specific objectives of MKSP are as under:

- To enhance the productive participation of women in agriculture;
- To create sustainable agricultural livelihood opportunities for women in agriculture;
- To improve the 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 the community level;
- To enable women to have better access to inputs and services of the government and other agencies;
- To enhance the managerial capacities of women in agriculture for better management of bio-diversity;
- To improve the capacities of women in agriculture to access the resources of other institutions and schemes within a convergence framework.

The present proposal aims at bringing desirable improvement in socio-economic leverage and provides better income to the small and marginal women farmers of in Pottangi and Semiliguda blocks of Koraput district in Odisha.. The project will not only provide policy leverage but also will ensure better group cohesiveness among the women farmers in selected proposed areas where high poverty and exclusion have been the order of the day. The primary objectives of the project are to empower women in agriculture by strengthening common institutions of poor women and leverage their strength to promote sustainable agriculture.

Vision of Success

The vision of success of the project is to cover all aspects of development sphere for women farmers with concerted efforts to heave up individual income to group income to a greater height so that the farmer will live in peace and prosperity. The project aims at creating significant number of skilled, knowledgeable and confident woman farmers in the area who can use household level resources sustainably for ensuring household food and nutrition security and household livelihood security. The project seeks to address the anomalies and aberrations in the development paradigm by bringing women and women led initiatives to central stage in all efforts aiming to bring about a comprehensive social transformation based on equity, justice, inclusion and

non discrimination. The project is inspired by the vision of a social order where women and men are treated equally and provided opportunities to freely make choices for a dignified living and sustainable development.

The expected results will be:

- The targeted women farmers adopt appropriate technology to practice sustainable agriculture with efficient utilisation of resources
- The women farmers take up collective marketing of agricultural inputs and outputs ensuring market linkage of SHGs/Clusters for maximum realization of farm income
- The women farmers are trained and supported to increase their bargaining power and strengthen agricultural value chains through appropriate capacity building
- Village resource persons are in place to extend all sorts of support to the women farmers
- Ensure viable and sustainable primary sector livelihoods of the target groups based on local resources, indigenous technologies and make the agriculture resilient to climate change
- Reduce drudgery of farm women and make the farming eco-friendly

Goals

The goal of the project is to empower women in agriculture to enhance their capacity to increase their farm income sustainability through adoption of sustainable agricultural practices, conservation of bio-diversity, natural resource management and ensure household food and nutrition security through on-farm and non-farm enterprises.

Key Outputs /Outcomes

Development/ Strengthening of Social Infrastructure

The project will strengthen WSHGs, Producer Groups, NTFP collectors/ sellers cooperatives, federations and networks to facilitate institutionalized operations in various gainful activity segments. Additionally, it will promote and strategically locate change makers stimulating innovation and best practices in management, collection, production and exchange. It can result in following outcomes:

- Existence of self-managed, member owned & member controlled financially sustainable community based organizations
- Improved knowledge and skills of targeted members
- Positive change in the perception and behaviour of targeted communities in terms of better repayment culture, enhanced gender and social equity and greater social responsibility
- Demonstration of better bargaining and negotiation skills while dealing with external organizations viz., banks, Government and other institutions.
- Women will be able to participate proactively in all the development activities and influences pro-poor policy making.
- A cadre of para-professionals (CRPs) will be developed in the project operational areas, which will be sensitive to a more inclusive approach to development, and have a strong commitment for developing and promoting participatory mechanisms.
- “Learning partnerships” between different sets of institutions (such as government and NGOs, PRIs and NGOs, PRIs and the administration, community organizations and PRIs).

Social outcomes

The greatest advantage of the project lies in its attempt to develop and tap social capital in deepening development outreach and effectiveness. The attempt is bound to succeed since women are being targeted as catalysts. The projected success has far reaching consequences in terms of

transcending gender relations. Enhanced social solidarity, unity of purpose, trusted leadership, widespread linkage, varied exposure and external facilitation will go a long way in revitalizing community institutions and initiatives.

Increased access to income through remunerative female work participation can kick start a chain of results by way of improved self esteem, well being and human development investments. As an important offshoot of the project, one may witness a sharp fall in distress migration and vulnerability to alien influences including naxalism.

Economic outcomes

The project is highly productive in terms of economic benefits that will be generated for the targeted beneficiaries. Some of these benefits are mentioned below:

- There will be certain increase in the per capita income of the targeted women.
- Women shall be enabled to earn independent income through on-farm, off-farm and non-farm activities
- Convergence of poverty alleviation schemes and employment guarantee schemes like MGNREGS.
- The dominance of private moneylenders charging exorbitant rates of interest shall be curbed.
- Social development inputs shall gradually eliminate vested interests that plunder the poor by making them victims of alcohol, opium and drugs.
- Better health conditions will reduce the burdensome expenditure on health.
- The needs of handicapped, destitute and aged shall be better addressed when improvement in the standard of life shall make it possible to afford care for such dependants.

Environment outcomes

The outcomes envisaged are:

- Improved and sustainable management of natural resources including land, rainwater, ground water, waste and barren areas.
- Increased community involvement in plantation, social forestry, horticultural activities, and cultivation of medicinal, aromatic and nutritional plants.
- Steady reduction in the involvement of local communities in the smuggling of forest related items and illegal felling of trees.
- Effective implementation of official schemes on Joint Forest Management and Community Based Forest Management schemes.
- Enhanced community participation in flood control and disaster prevention/ preparedness measures.
- Wider dissemination of information on adverse impact of climate change and other emerging ecological disasters.

Specific Outputs

- The project will support 3000 direct beneficiaries of Pottangi & Semiliguda Blocks of Koraput district

- There will 30% increase in farm income of the beneficiaries and agricultural productivity
- 70% of the women in agriculture and their families will have physical and economic access to adequate food and nutrition
- Crop intensification and diversification will be achieved in the project area and cropping intensity will enhance by 20%
- 60% of women farmers will increase their level of skill and access to production inputs and technologies to adopt sustainable agricultural practices
- 90% of women in agriculture have increased access to market and market information for better marketing
- 45% of women members increased access to productive land, inputs, credit & technology
- 70% of women beneficiaries will adopt market-led extension and ensure market linkage
- 60% of arable land will have access to soil health measures, INM, IPM and integrated water management practices
- 70% women in agriculture have reduced their drudgery
- Visible increase in adoption of eco-friendly technologies for organic farming
- Substantial reduction of out-migration
- Increase in seed replacement rate by 10% and resort to decentralised seed production
- Adoption of integrated farming system for better utilization of resources by 20% women farmers
- Conservation of agricultural bio-diversity in the villages
- Increase area under irrigation by 20% due to adoption of soil and water conservation technologies and rain water harvesting
- Value addition to agricultural produce by 50% women farmers
- Adoption of integrated natural resource management techniques by 50% women farmers

Expected Outcomes

- Net increase in the incomes of women in agriculture on a sustainable basis;
- Improvement in food and nutritional security of women in agriculture and their families;
- Increase in area under cultivation, cropping intensity and food production by women;
- Increased levels of skills and performance by women in agriculture;
- Increased access of women in agriculture to productive land, inputs, credit, technology and information;
- Drudgery reduction for women in agriculture through use of gender friendly tools / technologies;
- Increased access to market and market information for better marketing of their products;
- Increased soil health and fertility to sustain agriculture based livelihoods;
- Increased visibility of women in agriculture as an interest group – in terms of increased number of women institutions and increase in their entrepreneurship.

2.2 Project Strategy

The project seeks to:

- Build on the social capital in form of 200 women SHGs with 3000 members, 90 Village Level Committees (VLC) and 2 SHG Federations formed by LAVS in Pottangi and Semiliguda Blocks of Koraput district in Odisha

- Application of technologies like INM, IPM, Integrated NRM, SRI, intensive farming systems with the principles of sustainable agriculture through demonstration, field trials, training and exposure visits
- Strengthening collection of NTFP, processing and taking allied activities like livestock production and fishery for increasing farm income and ensuring livelihoods security
- Enhancing the capacity of the women farmers to adopt eco-friendly technologies, measures for bio-diversity conservation and resilient agriculture to climate change
- Strengthening market linkage for marketing of inputs and agricultural outputs
- Promoting livestock production, processing of NTFP and value addition & agro-processing of agro-products by landless families
- Establishing linkage with PRIs of 10 GPs for convergence of RD programmes like MGNREGA, NRLM, NSAP, RKVY, NFSM, ATMA and also with Department of Fisheries and Animal Resource Development for accessing inputs and technologies

2.3 Community Institutions Architecture

a. Past Experience of PIA in the proposed area

(a).1 LAVS has been working on Sustainable Livelihoods, Women Empowerment, Tribal Development, Forestry and Natural Resources Management sectors since last twenty years. It has successfully implemented a number of participatory projects with the grant support from Ministries and Departments of Government of India, State Government and other Agencies. It has been a prominent partner of UNWFP, NABARD and OTELP in Koraput district.

Sustainable Farm Livelihood interventions at the community level facilitated by LAVS are: capacity building and hands-on support to small and marginal farmers for piloting and experimentation on sustainable livelihood; experiential blending of traditional, organic and low-input farm practices; and promotion of farmers' groups/federations, community farming and grain bank and integrated watershed regime. Network level interventions include: capacity building and hands on support to intermediaries for promotion of sustainable agriculture; and identification and demonstration of best practices for replication by others.

Sustainable Non-Farm Livelihood activities at the community level facilitated by LAVS are: expansion of the self-help process; skill building support for promotion of micro-enterprises; networking with different institutions for financing, skill building, marketing and trade promotion. Such activities at Network level include: capacity building support to federations; financial inclusion drives and development of learning kits/manuals/training aids/IEC programmes and packages on self-help/micro-entrepreneurship.

LAVS is working on agricultural aspects in OTELP, OCTMP and Watershed projects funded by NABARD.

LAVS has organized women and men in the project area under SHGs, Farmer Groups and Federations. Among other things, streamlining NTFP collection and trade cycle has been attached due priority by the organization. The activities undertaken are presented below:

- Community organization and mobilization
- Formation of community groups- SHGs, Farmer groups, Federations, JFMCs, CFMCs, Marketing Committees etc
- Training and exposure to community groups
- Institution development support
- Strengthening of community management processes
- Technology transfer for drying, grading, storage

- Business Development Plan based on market intelligence and value chain analysis
 - Bank linkage programme for credit
 - Extension services
1. The SHG movement in Odisha has become synonymous with economic empowerment of women. LAVS has targeted to bring women from each household in its operational area under SHG fold. Creation of a strong network of Women SHGs and federations in the core villages is a remarkable achievement. The Women SHGs on their part through their active participation have been institutionalized with a fair degree of cohesion and functional efficiency. Good SHGs have become role models for others.

The greatest advantage of the project lies in its attempt to develop and tap social capital in deepening development outreach and effectiveness. The attempt has succeeded since women SHG leaders have played the role of catalysts. The progress has far reaching consequences in terms of transcending gender relations, enhanced social solidarity, unity of purpose, trusted leadership, widespread linkage, varied exposure and external facilitation empowering women in the project area.

Women SHGs have also supplemented efforts for Sustainable Management of Natural Resources including land, rainwater, ground water, waste and barren areas. Increased community involvement in plantation, social forestry, horticultural activities, cultivation of medicinal, aromatic and nutritional plants have been promoted to boost food and income security. SHGs have gained reasonable competence in NTFP collection and trade.

2. LAVS is working on the following areas for enabling access to credit and marketing of the women SHGs.
 - Business Development Support/ Bank-FI Linkage
 - Marketing Support
 - Facilitation for institutional credit, insurance and support services.
 - Multi-stakeholder partnerships and interface for sharing/ up-scaling best practices and convergence and coordination.
 - Collective marketing

(b) Proposed Plans/Strategies as part of the project

1. The primary focus of the project is to Community organization and social mobilization to upscale best practices on sustainable agriculture Awareness campaign will be organized in each village about the project. The SHGs and VLCs will be actively involved in preparation of micro-level plan and activity schedule. Farmer-wise business plan will be prepared and presented to the VLC for their approval. Community resource persons will be selected and suitably trained to guide the women farmers. Funds flow will be made to the women SHGs with the knowledge of the VLC through cheques. Training will be given by the CRP for record maintenance at SHG level. The VLC will decide the course of action and CRP will provide handholding support. Training will be organized by the PIA by deploying suitable technical man power .Key inputs will be supplied by the PIA in consultation with relevant government department from authentic sources and supplied to the SHGs with the knowledge of VLC. The CRP will supervise proper utilization of the inputs. Monthly report will be prepared by the VLC with the help of CRP and submitted to the PIA. Promotion of livelihoods through on-farm, off-farm and non-farm activities will be the key issue during the project period. The specific strategies would be:

- The CRPs will be accountable to the SHGs and managed by them. A monthly honourarium will be given by the SHG to the CRP on the basis of their performance. The VLC will also oversee the activities of the Familiarization meetings and workshops
 - Preparation of micro-level plan in consultation with the VLC
 - Capacity building of CRPs and SHGs through training, workshop and exposure visits
 - Business plan development on micro-enterprises
 - Participatory technology development and dissemination
 - Marketing support and credit support through bank linkages
 - Convergence with ongoing schemes of related departments
2. There will be a participatory monitoring system and self appraisal report has to be submitted by the CRP to the PIA with the recommendation of the SHG and VLC. The specific strategies would be:
 - Signing MOU with the SHGs
 - Training to the SHGs on record maintenance and performance assessment
 - Monitoring the activities of the CRPs by the VLC
 - Submission of monthly progress report by the CRPs
 - Payment of honourarium to CRPs basing on the resolution of the SHGs
 3. The achievement of programme will be reviewed by a joint meeting of the SHG members, VLC and representatives of PIA. A structured check list will be used to monitor the progress. There will be field days towards the end of the crop season to study the impact of the interventions and other villagers will be free to participate to take a stock of the learning and good practices.
 4. Training will be given to the CRP and SHG members for adoption of best practices on key interventions. A few demonstrations will be conducted and farmers' field schools (FFS) will be organized at the village level right from seeding to harvesting at fortnightly intervals for motivation of the community. Some exposure visits will be organized for conviction of the farmers. A few field trials will also be conducted to compare the improved practice/variety with the existing one. The best practices will be documented for further scaling-up. Suitable audio visual aids and manuals in pictorial form will be developed by the PIA and distributed to the CRP for field use.
 5. Two federations will be formed at Block levels and the SHGs will be federated to the federations. Collective marketing of agricultural produce and inputs along with custom hiring of the implements/equipment will be taken up by the federations. Storage godowns will be constructed at federation and SHG level for storage of agricultural and non-agricultural inputs/outputs. The federations will act in the similar manner as in the case of Producer Company.
 6. The VLC will identify a CRP from the village, who will act as a barefoot extension worker in the village. The CRP should be a literate person with skill to write and maintain records. The CRPs will be suitably trained in communication techniques and subject matter at Block level. S/he will be paid honourarium of **Rs 2000/month**. The CRP will provide handholding support to the farmers on adoption of improved technology, demonstrate good practices and use of key agricultural inputs. S/he will be community

link worker for ensuring supply of inputs and marketing of agricultural and non-agricultural inputs.

7. The VLC will be responsible for programme implementation. The VLC will select a sub-committee who will be responsible for accounting of funds, supply of inputs, monitoring of the implementation of the project. While the VLC will approve the plan of action, the sub-committee will implement the plan and will be accountable to the VLC. The VLC will approve the expenditure and will conduct social audit at the end of each crop season. The sub-committee will prepare the MPR and expenditure statement and submit to the PIA with the recommendation of the VLC

Chapter-3

Detailed Programme Components

The villages coming under proposed project areas are characterized by predominantly rain-fed situations with limited irrigation facilities are available for hardly 10% of the net sown area. However, there is appreciable rainfall and cooler climate in the region. The soils are suitable for paddy, non-paddy and horticultural crops. Communication and marketing facilities are available for cash crops. Keeping all these in view, the strategies and key interventions have been suggested.

3.1 Detailed proposed Action

3.1.1 Plan for promoting food and nutritional security for women farmers

Food and nutritional security of the target groups will be ensured when they have availability, access and absorption of balanced food to meet their caloric need and nutritional need of all members of the households.

Availability: The project will facilitate the women in agriculture to enhance their agricultural production from field crops, horticultural crops and plantation crops. Subsidized food will be made available to them as Food Security Act, 2013 and TPDS . The concept of community grain bank will be introduced in the project area.

Access: Once the purchasing power of the women is increased by enhancing their income from on-farm, off-farm and non-farm activities, they will be in a position to have physical and economic access to food. By adopting sustainable agricultural practices, they can have environmental access to food. The employment generating and poverty alleviation programmes like MGNREGA, ICDS, NRLM etc will be helpful to the SHG members to raise their income and access to food.

Absorption: Food utilization requires access to safe drinking water and proper nutritional education, sanitation, health and hygiene. The project will ensure this through capacity building programme.

The nutritious cereals like maize, jowar, bajra, ragi, lesser millets are preferred crops of the tribals. Pulses and edible oil seeds are other crops of choice. Vegetables and fruits are grown by the tribal families. Livestock rearing and collection of roots and tubers from the forest are also taken up by them for ensuring food security. Food security has mainly three dimensions such as availability, access and food absorption. In order to have availability the farmers will be supported to diversify cropping patterns, adopt integrated farming system and raise productivity of crops. In order to gain economic access they have to raise their purchasing power. This can be achieved by raising their household income by on-farm and off-farm activities. The food absorption can be achieved by health and hygiene and use of safe drinking water. Keeping this in view the key interventions will be:

- Rice cultivation in SRI method
- Increasing area under vegetable cultivation including off-season vegetables and monsoon potato
- Increase area under cultivation of pulses (pigeon pea, pea, black gram) and oilseeds (sun flower and mustard)
- Cultivation of cash crops like spices (ginger & turmeric) and fruit crops (mango, banana, papaya, citrus and pine apple)
- Back yard poultry and goat rearing

- Apiary, mushroom cultivation and nutritional garden
- Collection and processing of NTFP (tamarind, mahua, hill broom, leaf plates, resins, honey, medicinal plant parts)
- Agro-processing like turmeric powder, pickles, rice, dal and oil

3.1.2 Strategies for adoption of sustainable agricultural practices

a. Soil Health Management

Optimum crop production on a sustainable basis requires soil health management which will keep the physical, chemical and biological properties of soil without any deterioration. Enhancing organic matter content of the soil through application of compost, green manuring, bio-fertilisers, and chemical fertilizers on soil test basis will be desirable for soil health management. Regular additions of organic matter improve soil structure, enhance water and nutrient holding capacity, protect soil from erosion and compaction, and support a healthy community of soil organisms. Practices that increase organic matter include: leaving crop residues in the field, choosing crop rotations that include high residue plants, using optimal nutrient and water management practices to grow healthy plants with large amounts of roots and residue, growing cover crops, applying manure or compost, using low or no tillage systems, and mulching. Amendment of acid soil by application of lime will be desirable.

Reducing tillage minimizes the loss of organic matter and protects the soil surface with plant residue. Tillage is used to loosen surface soil, prepare the seedbed, and control weeds and pests. But tillage can also break up soil structure, speed the decomposition and loss of organic matter, increase the threat of erosion, destroy the habitat of helpful organisms, and cause compaction. New equipment allows crop production with minimal disturbance of the soil. **Manage pests and nutrients efficiently:** An important function of soil is to buffer and detoxify chemicals, but soil's capacity for detoxification is limited. Pesticides and chemical fertilizers have valuable benefits, but they also can harm non-target organisms and pollute water and air if they are mismanaged. Nutrients from organic sources also can pollute when misapplied or over-applied. Efficient pest and nutrient management means testing and monitoring soil and pests; applying only the necessary chemicals, at the right time and place to get the job done; and taking advantage of non-chemical approaches to pest and nutrient management such as crop rotations, cover crops, and manure management.

Prevent soil compaction: Compaction reduces the amount of air, water, and space available to roots and soil organisms. Compaction is caused by repeated traffic, heavy traffic, or traveling on wet soil. Deep compaction by heavy equipment is difficult or impossible to remedy, so prevention is essential.

Keep the ground covered: Bare soil is susceptible to wind and water erosion, and to drying and crusting. Ground cover protects soil, provides habitats for larger soil organisms, such as insects and earthworms, and can improve water availability. Ground can be covered by leaving crop residue on the surface or by planting cover crops. In addition to ground cover, living cover crops provide additional organic matter, and continuous cover and food for soil organisms. Ground cover must be managed to prevent problems with delayed soil warming in spring, diseases, and excessive build-up of phosphorus at the surface.

Diversify cropping systems: Diversity is beneficial for several reasons. Each plant contributes a unique root structure and type of residue to the soil. A diversity of soil organisms can help control pest populations, and a diversity of cultural practices can reduce weed and disease pressures. Diversity across the landscape can be increased by using buffer strips, small fields, or contour strip cropping. Diversity over time can be increased by using long crop rotations. Changing vegetation across the landscape or over time not only increases plant diversity, but also the types of insects, microorganisms, and wildlife that live on your farm.

The key interventions will be:

- Improved compost preparation
- Vermi-compost preparation
- Application of bio-fertilisers
- Application of green manures
- Use of eco-friendly implements for tillage
- Use of pot manure and liquid manure
- Crop diversification
- Cultivation of legume crops
- Use of organic mulches

Integrated Nutrient Management (INM)

Integrated Nutrient Management refers to the maintenance of soil fertility and of plant nutrient supply at an optimum level for sustaining the desired productivity through optimization of the benefits from all possible sources of organic, inorganic and biological components in an integrated manner. The basic concept of integrated nutrient management (INM) or integrated plant nutrition management (IPNM) is the adjustment of plant nutrient supply to an optimum level for sustaining the desired crop productivity. It involves proper combination of chemical fertilizers, organic manure, crop residues, nitrogen fixing crops (pulses, groundnut and soya bean) and bio-fertilizers suitable to the system of land use and ecological, social and economic conditions. Plant nutrients stored in the soil. Organic recycling is especially promoted through INM for facilitating nutrient recycling to improve soil fertility and productivity at low cost. Goals of INM.

The INM technologies must be compatible with the local farming system if they are to find acceptance and adoption. Therefore, attention must be paid to examine the interactions among different components of INM and the management of crops and animals that form the farming system. Some of the agronomic parameters which need attention are cropping pattern, intercropping practices, biological condition of the field (weeds, diseases, insects), soil conditions, irrigation facilities and climatic conditions. Besides inorganic fertilizers as the major component, others include farmyard manure (FYM), composts, green manure, crop residues, crop rotation and bio-fertilizers.

The key interventions will be:

- Farmers' training on INM technology
- Demonstration on INM
- Supply of Bio-fertilisers like Rhizobium culture, Azotobacter, Azospirillum and PSB
- Crop rotation

b. Soil and Water Conservation and Ground Water Recharging

Sustainable increase in agricultural incomes will be sought mainly through the development of small and medium-scale water harvesting infrastructure, together with soil conservation works and complementary activities to provide technical support to beneficiary farmers. The main objective is to achieve a substantial and sustainable increase of water availability for irrigation

Soil conservation is a set of management strategies for prevention of soil being eroded from the Earth's surface or becoming chemically altered by overuse, acidification, salinization or other chemical soil contamination. Soil and water conservation will enhance ground water recharge. Soil and water conservation techniques like field bunding, in-situ moisture conservation, growing of cover crops, gully plugging, and rain water harvesting through water harvesting structures, farm

ponds, cross bunds and diversion weirs are necessary for sustainable agriculture. The key interventions will be:

- Construction of cross bunds and water harvesting structures
- Field bunding and compartmental bunding
- Construction of V-ditch
- Construction of farm ponds

c. Integrated Pest Management (IPM) and Natural Pest Management (NPM)

Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment.

The IPM approach can be applied to both agricultural and non-agricultural settings, such as the home, garden, and workplace. IPM takes advantage of all appropriate pest management options including, but not limited to, the judicious use of pesticides. In contrast, *organic* food production applies many of the same concepts as IPM but limits the use of pesticides to those that are produced from natural sources, as opposed to synthetic chemicals.

Natural pest management refers to use of organic chemicals or natural enemies of crop pests like predators and parasites for pest management. **Biological control** is a bioeffector-method of controlling pests (including insects, mites, weeds and plant diseases) using other living organisms. It relies on predation, parasitism, herbivory or other natural mechanisms, but typically also involves an active human management role. It can be an important component of integrated pest management (IPM) programs. There are three basic types of biological pest control strategies: importation (sometimes called classical biological control), augmentation and conservation. Natural enemies of insect pests, also known as biological control agents, include predators, parasitoids, and pathogens. Biological control agents of plant diseases are most often referred to as antagonists. Biological control agents of weeds include herbivores and plant pathogens.

The key interventions for promotion of IPM and NPM will be:

- Demonstration and training in IPM
- Farmers' Field School on IPM
- Supply of bio-agents like Trichogramma
- Supply of pheromone and sticky traps
- Supply of neem based chemicals

d. Seed Production & Seed Treatment

In the modern seed industry a lot of attention is paid to protecting plants from different kinds of diseases and pests. This is sometimes accomplished by breeding varieties that are resistant to diseases, thereby protecting the crop through its growth cycle. However, when resistant varieties are not available or the level of resistance is not sufficient under high disease and pest pressure, the grower may decide to use crop protection methods i.e., applying plant protection compounds (chemicals or biological material). These compounds can be used in two ways, either as an application to the soil or sprayed directly on the plant. Such crop protection methods may require the use of significant quantities of active substances. An excellent alternative is to apply crop protection compounds directly to the seed before sowing. Such a treatment to the seed requires the use of very small quantities of active substances per unit area of land, and is a very effective and targeted method of controlling pests and diseases. Seed treatments are a valuable tool for Integrated Pest Management (IPM) as they exert little pressure on the environment. The key interventions will be:

- Training on seed treatment
- Supply of seed treating chemicals

Seed Production & Seed Testing i.e. seed is the primary agricultural input and carrier of technology. Quality seed alone can increase crop yield by 10%. Farmers can produce their own seed through seed village programme of individually by sowing foundation seeds. Farmers' own saved seeds may be stored scientifically for the next season. The concept of seed bank may be introduced.

Seed testing is performed in dedicated laboratories by trained and usually certified analysts. The tests are designed to evaluate the quality of the seed lot being sold. Several tests are done:

- Germination test: Reports the percentage of seed that germinated. Tests are usually made in 200 or 400 seed samples.
- Purity test: The percentage of seed described on the label that is actually found in the quantity of seed.
- Weed test: Examines a sample of seed and identifies every seed that is different from the labeled seed kind.

The key interventions would be:

- Training on seed production and seed testing
- Supply of seed treating chemicals
- Community seed production through seed village programme
- Operation of seed bank at village level

e. Risk Management

There are some good practices which can be adopted for risk management.

- Diversified cropping system (strip cropping, inter cropping and mixed cropping)
- Integrated agro-forestry practices with cropping systems
- Soil erosion control.
- Increased irrigation

Crop insurance and animal insurance schemes will be encouraged to provide a shield against risks.

f. Bio-diversity Conservation

The project area is rich in bio-diversity, which needs to be conserved. Various *in situ* and *ex-situ* practices will be adopted in the forest eco-system along with proper method of harvesting, community management of forests, avoidance of forest fire, shifting cultivation, stump management etc will be useful to preserve the bio-diversity. Agricultural bio-diversity will be conserved by preservation, augmentation and multiplication of traditional varieties of seeds. The research results generated by MS Swaminathan Foundation at Jeypore of the district will be applied in the project area.

g. Use of Indigenous Technology

The increasing attention on indigenous knowledge is receiving by academia and the development institutions have not yet led to a unanimous perception of the concept of indigenous knowledge. Indigenous knowledge (IK) is the local knowledge – knowledge that is unique to a given culture or society. IK contrasts with the international knowledge system generated by universities, research institutions and private firms. It is the basis for local-level decision making in agriculture, health

care, food preparation, education, natural-resource management, and a host of other activities in rural communities.

Indigenous knowledge is developed and adapted continuously to gradually changing environments and passed down from generation to generation and closely interwoven with people's cultural values. Indigenous knowledge is also the social capital of the poor, their main asset to invest in the struggle for survival, to produce food, to provide for shelter or to achieve control of their own lives. For centuries, farmers have planned agricultural production and conserved natural resources by adopting indigenous knowledge. The development of indigenous knowledge systems, including management of natural environment, has been a matter of survival to the people who generated these systems. With the rapid environmental, social, economic and political changes occurring in many areas inhabited by indigenous people, comes the danger that the indigenous knowledge they possess will be overwhelmed and lost forever. Tribals in developing societies have evolved location-specific knowledge gained through close interaction within natural and physical environments and cultural adaptation, which are now recognized to be more eco-friendly and sustainable. The key interventions will be:

- Documentation of ITKs
- Testing the ITKs in farmer field or at KVK
- Field trial on ITK
- Adoption of ITKs with refinement in the project area.

h. Suitability of technology to the local agro-ecology

Various technologies have been emanated from the RRTTS, Semiliguda, KVK, Semiliguda, Central Soil & Water Conservation Training & Research Institute, Semiliguda, MS Swaminathan Research Institute, Jeypore & Pottangi Research Station. All the technologies will be adopted in the project area by educating the women farmers through exposure visit, training and demonstration.

i. Resilience to climate change-Integrated Natural Resource Management

The research component of the Green Revolution was largely based on the genetic improvement of a few commodity crops to enhance their productivity and improve their resistance to pests and diseases. The gains were largely confined to areas of high agricultural potential, and they often benefited the more prosperous farmers. In many cases, this research yielded large production gains at the expense of soil degradation, water, biodiversity, and non-cultivated land.

Integrated natural resource management (INRM)¹ is an attempt to build a new agricultural research and development paradigm to meet the challenges and opportunities outlined above. Integrated Natural Resources Management (INRM) of land, water, forest and biological resources is required to achieve and sustain potential agricultural productivity. INRM combines managing the use of natural resources along with their conservation and sustenance. Programmes comprise of enhancing productivity in agriculture; diversifying into new crops; setting up irrigation systems; and instituting entirely new ways of managing the natural resource base. The key intervention will be farmers' training and demonstration.

3.1.3 Targeting

The project will be implemented in Pottangi & Semiliguda blocks of Koraput district covering 10 Gram Panchayats and 87 villages. The details of villages and MK members are presented in Table below.

Table 3.1. Block-wise details of MK members

Name of the Block	Name of Panchayat	Number of villages	Number of households	Number of MK members
Semiliguda	Kunduli	8	388	320
	Pitaguda	10	766	405
	Renga	8	516	317
	Kudhi	6	191	171
Sub-total		32	1861	1213
Potangi	Deo-potangi	8	413	287
	Pukali	9	623	158
	Maliput	7	485	150
	Chandaka	16	879	638
	Sambai	11	516	327
	Kotia	5	111	243
Sub-total		56	3027	1803
TOTAL	10	88	4888	3016

In the project villages, the women farmers belonging to small and marginal category and ST/SC community will be the beneficiaries. The women SHGs having 10-15 members in each group will be the targeted population.

3.1.4 Phasing

The project will build on existing resources, crops and ITK. The new crops, new varieties and new technologies will be introduced for promotion of sustainable agriculture. Graded technologies and participatory technology development (PTD) and best management practices will be gradually adopted for sustainable agriculture and food and nutrition of the target population. Once there is substantial increase in production is achieved, focus will be given on marketing, value addition and agro-processing. The detailed activity schedule is indicated in subsequent paragraph of Chapter 5

Of the 3000 women SHGs, 1000 will be covered during the first year, 2000 during the second year and 3000 during the third year.

3.1.5 Plan for Post-project Sustainability and Up-scaling Strategy

The project will be completed in three years from the date of commencement. It is expected that project will generate good learning experiences, which could be up-scaled elsewhere in similar situations. The basic idea is to develop prototypes for further scaling-up. The best management practices will be suitably documented for this purpose. Three months before completion of the project an exit protocol will be developed by the PIA in consultation with the VLC and SHGs. The Gram Panchayat will also be consulted. All the assets, liabilities and project development funds will be transferred to the account of VLC along with exit strategy. It is expected that the VLC will maintain the assets of the project and carry forward ongoing activities after completion of the project as a stable platform.

The knowledge and information imparted to the community is one that will be used to encourage them utilize resources in an inexhaustible way. This will let communities exploit resources during their lifetime and handover to the future generations in first rate order. These skills will therefore make generations regard themselves as custodians of nature given resources and not consumers.

The system used during knowledge transfer involves institutionalization where trained individual farmers are organized into groups and encouraged to manage their own operations. They establish formal leadership in their respective groups which is directly responsible for group's running and linkages with other developmental networks and for information sharing. The groups' members are subjected to all the skills relevant to all their undertakings to ensure building the communities' human capital. This will guarantee continuity and at the same time induce intra community knowledge and ideas transfer through schemes like Farmers Field Schools (FFS), Demonstration Plots and Exposure Visits. Different groups carry out needs assessment and start income generating projects. This is an incentive to hold together and champion other communal activities and needs. Income generating activities increases individual's per capita and is in line with poverty reduction strategy thereby committing members to uphold the projects. The proceeds help in sustaining the intended ecologically sound projects.

3.1.6 Drudgery Reduction

In reality women farmers do some tedious and arduous work in agricultural fields, which cannot be done easily by males. The women are triple burdened with production, reproduction and maintenance of household assets. Their work is often invisible. All these works amount to human drudgery. Works like transplanting of paddy, weeding, harvesting, carrying on head, watering, fetching water and fire wood cause drudgery in women in agriculture. There are some improved agricultural implements and equipment like improved sickle, transplanter, digger, harvester, dal processor, weeder etc which can reduce drudgery of women. Such implements/equipments will be purchased and supplied to the farm women for labour efficiency and reduction of human drudgery. Some of the implement/machinery involving high cost can be purchased by the SHG, which can be used by each member on rotational basis. Under New agriculture Policy, 2013 and NHM subsidy is available on key implements, machinery and equipment. Training will be given to CRPs and SHG members on proper use, repair and maintenance of women-friendly implements.

3.1.7 Awareness Generation

Awareness generation is very important for accessing rights and entitlements under different programmes and schemes of the Government. Land right usually rests with the males as a result of which the women farmers are denied government subsidy. As per present rules, the land resources of a household will remain in possession of both men and women for which joint *patta* will be issued. Allotment of house under IAY is also made in the name of both husband and wife. Specific provisions have been made for women workers under development schemes like MGNREGA etc. Participation of women has been encouraged in many schemes and programmes and specific quota is also earmarked for them. There are many schemes like Janani Sraskhya Yojana, Mamata etc intended for women. But in most cases the poor women are devoid of such facilities and entitlements basically due to poor literacy and want of exposure. Once they are inducted in SHGs, they can be suitably trained and steps can be taken up for their awareness generation. Programme like TRIPTI/OLM and OTELP is being implemented in the project area for empowerment of women and participation in decision making process.

3.1.8 Value-Chain Development

Agricultural value chain describes production processes around a product from provision of inputs to production, transportation, processing, marketing, trading and retailing to final consumption. Various actors are involved in agricultural value chain right from production to marketing. In the project area gullible farmers are very often

exploited by the middle men as a result of which the gap between the price realized by the producer and price paid by the consumer is widening. There is no gender equity in agricultural value chain. The following steps would be taken to improve participation of women in agricultural value chain.

- Increased access to land, water and agricultural inputs
- Improvement in accessing technology and extension service
- Increased access to training and capacity building
- Support for agro-processing and value addition

3.1.9 Knowledge & Technology Transfer

The in rural area work for more than 15 hours in a day as compared to only 7 hours by men. Most of the works of women are invisible. Usually they are denied of their entitlements. Access to production assets, technology, inputs, subsidy and skill enhancement is less in case of women in agriculture. Hence there is a need to enhance the capability and skill of farm women. The project will address this need in the following manner.

- Engagement of CRP, preferably women.
- Regular training and exposure visits for women
- Participation in FFS and PTD
- Conducting demonstrations and field trials in the field of farm women

3.1.10 Increasing access to credit

The SHGs will also be covered under NRLM so that after grading they will have bank linkage, bank linked subsidy and revolving fund. A portion of group saving will be utilized for internal lending within the group.

3.1.11 Direct Incremental Income

With the removal or reduction of exploitation by the local agents and middlemen, there will be increased earnings from NTFP for project beneficiaries. Similarly, agro-processing, value addition to agricultural products and NTFP and strengthening the agricultural value chain would increase substantial direct income of the SHGs. Storage and agro-processing will increase the bargaining power of women.

It is expected that the following incremental income will be achieved by the 3000 women SHG members during the project period.

- Self sufficiency in food availability for 12 months implying Rs 5000 to Rs 10000 per annum
- Cash income of Rs 1500 to Rs 2000 from vegetable cultivation and other new crops
- Cost saving of Rs 2000-Rs 3000 per annum due to adoption of sustainable agricultural practices
- Higher farm income of Rs 3000 to Rs 4000 per HH due to adoption of better technologies and inputs, and from other non-farm activities

3.1.12 Community Contribution

Community contribution of at least 10% will be mandatory in shape of cash or kind. The savings will be kept as development fund, which will be utilized for maintenance of key assets during and after the project period. In some government schemes 90% subsidy is allowed for ST farmers and 10% will have to be borne by the beneficiaries. In that case the beneficiary will have to pay 10% of the total cost as beneficiary's share. Community contribution can be had in the following manner:

- The members can deposit 10% up-front cash with the VLC account before start of work
- When the members are not able to make advance payment of 10% they can make payment in instalments
- Payment can also be made in shape of labour or kind which can converted to cash payment

3.2 Convergence with MGNREGS & other line Departments

Substantial public investments are being made for strengthening of rural economy of livelihood base of the poor, especially the marginalized groups like SC/STs and women. To effectively address the issue of poverty alleviation, there is a need to optimize efforts through inter-sectoral approaches. The convergence of different programmes like: IWMP, RKVY, ATMA, National Horticulture Mission, Scheme of Artificial Recharge of Ground Water through Dug well, BRGF, with MGNREGA will enable better planning and effective investments in rural areas. This convergence will bring in synergies between different government programmes/schemes in terms of planning, process and implementation. This will also facilitate sustainable development. Convergence of funds from other sources can help in creation of durable assets. For instance, funds available with PRIs from other sources such as the National Finance Commission, State Finance Commission, State Departments and other Central or Centrally Sponsored Schemes such as NRLM, IWMP, and BRGF can be dovetailed with other rural development funds for the construction of durable community assets under the works permissible. However, core funds of many schemes should not be used as substitute resources by different departments and agencies for their own activities. The Ministry of Rural Development has developed and disseminated Guidelines for Convergence of MGNREGS with different schemes and specific programmes .

Convergence planning can achieve multiple goals such as maximization of returns from the investment, promotion of public private-community partnerships, sustainable development, meeting the unmet needs of the community and emergence of good governance. The instruments include pooling of resources, both human and capital, transfer of productive and eco-friendly technologies and value addition through provision of backward and forward linkages.

The convergence planning will be made in the following manner:

- Goal congruence among partners
- Identification of potential areas/activities/schemes for convergence
- Role clarity among stakeholders
- Funds flow according to convergence plan
- Activity scheduling
- Capacity building

3.3 Training and Capacity Building of Communities

Various trainings and exposure visits are planned for the communities for their capacity building. Such interventions are:

- Training and exposure visits of farmers within the district and outside the district
- Exposure visit of selected farmers out side the State
- Regular meetings and workshops
- Farmers' Field Schools
- Institutional training of farmers in local research stations

The women in agriculture will be trained for acquiring skill and knowledge and change of attitude for sustainable agricultural practices. The Course Contents will include

- Preparation and use of organic manures
- Soil and water conservation techniques

- Bio-intensive gardening
- Crop rotation
- Crop diversification
- Integrated pest management (IPM)
- Integrated nutrient management (INM)
- Integrated natural resource management
- Promotion of high nutritional crops and indigenous food
- Gender equity in development

Exposure visit

This is an important activity aimed at facilitating farmers learning from their successive counterparts, discuss and share experiences and gain motivation. Respective trained groups and other interested individuals are assisted in organizing trips to visit other areas and witness for themselves that what they learn is practicable. This enhances farmer's interaction and promotes farmer to farmer learning

3.4 Training & Capacity Building of Community Professionals

The CRPs will be trained at the institutional level & district level for their capacity building. Similarly they will be deputed on exposure visits within the district, State and outside the State in the following manner.

- Training and exposure visits of the CRPs within the district and outside the district
- Exposure visit of CRPs out side the State
- Farmers' Field Schools
- Institutional training of CRPs in local research stations

Chapter-4

Implementing Arrangements

The project recognizes the centrality of women in agriculture and therefore aims to provide direct and indirect support to enable them to achieve sustainable agriculture production. It will initiate a learning cycle by which women are enabled to learn and adopt appropriate technologies and farming systems.

4.1 Components of the project

- (a) Organization and mobilization of women in agriculture into SHGs, Federations and Producer Groups
- (b) Capacity building of SHGs/CRPs/VLCs
- (c) Access to production assets, inputs, market and technology
- (d) Natural resource management and bio-diversity agriculture and adoption of sustainable agricultural practices
- (e) Income generation through allied agriculture, agro-processing, value addition and value chain development
- (f) Drudgery reduction of women through appropriate technology and use of women-friendly implements
- (g) Household food and nutrition security
- (h) Convergence with other development schemes
- (i) Management of risk associated with climate change
- (j) Sustainability of the project

The project will be implemented under the above ten major components to satisfy the envisaged objectives, expected outputs and outcomes.

4.2 Elements of Implementation Process

- Building social infrastructure for project implementation
- Strengthening of community management processes and practices
- Baseline Survey to capture base level information on livelihoods, agricultural practices, ITKs, farm and non-farm income, problems and opportunities
- Project level inception workshop at district and block level to sensitize the officials on the project
- Placement of project staff, identification of CRPs and formation of VLC
- Preparation of comprehensive project implementation plan and presentation to the Gram Sabha/VLC
- Livelihood opportunity analysis and micro planning and its approval by the VLC
- Training Need Assessment/ Development/ adaptation of training modules
- Preparation and Implementation of Training Plan
- Handing over the copy of the comprehensive plan and annual action plan to the SHGs

- Technology Transfer
- Streamlining of collection, processing, storage and sale of NTFP
- Human development initiatives (Health, Nutrition, Education, Water & Sanitation)
- Business plan development for micro-enterprises
- Linkage to Govt. welfare schemes and programmes
- Monitoring, reporting and evaluation exercises

4.3 Project Implementation Plan & Flow

i. Internal structure for implementation

- Project Coordinator-1
- Block Coordinators-2
- Community Resource Persons-30
- Para-workers-40
- Support staff-2

ii. Role of CRP

One experienced and literate SHG member will be identified by the members to work as CRP. She will play the role as a communicator, local change agent, facilitator and a link person between the SHG and PIA.

iii. Role of project staff and para-professional

The SHG members of two villages will identify one para-professional from their villages to work as a bare-foot extension worker and service provider. S/he will be facilitator at the village level for technology transfer, utilisation of inputs, capacity building, market linkage, bank linkage, convergence and submission of reports. Overall implementation of the project at the village level will be facilitated by her/him.

The project staff will implement the project in consultation with the VLC/SHGs and line departments. They will maintain necessary records and will be responsible for reporting and accounting. Fund flow to the SHGs will be routed through the VLC and PIA for all expenses. The project staff will arrange for all capacity building programmes like training, exposure visit, conducting demonstrations, field trials and supply of key inputs. They will prepare the micro-level plan, business plan, annual action plan and liaise with banks and line departments for forward and backward linkage, marketing and convergence of on-going schemes. Technology development, dissemination, documentation and replication of success stories will be other key activities of the PIA. Participatory monitoring and concurrent internal evaluation will be taken up by the project staff. Formation of federation at Block level and organic linkage with the WSHGs will be also the responsibility of the project staff.

iv. Geography and yearly distribution

The project will be implemented in Pottangi and Semiliguda Blocks of Koraput district in Odisha. It will be implemented in 10 GPs, 88 villages covering 3016 households/ members. The spread of the individuals will be in the following manner.

Particulars	Year-1	Year-2	Year-3	Total
District	1	1	1	1
Block	2	2	2	2
Villages	60	88	88	88
Women members	2016	3000	3000	3000

v. Schedule of activities:

The detailed implementation plan and schedule of activities have been presented in Table.

Table 4.1. DETAILED IMPLEMENTATION PLAN

Objectives	Major activity	Detailed Task	Expected output	Time	Resources required	Implementer
To enhance the productive participation of women in agriculture	Organisation and mobilisation of communities	Formation/strengthening of nearly 200 WSHGs (3000 members)/2 Federations and 88 VLCs, sensitisation through awareness creation, meetings, village visits, capacity building of the groups	Group approach to service delivery and empowerment of 3000 women in agriculture	Continuous for 3 years	Staffing by PIA, transportation, publicity materials, resource persons and funds flow	PIA, Project Coordinator & Block Coordinator
To create sustainable agricultural livelihood opportunities for women in agriculture	Sensitisation of the women in agriculture for adoption of SA practices for sustainable farm income	Preparation of micro-level plan, approval by VLC, training, exposure visits, farm visits, transfer of technology on SA/organic farming, demonstration, field trial, field days, FFS & supply of key inputs including soil and water conservation measures	Sustainable farm income rise & increase in farm production and productivity, skill enhancement on soil health management, crop diversification, INM, IPM, INRM & IFS and increase in cultivated area	Continuous	Transportation, resource persons, key inputs, venue for training, training materials, IEC materials, implements	PIA, VLC, CRP, para-professionals & women SHGs
To improve the skills and capabilities of women in agriculture to support farm and non-farm-based activities	Skill improvement of WSHGs on on-farm and non-farm enterprises and linkage with credit, inputs and marketing	Situation analysis, need assessment, business plan development, training, exposure visit, demonstration and forward-backward linkage, collective marketing by federations	Increased benefits and reduction in cost, increased skill performance level of women in agriculture and women labourers, drudgery reduction	Continuous	Mobility, resource persons, key inputs, credit, machinery, storage infrastructure, IEC materials	PIA, CRP, para-professionals, Federation, WSHGs and line departments
To ensure food and nutrition security at the household and the	Physical access, economic access, food absorption at HH and	Cultivation of millets, vegetables, root and tuber crops, crop intensification, growing of short duration	Increase in food production, availability of nutritious food to meet calorie need ,	2 nd & 3 rd year	Mobility, IEC materials, resource persons, credit, key	PIA, VLC, CRPs, para-professional, federation,

*Enhancing Livelihoods of Women in Agriculture
In Pottangi & Semiliguda Blocks of Koraput*

community level;	community level	fruit crops (banana, pine apple, papaya), back-yard poultry, livestock promotion, fishery, mushroom cultivation, increasing irrigation and linkage with PDS and poverty alleviation schemes	reduced malnutrition and mal-nourishment, and improvement in well-being		inputs, equipment & machinery	WSHGs and line departments
To enable women to have better access to inputs and services of the government and other agencies	Awareness generation	Sensitization of the community on entitlements, coordination with line departments and community empowerment	Increased visibility of women in agriculture as interest groups, livelihoods security of HHs and increased access to inputs and services	Continuous	IEC materials, transportation, resource persons	PIA and line departments/P RIs
To enhance the managerial capacities of women in agriculture for better management of bio-diversity	Awareness generation & skill development	Sensitisation on climate change, bio-diversity erosion, dissemination of technologies for bio-diversity conservation, capacity building through training & exposure visits	Risk reduction due to climate change, restoration of ecological balance	2 nd & 3 rd year	IEC materials, mobility, resource persons, venue of training	PIA, WSHGs & VLCs including CRP/para-professionals
To improve the capacities of women in agriculture to access the resources of other institutions and schemes within a convergence framework	Awareness generation	Sensitisation of the WSHGs on ongoing schemes like MGNREGA, NHM, NFSM, ATMA, RKVY, FFDA, NRLM, NSAP, IWMP, Irrigation schemes etc, preparation of convergence plan & implementation	Increased access to RD and poverty alleviation schemes and other entitlements, reduction of poverty levels at village level	Continuous	IEC materials, mobility	PIA, line departments & WSHGs/PRI s

Social Audit

The VLC will conduct social audits at six-monthly interval. The agenda will be prepared in advance and communicated to the SHGs. Presentation of expenditure statement will be made by the VLC in presence of the Block Coordinator. The complaints received in the meeting will be recorded and minutes of the meeting will be communicated to the PIA for further action. The PIA will prepare a calendar for social audits so that the Block coordinator can attend all the social audit meetings.

Development Communication Strategy-Best practices

The best management practices (BMP) on sustainable agriculture & bio-diversity conservation will be documented by the PIA by engaging a professional. Such practices will be disseminated and adopted by the WSHGs. The para-professional will play facilitator role.

Forward linkage plan

Once the business plan is developed, it will indicate the forward linkage plan. The federation will take up market linkage activities in consultation with the producer groups, giving focus on collective marketing. Value addition and agro-processing will be done at federation level.

Chapter-5

Implementation Schedule

The implementation schedule has been phased and shown in a Gantt chart.

Activity schedule	1 st year (qrs)				2 nd year (qrs)				3 rd year(qrs)			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
Project staff deployment	■											
Staff orientation	■											
Inception workshop	■											
Base line survey	■											
Organisation & mobilisation of SHGs/VLCs	■											
Identification of CRPs, para-professionals & their capacity building	■											
Preparation of village level micro-plan and its approval by VLC/Gram sabha	■	■										
Awareness generation of the community on SA practices, bio-diversity conservation, climate change & their entitlements		■										
Training and exposure visit on SA		■										
Soil health management			■	■	■	■	■	■	■	■		
Soil & water conservation including irrigation development			■	■	■	■	■	■	■	■		
Field demonstrations and training on INM, IPM, IFS & INRM					■	■	■	■	■	■	■	
FFS on IPM					■	■	■	■				
Seed production , testing and treatment			■	■	■	■	■	■	■	■		
Business plan development for micro-enterprises & training					■							
Crop diversification & intensification (cultivation of millets, pulses, vegetables, fruits)					■	■	■	■	■	■	■	■
Back-yard poultry, goatery & Dairy						■	■	■	■	■		
Fishery					■	■	■	■	■	■	■	■
Mushroom cultivation							■	■	■	■		
Bio-diversity conservation (in-situ, ex-situ conservation, collection, multiplication and preservation of local seeds)					■	■	■	■	■	■		
Collection of information on ITK, validation and replication					■	■	■	■	■	■	■	
Documentation of BMPs & dissemination							■	■	■	■		
Convergence planning & implementation (MGNREGA, RKVY, NFSM, NHM, IWMP)			■	■	■	■	■	■	■	■	■	
Participatory monitoring & concurrent evaluation					■	■	■	■	■	■	■	■
Formation of Producers' groups, federations and linkage					■	■	■	■	■	■	■	■
Documentation of BMPs for scaling-up											■	■
Preparation of exit strategy & implementation												■

Chapter-6

Result Framework

Goal: The goal of the project is to empower women in agriculture to enhance their capacity to increase their farm income sustainability through adoption of sustainable agricultural practices, conservation of bio-diversity, natural resource management and ensure household food and nutrition security through on-farm and non-farm enterprises.

As per the project guideline of MoRD the matrix of outcome and measurement is indicated in Table.

Table 6.1. Matrix of Outputs & Measurement

Outcome	Indicators
Net increase in the income of women in agriculture on sustainable basis	Income, livelihoods diversification (having a multiple livelihood option)
Increase in total cultivated area	Cropping intensity, gross cropped area, reduction in fallow area
Increase in the food production	Total production, productivity, farm related activities (integrated farming systems)
Increase in benefit and reduction in cost	Monetary and non-Monetary indicators
Soil health and Fertility (environment)	Soil organic matter, microbial biomass carbon, Nitrogen mineralization potential
Increased visibility of women in agriculture as an interest group	Who takes decision in the household, membership in group, number of women institutions and enterprises engaged in agriculture.
Increase in the skill performance levels of women in agriculture	Training, study tour, exposure visits, demonstration, participating in action research, technology they are using, (deskilling)
Drudgery reduction for women in agriculture under the Project area through use of gender friendly tools/technologies	Tools and techniques developed to reduced drudgery
Increased access to input and services	Inputs, markets, credit, information, technology

The outputs and outcomes of the project have been described logical framework analysis in Table.

Table 6.2. Logical Framework Analysis (LFA)

Narrative Summary	• Objectively verifiable indicators (OVI)	Means of verification (MOV)	Assumption/Risk
<p>Project Goal To empower women in agriculture to increase their farm income sustainability through adoption of sustainable agricultural practices, conservation of bio-diversity, natural resource management and ensure household food and nutrition security through on-farm and non-farm enterprises.</p>	<ul style="list-style-type: none"> • Population below official poverty line falls by 20% in villages covered by the project • Food and nutrition security in households covered (availability and access for 12 months) • Visibility of women in agriculture as an interest group 	<ul style="list-style-type: none"> • BPL survey report • Final evaluation report • Savings of producer groups 	
<p>Purpose Sustainable livelihoods of the poor households through sustainable agriculture and non-farm activities & capacity building</p>	<ul style="list-style-type: none"> • 70% poor households report food and nutrition security • 30% increase in farm income • 60% women in agriculture demonstrate skill development • 45% women report to have achieved access to land, inputs , credit & technology • 20% increase in cultivated area, cropping intensity and crop production • 90% women in agriculture have 	<ul style="list-style-type: none"> • Baseline study • Impact assessment studies • Soil test results • Participatory M&E reports • Process documentation • Utilization of key inputs like bio-fertilizers, bio-pesticides, and pest surveillance reports • Increase in area under 	<ul style="list-style-type: none"> • Other development schemes of GOI and GOO having a direct bearing on the livelihoods & food security of people are effectively and successfully implemented • Technologies on SA practices and key inputs are available in time • There is no such significant crop loss due

*Enhancing Livelihoods of Women in Agriculture
In Pottangi & Semiliguda Blocks of Koraput*

	<p>access to market and market information</p> <ul style="list-style-type: none"> • Increase in organic matter content and microbial population in 60% arable land 	<p>irrigation</p>	<p>to severe natural calamities</p>
<p>Outcome 1 Net increase in the income of women in agriculture on sustainable basis</p>	<ul style="list-style-type: none"> • 30% increase in farm income 	<ul style="list-style-type: none"> • Baseline survey • Impact assessment studies • Participatory M& E report 	<ul style="list-style-type: none"> • Support from other development departments (agriculture) • Unprecedented natural calamities
<p>Outcome 2 Improvement in food and nutrition security of women in agriculture and their families</p>	<ul style="list-style-type: none"> • 70% of women in agriculture have physical and economic access to adequate food • Reduction in out-migration 	<ul style="list-style-type: none"> • Baseline survey • Impact assessment study • ICDS report 	<ul style="list-style-type: none"> • Support of agriculture, W&C Development & education department • Job employment under MGNREGS • Proper functioning of TPDS/food safety net as per FS Act, 2013
<p>Outcome 3 Increased area under cultivation, cropping intensity and food production by women in agriculture</p>	<ul style="list-style-type: none"> • 20% increase in cultivated area and irrigation • 20% increase in cropping intensity • Seed replacement rate increased by 10% • Agriculture productivity increased by 30% 	<ul style="list-style-type: none"> • Baseline survey • Impact assessment study • PIA report • Participatory M&E report 	<ul style="list-style-type: none"> • Severe natural calamities • Availability of agricultural inputs in the area • Interest by line departments for convergence
<p>Outcome 4 Increase in skill and performance level of women in agriculture</p>	<ul style="list-style-type: none"> • 60% farm women adopt new skills & technology on SA practices • Demand for inputs increased 	<ul style="list-style-type: none"> • Evaluation studies • Participatory M&E reports 	<ul style="list-style-type: none"> • Effective implementation of PIA without fund constraint

*Enhancing Livelihoods of Women in Agriculture
In Pottangi & Semiliguda Blocks of Koraput*

	<ul style="list-style-type: none"> • Number of training and exposure visits increased 	<ul style="list-style-type: none"> • Capacity building plan document • Community level documents and progress reports 	<ul style="list-style-type: none"> • Interest of VLC/PRI's • Interest of Research Institutes and flow of inputs
<p>Outcome 5 Increased access of women in agriculture to productive land, inputs, credit and technology</p>	<ul style="list-style-type: none"> • 50% women farmers adopt low-cost technology to reduce cost of production • 45% women increased access to productive land, input & credit 	<ul style="list-style-type: none"> • Baseline survey • Impact assessment studies • Increased crop yield and profit 	<ul style="list-style-type: none"> • Favourable policy environment • Interest of credit institutions • Availability of key inputs
<p>Outcome 6 Drudgery reduction of women in agriculture</p>	<ul style="list-style-type: none"> • 70% women in agriculture adopt drudgery reducing implements • Adoption of women-friendly technologies by 50% women in agriculture 	<ul style="list-style-type: none"> • Baseline survey • Impact study • Special study and documentation 	<ul style="list-style-type: none"> • Availability of women-friendly implements/equipment & their service • Availability of subsidy from relevant departments
<p>Outcome 7 Increased access to market and market information for better marketing</p>	<ul style="list-style-type: none"> • 70% women in agriculture have access to market-led extension • Producer groups take up value addition and agro-processing at group/federation level 	<ul style="list-style-type: none"> • Baseline study • Special market study • Value chain analysis 	<ul style="list-style-type: none"> • Support to federations/SHGs by PRI's and Cooperatives • Storage structures
<p>Outcome 8 Increase in soil health, fertility to sustain agricultural based livelihoods</p>	<ul style="list-style-type: none"> • Visible increase in adoption of eco-friendly technologies for organic farming • 50% women farmers adopt integrated NRM, IPM and INM technologies • 20% women adopt integrated farming 	<ul style="list-style-type: none"> • Baseline survey • Soil test reports • Pest surveillance reports • Impact studies • Documentation 	<ul style="list-style-type: none"> • Availability of critical inputs (bio-fertilizer, bio-pesticide) • Support from agricultural department

*Enhancing Livelihoods of Women in Agriculture
In Pottangi & Semiliguda Blocks of Koraput*

	<p>system</p> <ul style="list-style-type: none"> • 30% women in agriculture adopt crop diversification 		
<p>Outcome 9 Increased visibility of women in agriculture as an interest group</p>	<ul style="list-style-type: none"> • Producer groups are formed and federated • Women in agriculture raise their bargaining power • Group savings are substantially increased • Collective marketing is achieved 	<ul style="list-style-type: none"> • Impact studies • Documentation of groups • Savings of groups 	<ul style="list-style-type: none"> • Support of Banks • Interest of PRIs
<p>Outcome 10 Conservation of agricultural bio-diversity</p>	<ul style="list-style-type: none"> • 20% women in agriculture are engaged in collection, multiplication and preservation of indigenous seeds • Reduction in forest grazing • Cultivation of medicinal plants 	<ul style="list-style-type: none"> • Baseline study • Documentation • Impact study • Regeneration of endangered species 	<ul style="list-style-type: none"> • Support from forest and environment department • Support from Panchayat

Chapter- 7

Monitoring, Evaluation & Learning

7.1 Web based MIS and real time input-output monitoring at various levels:

LAVS uses a basic computer based MIS to capture on-line plans and achievements of different projects. The MIS help generate report about the beneficiaries/partners of projects under each of the activity in a given time period. Farm level crop production data are collected on weekly basis on cropping season and fortnightly in lean season. The data collected from the field level will be available at the office of the Block coordinator which will be forwarded to the district office. Analysis of data will be made at Block & District level.

The compiled data at the State level will be forwarded to concerned quarters. The project specific data would be drawn from manual reports as well as web-based MIS so that progress reports on project activities can be reviewed from time to time and review reports can be prepared.

7.2 Review Mechanism

The review of the project activities and progress would be conducted at two levels, i.e. within LAVS and communities with different systems.

Within LAVs the monitoring and learning system will be designed to facilitate learning and feedback to help personnel improvement and to ensure progress (quantity and quality) against action plan. Each project team will meet monthly to submit reports on performance against action plan and prepare plans for the next month in advance. A State management committee will oversee the progress of work with reference to the annual action plan drawn.

Review of the progress of the project will also be made at community level. The WSHGs/VLCs/CRPs/para-professionals will meet once in a week and month to review the progress of work. The gram sabha will also be associated in the monthly meeting. The communities will be suitably trained on participatory monitoring and evaluation tools and techniques. The farmers' collectives and producer groups will also keep track of the business data and present to its governing board members and also to SHG federations

The project aims to empower the community to take charge by way of certifying the utilization of funds as per investment plan. Social audits will be conducted at village level twice in a year.

For participatory monitoring and evaluation the following steps will be taken.

1. At this initial stage, the *stakeholder* groups to be involved in the planning of the PM&E process will first be identified. *Stakeholders* will define the objectives of the PM&E, including what will be monitored, how and by whom. The planning stage requires a lengthy process of negotiation, contestation and collaborative decision-making among various *stakeholders*. A common set of *indicators* will be developed, while in other instances different *stakeholder* groups develop their own sets of *indicators*

2. Data collection will include the use of both quantitative and qualitative methods and tools. Quantitative methods can include: community surveys; interviews; and observations. Qualitative methods can include various participatory learning methods using visual, interviewing and group tools and exercises. PRA tools like before and after situation, problem ranking, wealth ranking, seasonality, daily time chart, technology mapping etc will be used for collection of data. Assessment can be made by focus group discussion and beneficiary's assessment.
3. PM&E will actively involve various categories of program *stakeholders* in the critical analysis of successes and constraints and the formulation of conclusions and lessons learned
4. The results of M&E activities will be shared with other stakeholders, and there will be discussion of appropriate action to be taken on the basis of findings.

Chapter-8

Budget Narrative

The project will seek to achieve organization and mobilization of women in agriculture, work in group approach to service delivery, enhance access to assets, knowledge dissemination, agriculture related production enhancement technologies, natural resource based sustainable agriculture, blending agriculture and allied sectors and post harvest processing, improved market access to ensure remunerative prices, convergence with MGNREGS, ATMA, RKVY, NFSM, NHM, planting trees, livestock promotion, food and nutrition security and innovative interventions for better management of risk associated with climate change. The project will support for beneficiary mobilization, training and capacity building, input cost for sustainable agricultural practices, monitoring and administrative expenses.

It is proposed to invest on the following components and sub-components during the project period of three years.

Component	Sub-component	Total budget in Lakh Rs	Percentage of total budget
Project inception	Mahila Krishak Profiling, DPR preparation, Value chain analysis, livelihoods study, District & Block level workshop	10,15,750	5.86
Institutional Building	Strengthening of WSHGs, mobilization of producer groups, federations, market support	18,10,000	10.44
Capacity building of women in agriculture	Training module preparation, preparation of AV aids, training equipment, organization of training and exposure visit	81,60,000	47.06
Community investment support	Demonstration, implements, vermi-compost pits, input supply, operation of federation and market societies	43,00,000	24.80
Knowledge Management	Identification, documentation and dissemination	2,80,000	1.61
Monitoring of project activities	Baseline survey, end line survey, social audit	9,50,000	5.47
Administrative Expenses	Salary, travel, stationary, communication	8,25,000	4.76
TOTAL		1,73,40,750	100

Of the total investment of Rs. 1, 73,40,750, Rs 1,30,05,563 is requested from MKSP scheme of NRLM under MoRD and Rs 43,35,187 will be required from State Government as matching share.

Besides the above budget, substantial fund will be mobilized from convergence of development schemes as indicated below.

Name of scheme	Department
MGNREGS	Panchayati Raj Department
NRLM	Panchayati Raj Department
Drinking water & Sanitation	RD Department
RKVY	Agriculture Department
NFSM	Agriculture Department
NHM	Agriculture Department
Fisheries development	FARD Department
Livestock promotion	FARD Department
Agriculture Input subsidy & Implements	Agriculture Department
Jalanidhi	Agriculture Department
Biju Krushak Kalyan Yojana	Agriculture Department
ATMA	Agriculture Department
Forest Management	Forest & Environment Department
Soil & Water Conservation under IWMP	OWDM
Supply of planting materials	Directorate of Horticulture
TPDS	Food & Consumer Welfare Department
Nutrition	Women & Child Development Department
Livelihoods Promotion	O TELP
Agricultural Marketing	Cooperation Department/ORMAS
NTFP	Panchayat

The details of budget estimate are given in Table.

*Enhancing Livelihoods of Women in Agriculture
In Pottangi & Semiliguda Blocks of Koraput*

MKSP IMPLEMENTATION IN KORAPUT DISTRICT ODISHA: BUDGET DETAILS														
	Particulars	Year												
		1	2	3	Total									
	No.of mahila kisan/NTFP collectors	2000	1000	3000	3000									
	No of Producer Groups	30	20	10	60									
	No of Villages	60	90	90	90									
	No of Blocks	2	2	2	2									
	No of Districts	1	1	1	1									
Sl No	Project Cost	Unit Description	Physical Outlay (No.of units planned)				Unit Cost in Rs	Financial Outlay					Cost per Mahila Kisan	
			Yr1	Yr2	Yr3	Total		Yr1	Yr2	Yr3	Total (Rs)	Central Share (Rs)		State/PIA Share/ Others
1	Project Inception													
1.1	Mahila Kisan profiling	No .of Mahila Kisan	2000	1000	0	3000	100	200000	100000	0	300000	225000	75000	100
1.2	DPR Preparation	lump sum	1	0	0	1	35750	35750	0	0	35750	26813	8937.5	12
1.3	Technical protocols documentation	Lump sum	4	2	0	6	20000	80000	40000	0	120000	90000	30000	40
1.4	Value-chain Studies	Lump sum	3	2	1	6	50000	150000	100000	50000	300000	225000	75000	100
1.5	Livelihood opportunity Studies	Lump sum	2	0	0	2	100000	200000	0	0	200000	150000	50000	67
1.6	District level workshop on project objectives and strategy	Lump sum	1	0	0	1	30000	30000	0	0	30000	22500	7500	10

*Enhancing Livelihoods of Women in Agriculture
In Pottangi & Semiliguda Blocks of Koraput*

1.7	Block level workshops on project objectives and strategy	lump sum	2	0	0	2	15000	30000	0	0	30000	22500	7500	10
A	Subtotal							725750	240000	50000	1015750	761812.5	253937.5	339
2	Institution Building											0	0	0
2.1	Formation/ strengthening of WSHGs	No. Of SHGs	200	100	0	300	3000	60000	30000	0	90000	675000	225000	300
2.2	Mobilisation & Promotion of producer groups	No.of producer groups	30	20	10	60	5000	30000	100000	50000	450000	337500	112500	150
2.3	Promotion of producer group federation	No.of producer federations	1	1	0	2	20000	20000	20000	0	40000	30000	10000	13
2.4	Management support to producer federation	No.of producer federations	1	2	2	5	50000	50000	100000	100000	250000	187500	62500	83
2.5	Promotion of project level marketing society	No. Of marketing society	1	0	0	1	20000	20000	0	0	20000	15000	5000	7
2.6	Management support to marketing society	No. Of marketing society	1	1	1	3	50000	50000	50000	50000	150000	112500	37500	50
B	Sub total							1040000	570000	200000	1810000	1357500	452500	603

*Enhancing Livelihoods of Women in Agriculture
In Pottangi & Semiliguda Blocks of Koraput*

3	Capacity Building													
3.1	Training module development : Print	No.of training modules	4	2	0	6	100000	400000	200000	0	600000	450000	150000	200
3.2	Training module development : audio-visual	No.of training modules	3	2	0	5	100000	300000	200000	0	500000	375000	125000	167
3.3	Training equipment & material (Flex posters, Cards, Drawing Sheets, markers etc.)	lump sum						200000	100000	100000	400000	300000	100000	133
3.4	Training to CRP Needs to be backed with detailed training schedule	No.of CRP	20	30	30	30	5000	100000	150000	0	250000	187500	62500	83
3.5	Trainings to para-professionals <Needs to be backed with detailed training schedule	No.of para-professionals	20	30	30	30	5000	100000	150000	0	250000	187500	62500	83
3.6	Training to Community <Needs to be backed with detailed training schedule	No.of community members	400	200	600	600	3000	1200000	600000	0	1800000	1350000	450000	600
3.7	Training to leaders & PRI	No.of leaders	60	60	60	180	2000	120000	120000	120000	360000	270000	90000	120
3.8	Exposure visits of CRPs to Best Practices	No.of CRPs	10	10	10	30	10000	100000	100000	100000	300000	225000	75000	100
3.9	Exposure visit of para-professional to Best Practices	No.of para-professionals	10	10	10	30	10000	100000	100000	100000	300000	225000	75000	100

*Enhancing Livelihoods of Women in Agriculture
In Pottangi & Semiliguda Blocks of Koraput*

3.10	Exposure visit of Producer group/ federation/ marketing society leaders	No.of mahila kisan	20	20	20	60	10000	200000	200000	200000	600000	450000	150000	200
3.11	Service charge to CRP (Excluding the resource fee received by them as trainers)	No.of CRPs	20	30	30	30	18000	360000	540000	540000	1440000	1080000	360000	480
3.12	Service charge to para-professionals (Excluding the resource fee received by them as trainers)	No.of para-professionals	20	30	30	30	12000	240000	360000	360000	960000	720000	240000	320
3.13	Training to producer group leaders	No of Mahila Kansans	60	40	20	120	2000	120000	80000	40000	240000	180000	60000	80
	Training to producer federation and marketing society leaders	No of Mahila Kisans	20	20	0	40	2000	80000	80000	0	160000	120000	40000	53
C	Sub total							3620000	2980000	1560000	8160000	6120000	2040000	2720
4	Community Investment Support													
4.1	Demonstration plots for sustainable agriculture Protocols and practices	No of demonstration	4	4	2	10	20000	80000	80000	40000	200000	150000	50000	67
4.2	Construction of vermin- compost pits	No.of Pits	30	20	10	60	20000	600000	400000	200000	1200000	900000	300000	400
4.3	Distribution of small implements for drudgery reduction of Mahila Kisans	No of Mahila Kisans	500	300	200	1000	500	250000	150000	100000	500000	375000	125000	167

*Enhancing Livelihoods of Women in Agriculture
In Pottangi & Semiliguda Blocks of Koraput*

4.4	Inputs to the mahila kisan (grant/subsidy/full loan)	No.of mahila kisan	150	100	50	300	3000	450000	300000	150000	900000	675000	225000	300
4.5	Inputs to producer groups/ federation (grant/subsidy/full loan)	No.of producer groups	30	20	10	60	20000	600000	400000	200000	1200000	900000	300000	400
4.5	Operational Fund of Producer federation	No.of producer federations	1	1	1	1	50000	50000	50000	50000	150000	112500	37500	50
4.6	Operational Fund of Marketing Society	No. Of marketing society	1	1	1	1	50000	50000	50000	50000	150000	112500	37500	50
D	Sub total							2080000	1430000	790000	4300000	3225000	1075000	1433
5	Knowledge Management													
5.1	Identification of best practices/ Experience sharing workshops	No of Workshops	2	2	2	6	10000	20000	20000	20000	60000	45000	15000	20
5.2	Documentation of best practices	Lump sum	2	5	3	10	10000	20000	50000	30000	100000	75000	25000	33
5.3	Dissemination of best practices	Lump sum	3	5	4	12	10000	30000	50000	40000	120000	90000	30000	40
E	Subtotal							70000	120000	90000	280000	210000	70000	93
6	Monitoring & Evaluation													
6.1	Baseline survey	No. of HH to be covered	300	0	0	300	200	60000	0	0	60000	45000	15000	20

*Enhancing Livelihoods of Women in Agriculture
In Pottangi & Semiliguda Blocks of Koraput*

6.2	Endline survey	No. of HH to be covered	0	0	300	300	200	0	0	60000	60000	45000	15000	20
6.3	Independent evaluation studies	No. of Studies	1	2	2		100000	100000	200000	200000	500000	375000	125000	167
6.4	Public information disclosure	No. of information disclosure sites/places	20	20	20	60	3000	60000	60000	60000	180000	135000	45000	60
6.5	Social Audit	No. of social audits	10	10	10	30	5000	50000	50000	50000	150000	112500	37500	50
F	Sub total							270000	310000	370000	950000	712500	237500	316.66667
7	Administration Expenditure (Maximum 5% of total project cost)													
7.1	Staff salaries							200000	200000	200000	600000	450000	150000	200
7.2	Travel & conveyance							30000	30000	30000	90000	67500	22500	30
7.3	Stationary							25000	25000	25000	75000	56250	18750	25
7.4	Communication							20000	20000	20000	60000	45000	15000	20
H	Sub total							275000	275000	275000	825000	618750	206250	
	Grand Total (A+B+C+D+E+F+G)							8080750	5925000	3335000	17340750	13005563	4335187.5	

Indicative list of appropriate pre-harvest, post-harvest and sustainable agriculture methods

(i) Pre Harvest Practices

- Harvesting at the right time, taking into account the factors determining produce maturity and storability. This can be assessed by a set of crop specific indicators. This will help reduce storage losses as well maintain the quality of produce.
- Use appropriate women friendly mechanical harvester/thresher suited to specific location/crop to facilitate timely harvesting and threshing. Use of mechanical harvesters/threshers helps reduce drudgery in harvesting and threshing as well as reduce crop loss.
- Cleaning the produce to remove physical impurities
- Use of contaminant-free threshing floors/driers/wire mesh to ensure clean and quality crop produce
- Dry the grains to optimum moisture level before storage or marketing to prevent fungal/bacterial infection during handling and storage
- Condition the produce to ambient temperature before packaging
- Grade the produce according to the crop-specific standards
- Appropriate packing of produce to avoid wastage during transport. Packing material may be of compressed paper/fibre/wooden/plastics depending on the produce to be packed in standard size to enable handling and stacking. Prior to harvest, avoid use of pesticides and toxic chemicals which will have residual effect on crop produce.
- Avoid chemical-induced ripening of fruits

(ii) Post Harvest Practices:

Storage and Processing Practices:

- Create community storage structures for seeds and grains. These storage structures may be metallic silos, mud or straw based storage bins.
- Adopt integrated pest management strategies to control storage pests and precautionary measures against pathogens and rodents.
- Use of zero energy cold chambers for short term storage of fruits and vegetables
- Value addition to the primary products to enhance market value and income of women farmers
- Promotion of drudgery reduction machinery (dal processor etc)

(iii) Pest Management:

- **Deep summer ploughing:** Summer ploughing exposes the pupae surviving inside the soil. Depth of ploughing should be more than 6 inches. Exposed pupae will die due to excess heat (or) eaten away by birds
- **Seed treatment with non-chemical components**
- **Clipping of the tips in case of Paddy:** Cut seedling tips while transplanting into the main field. This will prevent Stem borer attack as Stem borer lays eggs on the tips of the leaves.
- **Alleys in Paddy:** Leaving 1 feet path at every 3 mts interval in East –West direction will avoid attack of Hoppers.
- **White and Yellow sticky traps:** Arrange 15-20 Yellow and White sticky traps per acre. Green leaf hoppers and thrips stick to these traps. Clean these traps once in two days

- and add sticky material to traps for effective trapping. Height of these traps should be the same with the plant height.
- **Bird perches:** Arrange 10-15 bird perches per acre immediately after transplanting and remove these at grain filling stage (60 days after transplanting). Bird perches will attract birds and birds will eat pests. Broad costing of yellow rice will attract more birds. Height of bird perches should be more than the height of plants.
 - **Pheromone traps:** Keeping 5-10 Pheromone traps in zigzag way to mass trapping of pests. Lure has to be changed once in a month or after the expiry date
 - **Growing of trap crops:** Grow yellow flower Marigold (tall growing plants are preferred) and Castor around field, ensure flowering before main crop completes vegetative stage
 - **Border crop:** Sow 3 rows of tall growing Jowar or Bajra or Maize (without any gap in the row). This will provide enabling environment for friendly insects and it also prevents
 - **Application of Botanical extracts:** If all the above mentioned principles are followed religiously, there will not be any need to apply botanical extracts. However list of pests and botanical extracts
- (iv) **Disease Management:**
- **Selection of Seed:** Seed should be free from diseases and should select resistant varieties
 - **Incorporating weeds:** Weeds and other voluntary plants should incorporate into soil
 - Reduced usage of chemical fertilisers
 - **Crop rotation:** Rotate crops particularly with pulses to prevent disease spread
 - Avoid application of Nitrogenous fertilizer during cloudy days
 - **Alleys:** Alleys provide enough sunlight and wind flow and prevent disease spread
- (v) **Rodent control:**
- Use Rodent traps – 5-10 per acre
 - Keep Papaya peaces all-around the field – four Papayas are sufficient for one acre
 - Rodent repellent crops such as Calotropis, Turmeric, Castor plants which are rodent repellants
 - Keep mix of Cement and Wheat or any other flour at rat holes
- (vi) **Nutrient Management:**
- **Penning with Sheep (or) Cattle:** Penning with Sheep (or) cattle will improve soil fertility. During Summer, penning of sheep and cattle in the whole night is a general practice
 - **Tank silt application:** Application of tank silt will improve soil fertility and water holding capacity
 - **Application Farm Yard Manure (FYM):** Application of 6 tones / Acre of completely decomposed FYM per acre will improve soil fertility.
 - **Green manure crops:** Green manure crops will improve soil structure and organic matter content. After reaching flowering stage incorporate green manure crops into soil.
 - **Application of Azolla:** Add Azolla to paddy field it fixes atmospheric nitrogen, an average half of the nitrogen fertilizer application can be reduced
 - **Micronutrient deficiency:** For nutrient deficiency (Iron, Zinc and Potash) in nursery and in main field spray cow urine and cow dung and Acetofida solution.
 - **Green leaf manure:** Green leaf manuring with Pongamia, neem etc will improve soil fertility

- **Efficient composting methods like Nadep composting**
- Intercropping
- Crop rotation
- Mulching with legumes
- (vii) **Soil and moisture conservation in Rainfed areas:**
 - Conservation furrows for every four meters
 - Trenches all-around farm
 - Farm ponds
- (viii) **Cropping pattern in rain fed areas:**
 - Trees all around trench on farm boundary.
 - Cropping pattern with red gram in between the conservation furrows (2:1 or 5:1 proportion)