

**IMPACT ASSESSMENT OF  
EXTERNALLY AIDED  
PROJECT INTERVENTIONS  
ON LIVELIHOOD OF THE  
POOR AND MARGINALIZED IN  
KBK DISTRICTS OF ORISSA**

SPONSORED BY

**PLANNING COMMISSION  
GOVERNMENT OF INDIA**

**CENTRE FOR RURAL DEVELOPMENT  
BHUBANESWR**

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**PLANNING COMMISSION**

YOJANA BHAWAN, NEW DELHI

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# PREFACE

There are three externally aided livelihood projects currently in operation in the State of Orissa. They are the Western Orissa Rural Livelihoods project (WORLP), Orissa Tribal Empowerment and Livelihoods Programme (OTELP) and Targeted Rural Initiatives for Poverty Termination and Infrastructure. The former two pertain to the KBK Districts of Orissa.

WORLP is a ten-year project (2000-10) being implemented by the Orissa Watershed Development Mission (OWDM) of Government of Orissa under support from the UK Department for International Development (DFID). The project covers 29 blocks spread over four districts of western Orissa namely Bolangir, Baragarh, Kalahandi and Nuapada.

Orissa Tribal Empowerment and Livelihoods Programme (OTELP) is also a ten-year project (2003-13) supported by the International Fund for Agricultural Development (IFAD), Department for International Development (DFID), World Food Programme (WFP), Govt. of India and Govt. of Orissa. The programme covers 30 most backward blocks with tribal concentrations in seven districts of Southern Orissa namely Gajapati, Kalahandi, Kandhamal, Koraput, Malkangiri, Nawarangpur and Rayagada.

The focus of the Programs is on developing sustainable livelihoods based on natural resource management within the context of watershed development but with the scope to address broader issues of sustainable livelihoods including savings and credit, access to common property resources, off-farm/non-farm activities, issues related to non-timber forest products, community Infrastructure and social sector activities. Both the projects adopt a 'watershed plus' approach using the watershed as the basic vehicle for natural resource management.

The present study is an attempt to assess the impact of External Aided Projects (EAPs) namely WORLP and OTELP (both being livelihood based) on the livelihoods of the vulnerable sections of population as the Scheduled Caste, Scheduled Tribe and Women in KBK districts of Orissa. The important issue in this regard includes the nature and extent of impact of the projects on the livelihoods of different sections of the community.

The Sustainable Livelihood approach has been applied to the projects impact assessment. The application is a paradigm shift from the conventional project impact evaluation criteria to a rich analysis of key assets and activities critical to livelihoods. We have an improved understanding of poverty in recent years. Poverty alleviation is not only increased income, other dimensions of poverty that must be addressed include food insecurity, social exclusion, lack of physical assets, vulnerability etc. Access to capital/assets and the influence of policies and institutions also have a say.

I hope, the findings of the study and the recommendations made thereof will contribute to the policy and planning measures for improved programme delivery.

**(Upendra Padhi)**  
**Director, CRD**

# ACKNOWLEDGEMENT

The present report is the outcome of the study on the impact assessment of the two external aided projects namely WORLP and OTELP in four KBK districts of Orissa sponsored by the Planning Commission, Govt. of India. We are grateful to the Planning Commission for providing us the opportunity to conduct the study.

We would like to thank the Director, Orissa Watershed Development Mission, Project Director, Project Support Unit, OTELP, the PDs of District Watershed Projects of Bolangir, Nuapada and Kalahandi and PA, ITDA of Kalahandi and Koraput districts for their kind cooperation. Interactions were held with the district teams comprising Assistant Project Directors (APD) and members of the Capacity Building Team (CBT). We gratefully acknowledge their valued sharing that facilitated a better understanding of the programs.

We extend our heartfelt thanks to the PIAs: JSCO-Patnagarh, JSCO-Khaprakhol, SVA, Khariar, LWS, Boden, CPSW, Komna and the FNGOs: CYSD, Laxmipur and RASS, Bandhugaon for their kind support and co-operation in sharing information and facilitating community interaction in the project area. Our interactions with the field functionaries like LST, WDT, Community Mobilizers, CLWs and Volunteers in all the visited blocks of 4 districts have been informative and insightful. We thank them all for sharing their experiences with us. Thanks are also due to the PRI members, AWWs, ANMs who spared their time to talk to us and provide us the village level secondary data.

The members of POs: WA, WDC, VDC, VLSC, SHGs, Users Group provided their ungrudging support during the data collection process. We are obliged to all of them for their support.

I acknowledge with thanks the valuable guidance, useful sharing and support given by Prof. Upendra Padhi, Director CRD and Prof. T Dutta, Executive Director CRD in planning and conducting the study. I extend my heartfelt thanks to the Research Associates and Field Investigators who conducted the study sincerely. The computer software and secretarial assistance provided by Mr. Deepak Kumar Pati is thankfully acknowledged.

Our heartfelt thanks go to the men and women in the villages who took the time off from their work for discussions. Last but not the least the cooperation of the respondents in providing us the required information is gratefully acknowledged.

**(N C Dash)**  
**Project Director**



# EXECUTIVE SUMMARY

## Background

The present report is the outcome of the study on impact assessment of the project interventions of two ongoing mega external aided projects namely OTELP and WORLP on the livelihood of the poor and marginalized sections of population such as: SC, ST and women in KBK Districts of Orissa.

The study is based mainly on primary information collected at the community and household levels. The sample frame consists of 40 watershed villages, 5 in each of 8 study blocks (2 blocks in each of 4 KBK districts). The selected villages belong to 28 Micro Watersheds initiated before 2005-06. The sample watershed villages in a block are selected from the operational area of one Project Implementing Agency (PIA)/ Facilitating NGO, existing normally one in each block. Besides, five non-project villages in each block have been selected for a comparative analysis of the project impacts. The villages located just outside the catchments are used as a control group. Because of their geographical proximity, the adjoining villages have comparable socioeconomic and biophysical conditions, but with the major difference of not being involved in the watershed development project.

A fixed 10 households representing various social groups focusing on the ST and SC have been randomly selected from each selected village, and relevant information have been collected from the household through Structured Questionnaires. In the process, 400 households in the 40 villages within the watershed and 400 households in 40 villages outside the watershed constitute the sample for the detailed household survey. Group discussions have been also held with the members of WA/WDC/VDC/VLSC/SHG/UGs and interviews with the WDT/LST of PIA/FNGO to assess the institutional mechanism to manage and sustain the project. The schematic approach adopted for the study is a sporadic combination of 'before-after' and 'with-without' situation.

## **Study Objectives**

The General Objective of the study is to assess the impact of the EAP interventions on socio economic status of the poor and marginalized sections of population as SC, ST, Small and Marginal Farmers, Landless Labourers, women etc in KBK Districts of Orissa.

The Specific Objectives are:

- To assess the impact of the interventions on livelihood system and household food security of the poor and marginalized.
- To examine the impact of interventions on crop production/productivity, cropping systems/cropping intensity, farm / non farm employment and income etc
- To determine the impact of interventions on health and education status of the people.
- To examine the impact of the interventions on empowerment of women and their role in enhanced livelihood system
- To examine the nature and extent of the involvement and participation of the target groups in the planning, implementation and monitoring process.
- To recommend ways for improving efficiency & effectiveness of the externally aided projects in the state

## **Study Approach**

For the purpose of assessing the impact of watershed development program on rural livelihoods we have selected watersheds in four KBK districts of Orissa. The project-implementing agencies of the watersheds have been both GO and NGO. Impact assessment has been carried out across different social groups using the village and household level information on various socio-economic, ecological and gender aspects.

## Impacts on Livelihoods

- Increased access to physical assets such as agricultural implements (pump-sets, sprayers), village level amenities (community ware houses, community halls, drying yards, Threshing Yards, Village Tanks), village level facilities (grain bank, PDS), livestock, water & soil conservation structures (Earthen Bonding and Stone Bonding, Gully Control Structures, Continuous Contour Trenches, Staggered Contour Trenches) is evident in the villages within the water-sheds.
- The villages within watersheds show increased access to natural assets such as irrigation structures (WHS, dug wells, farm ponds, water irrigation channels) and plantations both in the public and private land.
- Increased access to financial capital such as increased savings and increased credit from the SHGs, Banks and other financial institutions is evident in the project villages.
- The access to social capital such as community-based institutions (Self Help Groups, VSS, Grain Banks, water-shed management committees/sub-committees and drinking water facilities etc.) is more in the project villages than in the non-project villages.
- Increased access to health services is evident from increased institutional delivery and decreased IMR in the project villages.
- The cropping pattern has undergone a paradigm shift from subsistent farming of coarse cereals and minor millets to commercial cropping of fine cereals and cash cropping of cotton, groundnut, and lemon grass, tobacco leaves, vegetable in villages within the watersheds.
- The household food self-provisioning of the watershed villages is averaged at 5 months, which is higher than that in the non-watershed villages (3 months), evident of increased household food security.

- Assured irrigation through water management structures as WHS, Check dams, farm ponds, dug wells/ring wells have been able to augment the crop output through the “crop area effect” and the “crop yield effect”. The “crop area effect” in turn has been influenced by the “land area effect” and the “intensity of cropping effect”. Land development measures enabling cultivation of hitherto fallow lands have increased the land area under plough and thus the crop area. Irrigation has also increased cropped area through additional crops in Rabi season.
- There has been a step up in crop yield through a move from the traditional low productivity to improved farming system. The rise in yield is the combined effect of several mutually reinforcing factors like the use of irrigation water, the adoption of HYV seeds, the intensification of fertilizer application, the availability of extension services, the use of disease controlling pesticides and the adoption of land development measures.
- Assured supplemental irrigation through reducing crop-risk has induced intensive use of farm inputs especially of the HYV seeds and chemical fertilizers.
- The project villages are commonly using the modern farm inputs like the HYV seeds, the chemical fertilizers, bio fertilizer / pesticides etc.
- Wage that contributes about 44% to the total household annual income is a major livelihood option of the people cut across social groups in the project area.
- Out of 374-wage employment per year per household, 170 man-days (45%) are from the agricultural and 204 man-days (55%) from the non-agriculture sources in the project villages. The non-project villages show a similar pattern with however lower 352 man-days created across the sources.
- The wage employment in agriculture for ST shows the highest 178 man-days followed by 166 days for OBC and 152 days for SC. But in non-agricultural wage employment, the SC shows the highest employment of 224 man days followed by 204 days for ST and 160 days for OBC.

- The prevailing wage rate is found higher in the project villages than in the control villages. The wage rate above Rs.60 prevails in 40% of the project villages against 5% in the non-project villages.
- Over 3/4<sup>th</sup> of the villages have access to the Revenue/ Village Forest and Reserve Forest. The average household income earned per annum from the NTFP amounts to Rs.1464 in the project villages against Rs.876 in the non-project villages.
- The gross annual income of the sample households in the project villages is averaged at Rs.32364 against Rs.29009 for the households in the non-project villages.
- Income from wage is the dominant source of household income both in project (44%) and non-project villages (50%). Income from agriculture is the next important sources of household income. The share of agriculture in household income ranges from 32 percent for project villages to 23 percent for non-project villages. About 8% of the households' income of the project villages comes from non-agricultural enterprises against 6% of the non-project villages. Forestry contributes significantly to the household income (4.5%) in the project villages against 3% in the non-project villages.
- Assured supplemental irrigation has somehow effected the farm stabilization in terms of crop yield, total crop output and farm income. It is evident from the fact that 48% of the non-watershed villages reported crop loss (kharif) to varied extent due to drought in 2008 against 35% of the project villages
- 19% of the households in the project villages and 16% of the households in the non-project villages report food self-provisioning from 1 to 3 months. The food self-provisioning for 4-6 months is reported by 42% of the households in the project villages against 29% in the non-project villages. An equal 11% of the households both in the project and non-project villages report food self-provisioning above 6 months. Over 90% of the households have access to PDS.
- 15% of the sample households in the project villages report migration. Among the migrants, the SC and ST constitute over 86% .

- The IMR for the sample districts as a whole is arrived at 89 compared to the prevailing rate of 71 per 1000 live births in the state of Orissa. The IMR for the project villages is arrived at a low 64 against a very high rate of 109 for the non-project villages. Neonatal Mortality Rate is prominent with over 3/4<sup>th</sup> of the infants dying within first month of their birth.
- The piped-water supply in some project villages has reduced the drudgery of women in fetching drinking water. Distribution of pressure cookers and smokeless chullha by certain PIAs has reduced the drudgery of women in cooking.
- The household participation in the watershed activities especially in income generation programme is quite high.
- There is a poor institutional relationship between the LSTs and the WDTs. The staff turnover among the LST/WDT is very high. The difference in the pay structure between the LST and WDT staff is found to be a discouraging factor.

## **Recommendations**

- The Watershed Development Committees/ Village Development Committees formed are not in a position to sustain the project activities and cannot independently handle the development activities when the services of PIAs/FNGOs are withdrawn. They need further capacity building.
- Social and human capital developments in the programs are poor that needs further strengthening.
- Market linkages for agricultural and forest produces need to be strengthened through organization of primary producers co-operatives as one onion producers cooperative formed in Komna block. The Primary cooperative should deal with procurement, value addition, collective bargaining etc at the cluster level.

- The Gram Panchayats in the project area are to be capacitated to own, control and manage the procurement and trade of NTFP. Orientation/training for the PRIs on PESA should be organized.
- Forest resources provide a substantial proportion to people's livelihood base. The PIAs/FNGOs should support SHGs to set up different NTFP enterprises for value addition to the collected NTFP.
- The effectiveness of community organization and sustainability of the watershed activities depend to a large extent on the participation of all including the landless that are marginally addressed.
- The women SHGs are highly dependent on the FNGO support in documentation and group management. Capacity strengthening is required with a view to enabling the groups handle their finances and internal controls independently.
- Many poor households in the programme areas are still out of the SHG fold. In most cases the inability to contribute saving subscriptions is identified as the cause. Efforts should be made to integrate them.
- To enhance employment opportunities for the landless labourer, the project should focus on increasing non-land based activities, income-generating activities, wage employment opportunities and individual or group enterprises. Proportionally greater resources have to be invested in very poor households compared to other households so as to give them a big push to go beyond the poverty limit.
- Skill development training to the very poor landless labourers / marginal farmers and women should be accelerated with provision of extended infrastructure for income generation activities.
- Human health should be integrated as an important component of livelihoods security.
- The role of WDT in the post project activities is important particularly for resource mobilization through inter-departmental coordination and for technical back up

- Effective linkages among the secondary stakeholders in the project area are important for successful implementation of the projects.
- The projects should intensify convergence of selective poverty focused programs such as NREGS, BRGF. Initiatives for access to social welfare, child development, and education and health schemes such as pensions for old people, widows and the handicapped should be taken up. Systematic convergence with NREGS is stressed upon.
- The Watershed Guidelines provide for Gram Panchayat to become a PIA. The projects should adopt a pro-active approach to appoint a few Gram Panchayats as PIAs on an experimental basis.
- The Watershed Associations should be effectively linked to the Gram Panchayats so that the utilization of the development programs could be optimized.
- Number of women CLWs/Volunteers is relatively low in the Programs and hence efforts should be taken to recruit qualified female staff to achieve gender balance.
- The existing salary structure of the WDT may be revised with a view to retaining skilled and trained staff. Because of high turnover of staff in the programs, regular capacity building interventions for new LST and PIAs staff is necessary.
- The women should be empowered and facilitated to articulate their needs in village level planning and also to participate pro-actively to monitor project activities and decision-making.



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## LIST OF ABBREVIATIONS

|       |  |
|-------|--|
| AH    | Animal Husbandry                         |
| AAP   | Annual Action Plan                       |
| CBO   | Community Based Organization             |
| CBT   | Capacity Building Team                   |
| CED   | Chronic Energy Deficiency                |
| CIG   | Common Interest Group                    |
| CLW   | Community Link Worker                    |
| CPR   | Common Property Resources                |
| CSO   | Civil Society Organization               |
| CPSW  | Council for Professional Social Workers  |
| DFID  | Department for International Development |
| DRDA  | District Rural Development Agencies      |
| EPA   | Entry Point Activity                     |
| GP    | Gram Panchayat                           |
| FGD   | Focus Group Discussion                   |
| HH    | Household                                |
| Ha    | Ha Hectare                               |
| JFM   | Joint Forest Management                  |
| KBK   | Koraput, Bolangir & Kalahandi            |
| KL    | Kendu Leaf                               |
| LST   | Livelihoods Support Team                 |
| MIS   | Management Information Systems           |
| LWS   | Lutheran World Services                  |
| MWs   | Micro-Watershed                          |
| MFP   | Minor Forest Produce                     |
| NGO   | Non Government Organization              |
| NTFP  | Non Timber Forest Produce                |
| NREGS | National Rural Employment Guarantee Act  |
| NTFP  | Non-Timber Forest Product                |
| NRM   | Natural Resource Management              |

|       |  |
|-------|--|
| MART  | Marketing And Research Team                                |
| OWDM  | Orissa Watershed Development Mission                       |
| ORMAS | Orissa Rural Marketing Society                             |
| OBC   | Other Backward Caste                                       |
| PD    | Project Director   |
| PDS   | Public Distribution System                                 |
| PESA  | Provisions of Panchayat (Extension to Scheduled Areas) Act |
| PST   | Project Support Team                                       |
| PHC   | Primary Health Center                                      |
| PIA   | Project Implementing Agency                                |
| PRA   | Participatory Rural Appraisal                              |
| PRIs  | Panchayati Raj Institutions                                |
| RF    | Revolving Fund   |
| SC    | Schedule Caste   |
| SHG   | Self Help Group  |
| ST    | Schedule Tribe   |
| SGSY  | Swarnajayanti Gram Swarozgar Yojana                        |
| SVA   | Sahabhazi Vikas Abhiyan                                    |
| TDCC  | Tribal Development Cooperative Corporation Ltd.            |
| UG    | User Group   |
| UK    | United Kingdom   |
| VDC   | Village Development Committee                              |
| VSS   | Van Sanrakhyana Samiti                                     |
| WA    | Watershed Association                                      |
| WDC   | Watershed Development Committee                            |
| WORLP | Western Orissa Rural Livelihoods Project                   |
| WDF   | Watershed Development Fund                                 |
| WDT   | Watershed Development Team                                 |
| WHS   | Water Harvesting Structure                                 |

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# CHAPTER – I

## INTRODUCTION

### 1.1 BACKGROUND:

In order to bridge the resource gap for development programmes, the State Government has sought financial assistance from various external sources. Such assistance formed an important component of plan finance. A couple of Externally Aided Projects (EAPs) to promote livelihood are being implemented in KBK Districts of Orissa since the 10th Plan period. The two ongoing external aided mega projects in the livelihood sector that the present study refers to are:

- Western Orissa Rural Livelihood Project (WORLP)
- Orissa Tribal Empowerment and Livelihood Project (OTELP)

#### 1.1.1 Western Orissa Rural Livelihood Project

The Western Orissa Rural Livelihoods project (WORLP) is a ten-year project implemented by the Orissa Watershed Development Mission (OWDM) of Government of Orissa and funded by the UK Department for International Development (DFID).

The project started in the year 2000 in the two districts - Bolangir (14 blocks) and Nuapada (5 blocks) and in January 2004 expanded to the new districts of Bargarh (4 blocks) and Kalahandi (6 blocks). The following table depicts the district and year-wise phasing of the Micro Water Sheds.

| Districts    | Blocks    | 00-01    | 01-02     | 02-03    | 03-04      | 04-05     | 05-06     | Total      |
|--------------|-----------|----------|-----------|----------|------------|-----------|-----------|------------|
| Bolangir     | 14        | 4        | 16        | -        | 72         | 32        | 16        | 140        |
| Nuapada      | 5         | -        | 6         | -        | 36         | 8         | -         | 50         |
| Kalahandi    | 6         | -        | -         | -        | -          | 24        | 36        | 60         |
| Bargarh      | 4         | -        | -         | -        | -          | 416       | 24        | 40         |
| <b>Total</b> | <b>29</b> | <b>4</b> | <b>22</b> | <b>-</b> | <b>108</b> | <b>80</b> | <b>76</b> | <b>290</b> |

The project outlay is Rs. 230 Crores, out of which 140 crores are available as Financial Aid for implementing the Watershed and Watershed Plus activities. Rs. 90 Crores is available as Technical Cooperation fund for technical support, Capacity Building, monitoring and evaluation, project management etc. Theoretically, investment made by WORLP in a MWS of 500 Ha is 47.5 lakhs. The cost norm of Rs. 6000 per hectare is being followed in implementing the Watershed activities, while Rs. 3500 per hectare is provided towards Livelihood components.

WORLP adopts a “watershed plus” approach, building on Government of India watershed guidelines with additional resources targeted on the poor and marginalized. The project follows a sustainable rural livelihoods strategy, which takes a holistic view of the assets on which rural people base their livelihoods. The strategy recognizes that natural resource interventions are necessary but not sufficient for poverty elimination; and that in areas of great inequality, special approaches are needed to enable the poorest to overcome access barriers to natural resources. The project supports and follows Gol's Watershed guidelines, but with extra resources for "watershed plus" activities as capacity building, minor irrigation, drinking water, and livelihood initiatives for the poorest. The watershed plus component has an additional Rs. 3,500/- per hectare for promoting livelihoods among poorest in the project areas. The project places a strong emphasis on broadening the scope of watershed development activities to ensure that development responds to the needs and priorities of the poor. The project includes four elements to address weaknesses in watershed projects:

- Additional resources for activities beyond the scope of the watershed guidelines e.g. irrigation, drinking water, sanitation, forestry, micro
- Capacity building for vulnerable groups.
- Strengthening the government staffing structure and capacity building to promote convergence of government rural poverty interventions;
- Focusing on enabling policies (e.g. access to non-timber forest products).

The project seeks to bring benefits to poor groups, rather than confining itself to maximizing overall income in the area. The project analyses the constraints and opportunities facing vulnerable groups and uses participatory micro planning as a tool, which reflects the livelihood needs of the poorest. The project has supported



investments prioritized through such planning to improve the productivity of land, provision of water and improve drinking water and sanitation. For the poorest groups it is promoting micro credit and non-farm activities. It has been strengthening the capacity of government organisations, local government and NGOs to work together in addressing poverty.

At the State level, the Orissa Watershed Development Mission (OWDM) is the Nodal Agency and is responsible for planning, implementing and monitoring the project. At the District level, the Project Director, Watersheds is responsible for project implementation while the Project Implementing Agency (PIA) facilitates implementation of the project at the Watershed level. In each block, one Project Implementing Agency (PIA) responsible for ten micro watersheds is implementing the project

At the State level, a Project Support Unit (PSU) consisting of Subject Matter Specialists supports the Watershed Mission, while at the District level Capacity Building Team (CBT) consisting of 4 – 5 Subject Matter Specialists supports the Project Director, Watersheds. Apart from the Watershed Development Teams, which are available with the PIA under normal Watershed programmes, an extra Livelihood Support Team (LST) is provided to the PIAs at the Watershed level.

### **1.1.2 Orissa Tribal Empowerment And Livelihood Project**

Orissa Tribal Empowerment and Livelihoods Programme (OTELP) is a watershed based livelihood promotion program supported by the International Fund for Agricultural Development (IFAD), Department for International Development (DFID), World Food Programme (WFP), Govt. of India and Govt. of Orissa.

The programme covers the 30 most backward blocks with tribal concentrations in seven districts of Southern Orissa namely Gajapati, Kalahandi, Kandhamal, Koraput, Malkangiri, Nawarangpur and Rayagada. The entire region is hilly and forested and located along the eastern fringes of the Eastern Ghats in the State, populated substantially by the Scheduled Tribes. Most of the Project villages are remote and are almost entirely populated by tribal people. Tribal people here subsist on a patchwork livelihood comprising of shifting cultivation (slash and burn cultivation); low intensity

rain-fed agriculture in the plains along streams and on terraced hill slopes; gathering of forest produce, livestock rearing, including small ruminants and backyard poultry; and wage earnings as unskilled workers locally as well as through migration to distant places. The Programme is being implemented in 3 phases over 10 years. Phase I of OTELP is now being implemented in ten tribal blocks of four districts namely Kalahandi, Koraput, Kandhamal and Gajapati. Phase II launched since January 2008 covers 20 blocks including these districts and the additional districts of Rayagada, Malakanagiri & Nawrangpur. Phase III is going to commence in 2011.

The entire programme is for 10 years divided in 3 phases: Phase -1 2003-2006 (3 yrs), Phase -2 2007-2011 (4 yrs), Phase -3 2012-2014 (3 yrs). The duration of programme implementation in each micro watershed is for 7 years covering 3 phases i.e.: **Probation phase** (2 years) – organizing communities into institutions, building capacity, Village Development And Livelihood Plan (VDLP), etc; **Implementation phase** (3 years) – actualizing the activities planned in the VDLP through agreed institutions. And **Consolidation Phase** (2 years) – sustain the process of institution building and withdrawal

The total cost of the Programme, over 10 years, is estimated at USD 84 million. The proposed IFAD loan of USD 22 million would finance 26% of total programme costs. Of the remainder, WFP would contribute USD 11 million (13%) in food assistance; DFID USD 34 million, the Government of Orissa, USD 9 million; formal financial institutions, USD 0.4 million; and the beneficiaries, USD 8 million.

The Programme covers 30 Blocks to benefit about 75000 households in 1200 villages of southwestern Orissa. The villages in which the Schedule Tribes and Scheduled Caste form not less than 60% of the population and where most households are below the poverty line are selected under this programme. The programme adopts an inclusive approach, targeting all households living in the participating villages and hamlets.

### Program Strategy

The overall strategy of the Programme focuses on empowering the tribal and enabling them to enhance their food security, increase their incomes and improve their overall quality of life through more efficient natural resource management based on the

principles of improved watershed management and more productive environmentally sound agricultural practices and through off-farm/non-farm enterprise development. A strong emphasis is placed on promoting participatory processes, building community institutions, fostering self-reliance, and respecting the indigenous knowledge and values of tribals. The Programme adopts a flexible, non-prescriptive, process-oriented approach to enable the stakeholders to determine the scope of Programme activities, their timing, pace and sequencing.

The development actions to be supported through the Programme are identified by the communities through a participatory planning exercise. The Programme adopts a 'watershed plus' approach using the watershed as the basic vehicle, for natural resource management but with the scope to address broader issues of sustainable livelihoods including savings and credit, access to common property resources, off-farm/non-farm activities, issues related to non-timber forest products, and community Infrastructure. WFP food assistance is likely to enhance the capacity of food insecure households to participate in developmental interventions, which strengthens their long-term food security and improve their overall well-being.

The objective of the Programme is to ensure household food security and enhance the livelihood opportunities and overall quality of life of the tribal communities, based on sustainable and equitable use of natural resources. The specific objectives are to:

- (a) Empower and build the capacity of marginal groups as individuals, and grassroots institutions;
- (b) Enhance the institutional capacity of government organisations, Panchayati Raj institutions, NGOs, etc.;
- (c) Promote activities, which generate sustainable increases in production and productivity of land and water resources in a sustainable and equitable manner;
- (d) Harness the indigenous knowledge and blend it with technological innovations; and
- (e) Encourage the development of pro-tribal environment.

The focus of the Programme is on developing sustainable livelihoods based on natural resource management within the context of watershed development but with scope for additional activities e.g. other income generating activities, rural infrastructure and social sector activities. The Programme has two major components:

i) Empowerment and Capacity Building of Communities and Support Agencies:

The Programme supports NGOs to mobilize communities, empower them through awareness and capacity building; assist them, through micro-planning exercises in the prioritization of their development needs and in the formulation and implementation of development proposals and build/strengthen appropriate community institutions as Village Development Committees, Village Level Sub-Committees, Village level Finance and Social Audit sub-committees and various user groups

ii) Livelihoods Enhancement

Under the programme, for livelihoods enhancement, various natural resource management activities like land and water management, agriculture and horticulture development, participatory forest management, community infrastructure building are taken up. Each watershed committee has a band of volunteers to support the field implementation of the different components of the NRM activities. Out of the total investment, NRM activities use more than 50 per cent of the funds. The Programme supports: i) undertaking of watershed development works; ii) rehabilitation of rural infrastructure; iii) collaborative forest management assisting communities to regenerate degraded forest land; iv) improvements in agricultural productivity; v) improvements in animal husbandry through addressing the issue of animal health; vi) improved access to credit through the promotion of SHGs and linking them with formal financing institutions; vii) promotion of preventive health care measures through community action; viii) functional education for children; and ix) Development Initiatives Fund to finance promising activities.

Operational Modalities of Program Implementation

The project guidelines make it mandatory for the state government to create an elaborate institutional structure to plan, implement and monitor the program activities at the district levels, where the available funds are disbursed. The overall success of the program

depends to a large extent on the vision and effective orientation of the Project Implementing agency (PIA), which is responsible for creation and capacity development of the project/ village level institutions like Watershed Association (WA), Watershed Development Committee (WC), etc

The Ministry of Tribal Affairs at the central level and the Scheduled Tribe/Scheduled Caste Development Department at the state level are the nodal agencies for the programme. The Department has opened a cell called OTELP Programme Support Unit (PSU) headed by a Programme Director. In addition, the Integrated Tribal Development Agency (ITDA) at the district level is responsible to facilitate the programme implementation and to supervise it. The programme is implemented in partnership with civil society institutions. The basic institution is the VDC at the MWS level and the FNGO at a cluster of about 10 MWSs. The Facilitating NGOs (FNGOs) have been engaged to facilitate the implementation at the block level. Each micro-watershed is being governed by a Village Development Committee, which is registered as a Society at the district level. Since each watershed covers about 2-5 villages, Village Level Sub-committees (VLSC) has been organized at the natural village level within the watershed. In addition User Groups, Village Sankrakhshan Samiti (VSS) to protect the forests, Self Help Groups (SHGs) for savings and credit and Common Interest Groups (CIGs) for micro-enterprise have been organized, all of which are informal. The facilitating NGOs (FNGO) provides support to SHGs and VDCs for building their capacity, undertaking micro planning and supervision of Programme implementation. They provide a multidisciplinary Watershed Development Team (WDT) to support communities in the implementation of the watershed development works and other programme activities. The project guidelines make it mandatory for the state governments to create an elaborate institutional structure to plan, implement and monitor the project activities at the district levels. The details of this defined structure including the implementing agencies at various levels, their key functions areas are presented as follows:

PSC: Programme Steering Committee (PSC) provides overall guidance to the Programme headed by the Chief Secretary.

SLPMC: State Level Programme Management Committee (SLPMC) or Core Committees at Department level for Inter-Department and Inter-Agency coordination headed by the Secretary, ST&SC Development Department.

PSU: Programme Support Unit (PSU), the lead organ with a small team of professional staff headed by Programme Director for day-to-day programme implementation and coordination of programme activities, supervision and interface between Govt. & CBO.

ITDA: The ITDA at district level implements the program in coordination with the facilitating NGOs, CBOs, User Groups and Financial Institutions etc.

PMC at District Level: A core committee at ITDA level to ensure coordination among different Departmental Agencies and monitoring Programme Implementation – headed by District Collector

Facilitating NGOs: To facilitate and support social mobilization, capacity building and participatory planning and implementation.

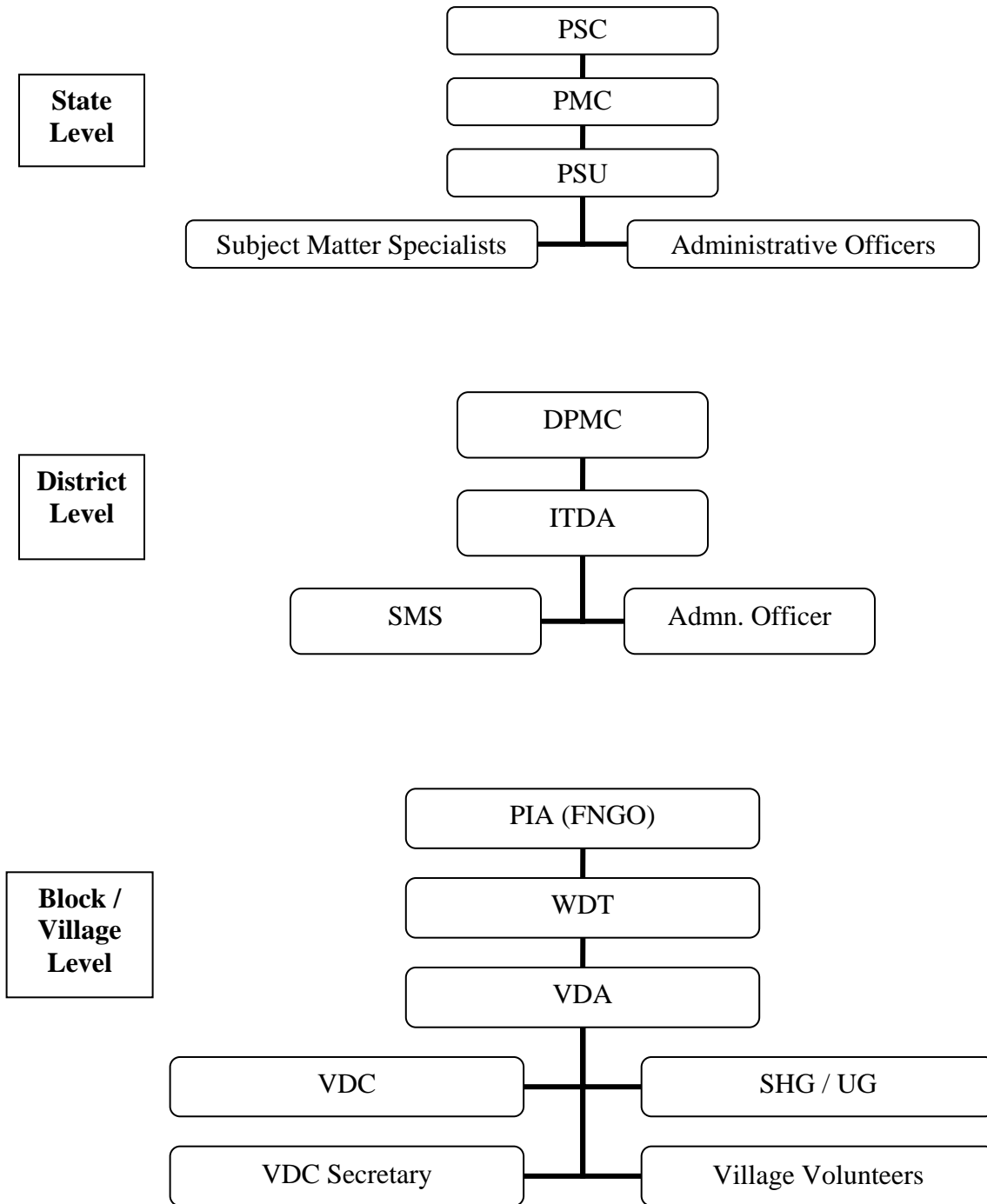
VDCs: Village Development Committee – grass root level implementing agencies at the Micro Watershed level.

VLSC: Village Level Sub Committee at the Village Level for implementation of programme activities.

VSFASC: Village Social & Financial Audit Sub Committee at the Village level for social and financial audit of programme activities and expenditure.

Each FNGO is facilitating the project implementation of around 5000 ha covering around 30 villages. These FNGOs have a watershed development team, consisting six personnel (One Engineer, One Agriculture Officer, One Social Scientist, One Micro Finance Officer, One Forestry Officer and One Livestock Officer). Along with the above 10-Community Mobilizers and a part time Coordinator support them.

# ORISSA TRIBAL EMPOWERMENT & LIVELIHOODS PROGRAMME (INSTITUTIONAL ARRANGEMENTS)



## **1.2 STUDY OBJECTIVES**

### **General Objective:**

- To study the impact of the EAP interventions on socio economic status of the poor and marginalized sections of population as SC, ST, Small and Marginal Farmers, landless labourers, women etc in KBK Districts of Orissa.

### **Specific Objectives**

- To assess the impact of the interventions on livelihood system and household food security of the poor and marginalized.
- To examine the impact of interventions on crop production/productivity, cropping systems/cropping intensity, farm / non farm employment and income etc
- To determine the impact of interventions on health and education status of the people.
- To examine the impact of the interventions on empowerment of women and their role in enhanced livelihood system
- To examine the nature and extent of the involvement and participation of the target groups in the planning, implementation and monitoring process.
- To recommend ways for improving efficiency & effectiveness of the externally aided projects in the state

## **1.3 STUDY METHODOLOGY**

“A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living”. “A livelihood is sustainable when it can cope with and recover from stresses and shocks, and maintain or enhance its capabilities and assets both now and in the future, while not undermining the resource base”.



The sustainable livelihoods (SL) approach to development aims at promoting development that is sustainable not just ecologically, but also institutionally, socially and economically and to produce genuinely positive livelihood outcomes. Sustainable Rural Livelihoods (SRL) Strategy is based on the concept of increasing access to capital (physical, social, human, natural and financial) from which rural poor make up their livelihoods. People's ability to escape from poverty is critically dependent on their access to assets (Booth et al., 1998). Both quality and quantity of assets matter along with the options to convert assets into productive activities. The sustainable livelihoods framework (SLF) facilitate access to certain assets that people use for achieving their livelihood such as increasing their incomes, promoting health etc. People in a combination of livelihood activities called the livelihoods strategy use the assets to achieve their objectives. The assumption is that people pursue a range of livelihood outcomes (for example better health, increased income) by drawing on a range of assets to undertake a variety of activities. The activities they adopt and the way in which they reinvest in assets is driven in part by their own preferences and priorities. However, it is also strongly influenced by the context (e.g. climate, population and the effects of changes in these) and by external policies and institutions. These policies and institutions have a critical influence on people's access to assets and Livelihood opportunities. There are five general categories of assets with indicators as follows:

**Human:** Reduced infant Mortality, Reduced Maternal mortality, Higher literacy Rates, Increased self esteem and self Confidence

**Social:** Poor become members of new groups ( SHGs, UGs), Women are active members of CBOs, Linkages between SHGs bank and line departments established and Functional

**Physical:** Basic household assets as House, durables, Productive Items as Plough, Bullock, and General Infrastructure as pukka road, Water supply

**Natural:** Access to land based or water based Resources, Productivity of Land-based or Water-based Resources

**Financial:** Increased Liquid assets as Cash, Livestock, Jewelry etc, Reduced Dependence on Exploitative loans, Improved Access to loans

Both the external aided projects have adopted the sustainable rural livelihood strategy to development. Hence the study adopts the SL framework that provides an analytical structure, highlighting key components of livelihoods against which project impact can be assessed. In the impact assessment, changes in measurable are assessed not in their own right, but in terms of the contribution they make to livelihoods. The contribution may be direct (e.g. adding to income, health, food etc.) or indirect (affecting their assets, activities and options, and ability to cope with shocks). Changes in the way people live their lives may be just as important as more obvious changes in what they achieve. The state/national policy influences on livelihoods are also part of the assessment.

The study adopts 'reflexive comparison' where before and after scenarios are compared for the households within watersheds for reasonable estimates of the impact. 'With and without approach has also been adopted where present situations are examined for both control and beneficiary households/villages.

**Sampling framework:**

For the purpose of assessing the impact of the two watersheds based livelihood programs, 40 watershed villages are selected, 5 in each of 8 blocks in four districts Districts of Orissa. Completion of the watershed activities was the criterion for selection of the villages. The purpose was to assess the impact only in the technically completed watersheds.

The study initially proposed to cover 8 Project Blocks, one Block from each of the 8 KBK Districts of Orissa. The Phase-I of the OTELP project was launched in 2004-05 in 2 KBK Districts of Orissa namely Kalahandi (2 Blocks) and Koraput (3 Blocks). The Phase-II of the OTELP was however launched in March 07. The interventions were not undertaken in the Phase-II blocks as found during our pre testing of the data collection tools. Keeping in view the ground realities of the project implementation status of OTELP, it was thought imperative that without changing the number of sample blocks / villages, the number of KBK districts for the study might be confined to four districts, namely Koraput & Kalahandi districts under the OTELP and Balangir & Nuapada districts under the WORLP. The Planning Commission approved the suggested modification with, however,

advising to take one WORLP block in Kalahandi district along with one OTELP block. Hence the study covered 8 sample Blocks, 2 from each of the 4 KBK Districts as under:

| Sl. No | Name of the District | Name of the Block | Name of the EAP |
|--------|----------------------|-------------------|-----------------|
| 1      | Bolangir             | Khaprakhol        | WORLP           |
|        |                      | Patnagarh         | WORLP           |
| 2      | Kalahandi            | Narla             | WORLP           |
|        |                      | Thuamul Rampur    | OTELP           |
| 3      | Koraput              | Bandhugaon        | OTELP           |
|        |                      | Laxmipur          | OTELP           |
| 4      | Nuapada              | Boden             | WORLP           |
|        |                      | Komna             | WORLP           |

The study that integrates both primary & secondary data has been conducted at two levels: institutional & community. The secondary data were collected from the Project Implementing Agencies (PIAs) / Facilitating NGOs (FNGO) of the respective districts. The primary data of community and household level were collected through a set of structured questionnaires as Household Schedule and Village Schedule duly approved by the Planning Commission. Apart from Quantitative Method of data collection through household survey, the study employed Qualitative Methods of data collection as in-depth interviews with the members of the Village Watershed Association/ Village Development Committee, Users Groups, members of Staff of Watershed Development Team/Livelihood Support Team, Focus Group Discussions with the community members and Women Self Help Groups & Observation/ physical checking of various development measures and structures created under the projects.

A 3 stage sampling scheme was adopted in selecting the sample Blocks, Villages & Households as the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> stage study units respectively. The 1<sup>st</sup> stage of sampling related to selection of the study Blocks. As approved, 8 project blocks, 2 from each of the 4 KBK Districts namely Koraput , Kalahandi Bolangir and Nuapada were selected. The blocks covered under the OTELP/WORLP prior to 2005-06 and having the highest incidence of the disadvantaged SC and ST population were selected for study.

The 2<sup>nd</sup> stage of sampling related to selection of the study villages. The sample size in respect of project villages was restricted to 20% of the project villages in each selected block with at least 5 project villages as the lower limit. Moreover 5 non-project villages located just outside the catchments were taken up as a control group. Because of their geographical proximity, the adjoining villages just outside the watershed have comparable socioeconomic and biophysical conditions, but with the major difference of not being involved in the watershed development project. The study villages were selected randomly from among the villages covered under the Micro Water Sheds under the WORLP/OTELP.

The 3<sup>rd</sup> stage of sampling related to the selection of households. A fixed 10 households in each village were selected on stratified random sampling basis with focus on ST and SC households. Apart from the households from the project villages, 10 households from each of 5 non-project villages in each selected block were studied as control households. The households were selected on random sampling basis with proportional representation of ST/SC families. The sample size of the different study units is as under

| Sl. No       | District  | Block       | No. Of project villages | No. Of non-project villages | No. Of sample HHs in project villages | No. Of sample HHs in Non-project villages |
|--------------|-----------|-------------|-------------------------|-----------------------------|---------------------------------------|---|
| 1            | Bolangir  | Khaprakhhol | 5                       | 5                           | 50                                    | 50  |
|              |           | Patnagarh   | 5                       | 5                           | 50                                    | 50  |
| 2            | Kalahandi | Narla       | 5                       | 5                           | 50                                    | 50  |
|              |           | Th. Rampur  | 5                       | 5                           | 50                                    | 50  |
| 3            | Koraput   | Bandhugaon  | 5                       | 5                           | 50                                    | 50  |
|              |           | Laxmipur    | 5                       | 5                           | 50                                    | 50  |
| 4            | Nuapada   | Boden       | 5                       | 5                           | 50                                    | 50  |
|              |           | Komna       | 5                       | 5                           | 50                                    | 50  |
| <b>Total</b> |           |             | <b>40</b>               | <b>40</b>                   | <b>400</b>                            | <b>400</b>                                |

A broad range of methods and tools were used in the field to carry out the livelihoods impact assessment. Existing literature has been collected and reviewed before the fieldwork started. Semi-structured interviews with individuals provided the type of important detail that often gets lost in a group meeting. During the case studies it proved

particularly useful to conduct one-to-one interviews around the fringe of group meetings to follow-up on key issues as they emerged. Key informants included both primary and secondary stakeholders. Group meetings were held with the general community, WAs, VDCs, UGs, SHGs etc. Household survey could be the only way to gain comparable data to allow for quantification:

*Records and rummaging:* It was necessary to go through records and registers maintained at both community/group/individual level and for secondary data. Visit to the shops or markets to collect local price information was undertaken to explore what local people buy and sell, when and for how much, for the livelihood analysis.

*Observation:* physical checking of WHSs, infrastructures created under the project support was also undertaken.

The steps followed to complete the work include review of literature on WORLP and OTELP, review of different project related documents – reports, micro-plans etc., interaction with different stakeholders such as communities, SHGs, PIAs, LSTs,CBTs, NGOs, DSMS, Gram Panchayats, resource agencies, traders etc, and discussion with the PSU and PST other government institutions at the state level.

There were two teams of two Research Investigators each under the overall supervision of the principal investigator. The investigators were of high quality researchers with over 15 years of research experience and competency in qualitative techniques of data collection. Besides local investigators were recruited as interpreters. A weeklong training of the Investigators was conducted during 15-21 April, 09 with their orientation in the basic objectives/strategies/activities of the WORLP/OTELP, sample selection procedures, quantitative/qualitative study methods, scrutinisation & coding of filled in questionnaires etc.

Field visits and data collection were organized during April through June 2009.

## CHAPTER-II

### PROFILE OF THE SAMPLE UNITS

#### 2.1 PROFILE OF THE KBK DISTRICTS

KBK is an acronym for the undivided Kalahandi-Bolangir-Koraput Districts of Orissa that comprise now 8 districts: Koraput, Malakanagiri, Nawarangpur and Rayagada forming part of undivided Koraput, Bolangir and sonapur carved out of undivided Bolangir and Kalahandi and Nuapada forming part of undivided Kalahandi. These 8 districts comprise 14 Sub-divisions, 17 Tahasils, 80 CD Blocks, 1437 GPs and 12104 villages as follows:

**Table No. –2.1.1: Administrative Divisions of KBK Districts**

| Sl. No.      | District   | Area (Sq.km)  | No. of Units |           |           |           |              |               |
|--------------|------------|---------------|--------------|-----------|-----------|-----------|--------------|---------------|
|              |            |               | Block        | TSP       | Sub-div   | Tahsil    | GP           | Villages      |
| 1            | Koraput    | 8,807         | 14           | 14        | 2         | 7         | 226          | 1,997         |
| 2            | Malkangiri | 5,791         | 7            | 7         | 1         | 3         | 108          | 928           |
| 3            | Nawrangpur | 5,291         | 10           | 10        | 1         | 4         | 169          | 897           |
| 4            | Rayagada   | 7,073         | 11           | 11        | 2         | 4         | 171          | 2,667         |
| 5            | Bolangir   | 6,575         | 14           | -         | 3         | 6         | 285          | 1,792         |
| 6            | Sonapur    | 2,337         | 6            | -         | 2         | 4         | 96           | 959           |
| 7            | Kalahandi  | 7,920         | 13           | 2         | 2         | 7         | 273          | 2,205         |
| 8            | Nuapada    | 3,852         | 5            | -         | 1         | 2         | 109          | 659           |
| <b>Total</b> |            | <b>47,646</b> | <b>80</b>    | <b>44</b> | <b>14</b> | <b>37</b> | <b>1,437</b> | <b>12,104</b> |

The KBK Districts having population over 55 lakhs account for 19.72% of the state population occupying 30.59% of the State geographical area. The socially marginalized communities as Dalit and Tribal dominate the region that comprise 38.72% and a16.63% of the total population in the KBK districts. The Dalit and Tribal population in KBK Districts together constitute over 55% (54.55) of the total population against 38.41% at the state level.

**Table No. –2.1.2: Demographic Profile of KBK Districts**

| District    | HH             | T              | M              | F              | SC             | ST             |
|-------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Bolangir    | 303386         | 1337194        | 673985         | 663209         | 226300         | 275822         |
| Nuapada     | 122601         | 530690         | 264396         | 266294         | 72296          | 184221         |
| Kalahandi   | 320624         | 1335494        | 667526         | 667968         | 236019         | 382573         |
| Rayagada    | 190381         | 831109         | 409792         | 421317         | 115665         | 463418         |
| Nawarangpur | 227026         | 1025766        | 515162         | 510604         | 144654         | 564480         |
| Koraput     | 284876         | 1180637        | 590743         | 589894         | 153932         | 585830         |
| Malkangiri  | 109483         | 504198         | 252507         | 251691         | 107654         | 283538         |
|             | <b>1558377</b> | <b>6745088</b> | <b>3374111</b> | <b>3370977</b> | <b>1056520</b> | <b>2739882</b> |

There are over 20 tribal groups in the region including 4 primitive tribal groups as Bondas, Dadai, Langia Saoras and Dongria Kandhas. As many as 44 out of 80 CD Blocks in the KBK Districts are covered under sub plan areas. The KBK region is mainly hilly and barren. About 90% of its people live in rural areas compared to 86.6% at the State level. The underdevelopment of the area is evident from its lower population density at 152 persons per Sq. Km. compared to 236 for the state. The literacy rate at 36.58% is much lower than the state average of 63.61%. The female literary rate of 24.72% also compares unfavorably with the state average of 50.97%.

**Table No. –2.1.3: Demographic and Literacy Indicators of KBK Districts: 2001**

| District             | Population Density | Population Indicators |              |              |              |              | Literacy Rate |              |
|----------------------|--------------------|-----------------------|--------------|--------------|--------------|--------------|---------------|--------------|
|                      |                    | Total (000)           | Female (%)   | Rural (%)    | ST (%)       | SC (%)       | Total (%)     | Female (%)   |
| 1. Koraput           | 134                | 1,178                 | 49.96        | 83.18        | 50.67        | 13.41        | 36.20         | 24.81        |
| 2. Malkangiri        | 83                 | 480                   | 49.91        | 92.79        | 58.36        | 19.96        | 31.26         | 21.28        |
| 3. Nawrangpur        | 192                | 1,018                 | 49.81        | 94.18        | 55.27        | 15.09        | 34.26         | 21.02        |
| 4. Rayagada          | 116                | 823                   | 50.71        | 85.98        | 56.04        | 14.28        | 35.61         | 24.31        |
| 5. Bolangir          | 203                | 1,336                 | 49.56        | 88.45        | 22.06        | 15.39        | 54.91         | 39.27        |
| 6. Sonapur           | 231                | 541                   | 49.13        | 92.59        | 22.11        | 9.50         | 64.07         | 47.28        |
| 7. Kalahandi         | 168                | 1,334                 | 50.00        | 92.49        | 28.88        | 17.01        | 46.20         | 29.56        |
| 8. Nuapada           | 138                | 531                   | 50.15        | 94.34        | 35.59        | 13.09        | 42.29         | 26.01        |
| <b>KBK Districts</b> | <b>152</b>         | <b>7,241</b>          | <b>49.91</b> | <b>89.89</b> | <b>38.72</b> | <b>16.63</b> | <b>36.58</b>  | <b>24.72</b> |
| <b>Orissa</b>        | <b>236</b>         | <b>36,707</b>         | <b>49.29</b> | <b>85.03</b> | <b>22.21</b> | <b>16.20</b> | <b>63.61</b>  | <b>50.97</b> |

The region is extremely backward, 96% of the CD Blocks are either 'very backward' (44 Blocks) or 'backward' (28 CD Blocks) as held by 'the committee on the constitution of separate Development Board in Orissa'. The old Koraput & Kalahandi districts and part of Bolangir district are hilly. Severe drought and flood also visit this region regularly. The backwardness of this region is hence multifaceted: Tribal and Dalit backwardness, hilly area backwardness and backwardness due to severe natural calamities.

KBK districts are among the poorest in India with nearly 72% of their population below the poverty line. According to the 1999 – 2000 National Sample Survey data, 89.14% of people in the KBK area live below the poverty line (BPL), Kalahandi (62.17%), Nuapada (78.31%), Bolangir (61.06%), Sonapur (73.02%), Koraput (83.81%), Malkangir (81.88%), Nawrangpur (73.66%), Rayagada (72.03%). District wise data about the no. of BPL families as per 1997 census are as follows:

**Table No. –2.1.4: Families Below Poverty Line (BPL):KBK Districts**

| Sl. No.            | District   | HCR ^ (%)    | 1992 Census              |              |              | 1997 Census              |              |              |
|--------------------|------------|--------------|--------------------------|--------------|--------------|--------------------------|--------------|--------------|
|                    |            |              | Total<br>(lakh families) | BPL          | Percent (%)  | Total<br>(lakh families) | BPL          | Percent (%)  |
| 1                  | Kalahandi  | 80.19        | 2.41                     | 2.07         | 85.77        | 3.08                     | 1.93         | 62.71        |
| 2                  | Nuapada    |              | 0.94                     | 0.79         | 83.64        | 1.27                     | 1.09         | 85.70        |
| 3                  | Bolangir   | 48.89        | 2.39                     | 1.81         | 75.82        | 3.30                     | 2.01         | 61.06        |
| 4                  | Sonapur    |              | 0.92                     | 0.57         | 62.29        | 1.10                     | 0.80         | 73.02        |
| 5                  | Koraput    | 92.24        | 1.88                     | 1.63         | 86.59        | 2.65                     | 2.22         | 83.81        |
| 6                  | Malkangiri |              | 0.80                     | 0.68         | 84.81        | 1.09                     | 0.89         | 81.88        |
| 7                  | Nawrangpur |              | 1.52                     | 1.38         | 90.56        | 2.15                     | 1.59         | 73.66        |
| 8                  | Rayagada   |              | 1.42                     | 1.22         | 86.04        | 1.88                     | 1.36         | 72.03        |
| <b>Total (KBK)</b> |            | <b>87.14</b> | <b>12.28</b>             | <b>10.14</b> | <b>82.60</b> | <b>16.52</b>             | <b>11.89</b> | <b>71.97</b> |

The KBK districts have been rich in forest resources. But intensive use of forest and destructive dependence of the tribal on forest have led to forest degradation. Although 16,131sqkm that is one-third of the geographical area is recorded as forest, only 5437sq.km. (11.3%) has dense forest (crown density over 40%). Another 6327 sq. km. (13.5%) has thin forest having crown density between 10% and 40% and the remaining 4332-sq.km area (9%) is completely void of any vegetal cover. All the 8 districts at



present are ecologically vulnerable. This is one of the factors of poverty aggravation in the region.

The KBK region that has suffered repeated droughts in the last two decades comprise the poverty basket of India. The drought arising out of erratic monsoon has been of unprecedented nature both in frequency and severity, experiencing nearly famine conditions. The impact of drought on the economy and people has been alarming and diverse. Mass Migration, Starvation Deaths, Enslavement, Deprivation, Destitution and Decline in Living Conditions have been the nerve raising consequences. The chronic poverty of the region despite its better averages in respect of landholding size, per capita food production and level of Govt. assistance than that of the State is attributed to such production factors as erratic rainfall, limited irrigation, limited opportunities on non land based activities. But the key to poverty seems to be production relations as skewed land distribution, land alienation, encroachment on common property resources, dependence on private money lenders, gender issues etc. all of which prevent vulnerable groups to natural resources.

The resource poor tribal rely on rain fed cultivation, which is vulnerable to crop failure due to erratic rainfall. Large segment of tribal population are land less with only access to land for shifting cultivation and sharecropping. Due to small land holdings size and low production, agriculture does not produce enough for assured livelihood. Hence tribal take to non-farm wage employment and collect minor forest produces to supplement their livelihood. Migration, mostly seasonal is common. Despite diversified source of income tribal borrow to bridge the food gap and pay for socio-cultural rites and for alcohol.

Agriculture, which is the major economic activity, is unproductive. Irrigation facilities are extremely limited. Rainfall though adequate is generally erratic and uneven. The entire KBK belt is rain fed with less than 10% of available land being irrigated. The soil is poor in quality with little water retention capacity problems of soil erosion and land degradation is common. All these factors lead to low land productivity. Mono cropping is the general practice. Rice is the major crop raised, other crops being millets, maize, pulses and oilseeds. Productivity of paddy and other crops are very low. The forest provides wild roots and tubers that help the Tribal to bridge the lean period.

Access to land and forest resources is fundamental to the development of tribal, so much so that land can be considered as the heart of the 'tribal problem'. The importance of land to well being is deeply ingrained in the tribal consciousness and alienation of land rights has become one of the main reasons for tension and conflict. Over the years, tribal have gradually been disposed of their land both by non-tribal and by changes in forest policy whereby Tribal are considered encroachers even though they may have cultivated the land for generations. Despite legal protection, many Tribal have lost their entitlements to land as a result of indebtedness, mortgaging, etc. and now rely on precarious sharecropping or leasing arrangements or squatting on unclaimed land. It is estimated that non-Tribal have taken over 54 % to 56% of tribal lands.

The problem of inadequate and uncertain food production is compounded by inadequate income to buy the available food in the market. The Dalit / tribal access to PDS is very limited. Food consumption pattern of Tribal is determined by seasonal availability. Food is deficient in calories for the hard work they do. Nutritional anemia and mal nutrition are common and get aggravated during the lean months.

The tribal livelihood pattern is vulnerable to eco imbalance. Deforestation due to destructive dependence on shifting cultivation coupled with increased pressure on the land has a spiraling effect on soil erosion, loss of soil fertility and declining productivity again aggravated by erratic monsoon. Repeated crop failures have overall stress on the livelihood and production system. The vulnerability of Dalit & tribal communities is increasingly associated with the lack of secure access to land. Land alienation has been a measure source of social tension in the region.

## 2.2 PROFILE OF THE SAMPLE DISTRICTS

### NUAPADA

Nuapada district is located in the western part of Orissa. Its boundaries extend in the north, west and south to Raipur district in Madhya Pradesh and in the east to Bargarh, Balangir and Kalahandi districts. The administrative headquarters is located at Nuapada.



The District of Nuapada was a part of Kalahandi District till early March 1993, but for the administrative convenience, Kalahandi District was divided into two parts i.e. Kalahandi and Nuapada. Nuapada occupies a total area of 3,852 sq km. With a population of 5, 30, 690 the district has a population density of 138 persons per square kilometer. The district also has a fair literacy rate of 42%. Farming is the prime occupation of the people of Nuapada. Paddy, maize,

groundnut and jowar are the key crops of this district.

|                    |                    |
|--------------------|--------------------|
| Date of formation  | 1st April 1993     |
| Area               | 3408 sq. km        |
| Forest Land        | 1865.436 sq. km    |
| Latitude           | 20° 00 to 21° 5 N  |
| Longitude          | 82° 20 to 82° 40 E |
| Population (2001)  | 5, 30,690          |
| Males              | 264396             |
| Females            | 266294             |
| Population density | 138 per sq. km     |
| Sex Ratio          | 1006               |
| Literacy Rate      | 42%                |
| No. of Tehsil      | 5                  |
| No. of Blocks      | 5                  |
| No. of Villages    | 653                |

## BALANGIR



Located in the western region of Orissa, the district of Balangir shares its northern border with Bargarh, southern border with Kalahandi, eastern side with Sonapur and western side with Nuapara. The district is located at 20°11'40" - 21°05'08" north latitude and 82°41'15" - 83°40'22" east longitude. The district has a population of 13, 36,000 according to 2001 census.

While the literacy rate of the district is 54.91%, the population density is 203 per person per sq km (census 1991). Balangir district comprises of 6 tehsils, 14 blocks and 1792 villages. The district has total area coverage of 6575 sq km. The district is famous for the Bhulias & Kastias, master craftsmen who carve excellent motifs on cotton & tassar fabrics.

|                     |                               |
|---------------------|-------------------------------|
| Date of formation   | 1st Nov, 1949                 |
| Area                | 6569 sq. kms                  |
| Latitude            | 20° 11'40" - 21° 05'08" North |
| Longitude           | 82° 41'15" - 83° 40'22" East  |
| Population (2001)   | 13, 35,760                    |
| Literacy Rate       | 54.93%                        |
| No. of Sub-Division | 3                             |
| No. of Tehsil       | 6                             |
| No. of Blocks       | 14                            |
| No. of Villages     | 1792                          |

# KALAHANDI

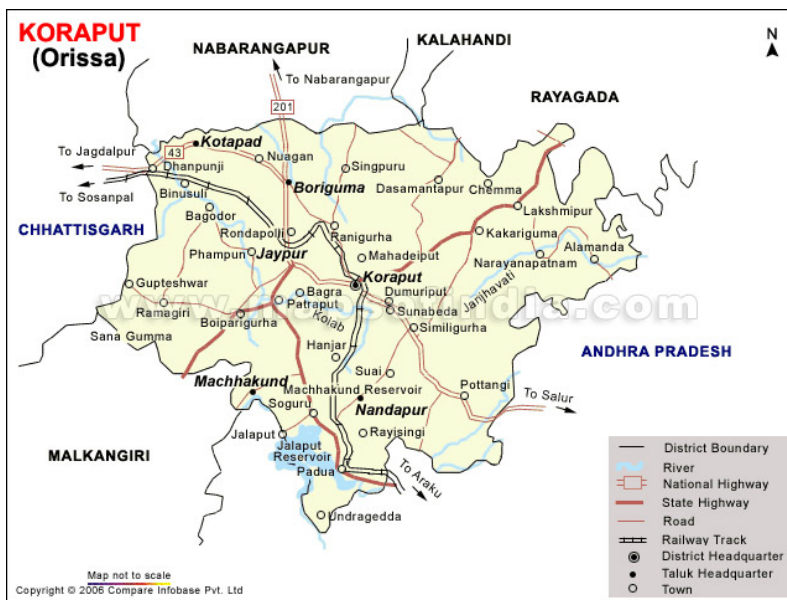


Kalahandi, placed at the southwestern part of Orissa, is geographically located between 19° 3' North and 21° 5' North latitude and 82° 30 East and 83° 74' East longitude. It is surrounded by the district of Balangir and Nawapara in the North, by the District of Rayagada on the South, by Nawarangpur District and

Raipur District of Chhatisgarh on the West and by Rayagada District and Boudh on the East. It covers an area of 7920 sq km out of which. 2,538.01 Sq Km (32%) is under forest. The region is divided into plain and hilly terrains. The district with a population of 1335494 (census 2001) has a population density of 169 persons per sq km. Kalahandi possesses a total cultivable land of 3, 93, 550 hectares out of which 1, 83, 000 hectares of land is utilized for growing paddy. The district is divided into two Sub-Divisions, seven Tehsils, one Municipality, twelve Police Stations, two notified area councils (N.A.C.), thirteen Blocks and 273 Gram Panchayats. The total number of villages in the district is 2236. This is one of the tribal districts of Orissa, with dense forests, hills and minerals.

|                     |                  |
|---------------------|------------------|
| Area                | 8,364.89 sq. km  |
| Latitude            | 19.3 to 21.5 N   |
| Longitude           | 82.30 to 83.74 E |
| Population (2001)   | 13, 35,494       |
| Males               | 6, 67,526        |
| Females             | 6, 67,968        |
| No. of Sub-Division | 2                |
| No. of Tehsil       | 5                |
| No. of Blocks       | 13               |
| No. of Villages     | 2185             |
| Average rainfall    | 1378.20 mm       |

## KORAPUT



Covering a total geographical area of 8,379.30 Square Kilometers, the district of Koraput has a total population of approximately 11,77,954 people. At an elevation of 3000 feet from the minimum Sea level, the topography of Koraput is somewhat table like with an undulating landscape which is dotted

with hundred of hills. The area receives a great amount of rainfall due to the depression from the Bay of Bengal and Koraput receives an annual average rainfall of 1,778 millimeters. The district has a literacy rate of 36.20%. Koraput is a tribal district of Orissa with great natural reserves.

|                     |                         |
|---------------------|-------------------------|
| Date of formation   | 1st.April, 1936         |
| Area                | 8379 sq. km             |
| Latitude            | 17° 40' to 20° 7' North |
| Longitude           | 81° 24' to 84° 2' East  |
| Altitude            | 2900 ft                 |
| Population (1991)   | 11, 77,954              |
| Males               | 589,438                 |
| Females             | 588,516                 |
| Population density  | 36.20% (1991)           |
| No. of Sub-Division | 2                       |
| No. of Tehsil       | 7                       |
| No. of Blocks       | 14                      |
| No. of Villages     | 1997                    |

## 2.3: PROFILE OF THE SAMPLE BLOCKS

There are 8 sample blocks selected for the study, 2 in each of 4 districts namely Bolangir, Kalanandi, Nuapada and Koraput in the KBK region of the State. Besides Narla all the blocks are hilly, forested and hence remote and inaccessible. Road connectivity to the villages is very poor. The incidence of the disadvantaged ST and SC population is quite high. It is over 80% in Thuamulrampur block of Kalahandi district and Laxmipur and Bandhugaon blocks of Koraput district. Poverty is acute with over 3/4<sup>th</sup> of the House Holds below poverty line. Illiteracy is unacceptably high especially among the vulnerable SC and ST population and women as well. Leaving Narla, Patnagarh and Khaprakhol blocks the female literacy in all other blocks is below 20%.

**Table no. –2.3.1: Demographic Profile of the Sample Blocks**

| Sl. No | Name of the District | Name of the Block | No. of GPs | No. of Villages | No. of HHs | Population |       |        | SC Pop (%)  | ST Pop (%)  | Male Literate (%) | Female Literate (%) |
|--------|----------------------|-------------------|------------|-----------------|------------|------------|-------|--------|-------------|-------------|-------------------|---------------------|
|        |                      |                   |            |                 |            | Total      | Male  | Female |             |             |                   |                     |
| 1      | Bolangir             | Patnagarh         | 26         | 164             | 23714      | 98013      | 49161 | 48852  | 13929       | 30704       | 30839             | 16635               |
|        |                      |                   |            |                 |            |            |       |        | <b>14.2</b> | <b>31.3</b> | <b>62.7</b>       | <b>34.1</b>         |
|        |                      | Khaprakhol        | 18         | 133             | 17411      | 70112      | 35013 | 35098  | 10050       | 24173       | 2005              | 9818                |
|        |                      |                   |            |                 |            |            |       |        | <b>14.3</b> | <b>34.5</b> | <b>5.7</b>        | <b>28.0</b>         |
| 2      | Nuapada              | Boden             | 14         | 89              | 17236      | 72056      | 35888 | 36168  | 9429        | 29274       | 16273             | 5717                |
|        |                      |                   |            |                 |            |            |       |        | <b>13.1</b> | <b>40.6</b> | <b>45.3</b>       | <b>15.8</b>         |
|        |                      | Komna             | 27         | 159             | 27150      | 117080     | 57906 | 59176  | 16029       | 51297       | 26451             | 11240               |
|        |                      |                   |            |                 |            |            |       |        | <b>13.7</b> | <b>43.8</b> | <b>45.7</b>       | <b>19.0</b>         |
| 3      | Kalahandi            | Narla             | 26         | 170             | 25691      | 102309     | 51306 | 51003  | 18844       | 27381       | 30846             | 16817               |
|        |                      |                   |            |                 |            |            |       |        | <b>18.4</b> | <b>26.8</b> | <b>60.1</b>       | <b>33.0</b>         |
|        |                      | Th. Rampur        | 16         | 298             | 16299      | 65767      | 32483 | 33284  | 16872       | 37850       | 11349             | 3158                |
|        |                      |                   |            |                 |            |            |       |        | <b>25.7</b> | <b>57.6</b> | <b>34.9</b>       | <b>9.5</b>          |
| 4      | Koraput              | Laxmipur          | 13         | 104             | 13600      | 55268      | 27452 | 27816  | 7383        | 37951       | 8886              | 3735                |
|        |                      |                   |            |                 |            |            |       |        | <b>13.4</b> | <b>68.7</b> | <b>32.4</b>       | <b>13.4</b>         |
|        |                      | Bandhugaon        | 12         | 152             | 11097      | 50000      | 24347 | 25653  | 4316        | 38839       | 5309              | 2783                |
|        |                      |                   |            |                 |            |            |       |        | <b>8.6</b>  | <b>77.7</b> | <b>21.8</b>       | <b>10.8</b>         |

## 2.4 PROFILE OF THE SAMPLE VILLAGES

The sample villages are of two types-project villages (villages located within the micro watershed) and non-project villages (villages located outside the micro watershed). There are 5 project villages and 5 non-project villages selected from each of the 8 study blocks giving a sample of 40 project and 40 non-project villages. There are wide variations between the sample villages regarding their socio-economic features. Most of the sample villages are either Hilly (58%) or Forested (28%). The villages in Narla Blocks are in plain land. Because of the hilly location of the villages, most of the villages have natural efficient drainage system. The quantum of rainfall varies from heavy (40%) to moderate (37.5%) in over 3/4<sup>th</sup> of the villages. The Tribal settlements are usually located in clusters of households where the houses follow a linear pattern.

Over 3/4<sup>th</sup> of the sample villages are located at distance over 15 Km from the PHC/Block. Village size in terms of number of households differs. Over 90% of the villages both project and non-project have household more than 50. About half of the villages have households from 100 to 250. Only a small percentage (7.5%non-project - 17.5%project) of villages have households above 250. Size of the village community has a bearing on the watershed management, as it involves community participation. Active community participation and commitment is easier when the size of the community is small and homogeneous.

Both in the project and non-project villages, the SC and ST households together comprise 2/3<sup>rd</sup> of the total households. The average village size in terms of households of the project villages is arrived at 143 (ST-78, SC-16, OBC/OC-49) against 156 (ST-77, SC-29, OBC/OC-50) of the non-project villages. About 2/3<sup>rd</sup> of the project villages have SC/ST households above 75% compared to 52.5% of the non-project villages. There is little variation in the composition of villages in respect of occupational category. The landless constitute nearly 1/5<sup>th</sup> of the households both in the project and non-project villages. More than half of the households in both project and non-project villages taken together belong to MF category (having land less than 2.5 Acres). The Small Farmer constitutes a significant proportion both in the Project villages (24%) and Non-project



Villages (20%). The proportion of Big Farmers having land over 5 acres is insignificant in both the categories of villages.

Of the total population in the sample project villages, over 53% belong to ST against 48% in the non-project villages. Gond sahara bariha kandh paraja, etc are the major tribal groups in the region. The SC constitutes more than 12% of the population in the project villages compared to 18.5% in the non-project villages. An equal 34% of the population in both the category of villages belongs to OBC/OC category.

The average population size of the project villages is arrived at 669 compared to 707 for the non-project villages. The averages for ST and SC population are 318 and 123 for the project villages against 354 and 87 for the non-project villages. 15% of the project villages have population below 250 compared to 7.5% of the non-project villages. 65% of the project villages have population in the range 251 –1000 against 72% of the non-project villages. An equal 20% of the villages of both the category have population above 1000.

Agriculture (50%) is the major source of household income in the project villages followed by wage employment (39%), it being 39% and 49% for the non-project villages. A little more than 5% of households report allied agriculture (Forestry, Pisciculture, Animal husbandry etc.) and non-agriculture enterprise as the major source of household income. About 70% of sample villages are electrified. The villages in Thuamul Rampur block of Kalahandi district are yet to be electrified.

**Table No – 2.4.1: Distribution of Villages by Physiography**

| Name of Block  | Project Village |             |             |            |            | Non-Project Village |           |             |            |
|----------------|-----------------|-------------|-------------|------------|------------|---------------------|-----------|-------------|------------|
|                | Hilly           | Forest      | Plain       | Other      | Total      | Hilly               | Forest    | Plain       | Total      |
| Bandhugaon     | 5               |             |             |            | 5          | 5                   |           |             | 5          |
| Boden          | 3               | 1           |             | 1          | 5          | 5                   |           |             | 5          |
| Khaparakhhol   | 5               |             |             |            | 5          | 5                   |           |             | 5          |
| Komna          | 5               |             |             |            | 5          | 5                   |           |             | 5          |
| Laxmipur       |                 | 5           |             |            | 5          |                     | 5         |             | 5          |
| Narla          |                 |             | 5           |            | 5          |                     |           | 5           | 5          |
| Patnagarh      | 5               |             |             |            | 5          | 5                   |           |             | 5          |
| Thuamularampur |                 | 5           |             |            | 5          |                     | 5         |             | 5          |
| <b>Total</b>   | <b>23</b>       | <b>11</b>   | <b>5</b>    | <b>1</b>   | <b>40</b>  | <b>25</b>           | <b>10</b> | <b>5</b>    | <b>40</b>  |
| <b>%</b>       | <b>57.5</b>     | <b>27.5</b> | <b>12.5</b> | <b>2.5</b> | <b>100</b> | <b>62.5</b>         | <b>25</b> | <b>12.5</b> | <b>100</b> |

**Table No – 2.4.2: Distribution of Villages by Drainage**

| Name of Block  | Project Village   |          |            | Non-Project Village |            |            |
|----------------|-------------------|----------|------------|---------------------|------------|------------|
|                | Natural efficient | Marshy   | Total      | Natural efficient   | Marshy     | Total      |
| Bandhugaon     | 5                 |          | 5          | 5                   |            | 5          |
| Boden          | 4                 | 1        | 5          | 5                   |            | 5          |
| Khaparakhhol   | 5                 |          | 5          | 5                   |            | 5          |
| Komna          | 5                 |          | 5          | 5                   |            | 5          |
| Laxmipur       | 5                 |          | 5          | 5                   |            | 5          |
| Narla          | 4                 | 1        | 5          | 4                   | 1          | 5          |
| Patnagarh      | 5                 |          | 5          | 5                   |            | 5          |
| Thuamularampur | 5                 |          | 5          | 5                   |            | 5          |
| <b>Total</b>   | <b>38</b>         | <b>2</b> | <b>40</b>  | <b>39</b>           | <b>1</b>   | <b>40</b>  |
| <b>%</b>       | <b>95</b>         | <b>5</b> | <b>100</b> | <b>97.5</b>         | <b>2.5</b> | <b>100</b> |

**Table No – 2.4.3: Distribution of Villages by Rainfall**

| Name of Block  | Project Village |             |             |            | Non-Project Village |             |           |            |
|----------------|-----------------|-------------|-------------|------------|---------------------|-------------|-----------|------------|
|                | Heavy           | Moderate    | Scanty      | Total      | Heavy               | Moderate    | Scanty    | Total      |
| Bandhugaon     | 5               |             |             | 5          | 5                   |             |           | 5          |
| Boden          | 1               | 4           |             | 5          | 1                   | 4           |           | 5          |
| Khaparakhhol   |                 | 4           | 1           | 5          |                     | 2           | 3         | 5          |
| Komna          |                 | 1           | 4           | 5          |                     |             | 5         | 5          |
| Laxmipur       | 5               |             |             | 5          | 5                   |             |           | 5          |
| Narla          |                 | 3           | 2           | 5          |                     | 3           | 2         | 5          |
| Patnagarh      |                 | 3           | 2           | 5          |                     | 5           |           | 5          |
| Thuamularampur | 5               |             |             | 5          | 5                   |             |           | 5          |
| <b>Total</b>   | <b>16</b>       | <b>15</b>   | <b>9</b>    | <b>40</b>  | <b>16</b>           | <b>14</b>   | <b>10</b> | <b>40</b>  |
| <b>%</b>       | <b>40.0</b>     | <b>37.5</b> | <b>22.5</b> | <b>100</b> | <b>40.0</b>         | <b>35.0</b> | <b>25</b> | <b>100</b> |

**Table No – 2.4.4:Distribution of Villages by Settlement Pattern**

| Name of Block  | Project Village |           |            | Non-Project Village |            |           |            |
|----------------|-----------------|-----------|------------|---------------------|------------|-----------|------------|
|                | Linear          | Cluster   | Total      | Linear              | Circular   | Cluster   | Total      |
| Bandhugaon     | 5               |           | 5          | 5                   |            |           | 5          |
| Boden          | 1               | 4         | 5          | 2                   |            | 3         | 5          |
| Khaparakhhol   | 3               | 2         | 5          | 5                   |            |           | 5          |
| Komna          | 3               | 2         | 5          | 3                   |            | 2         | 5          |
| Laxmipur       | 3               | 2         | 5          | 1                   | 1          | 3         | 5          |
| Narla          |                 | 5         | 5          | 1                   |            | 4         | 5          |
| Patnagarh      | 3               | 2         | 5          | 2                   |            | 3         | 5          |
| Thuamularampur | 2               | 3         | 5          |                     |            | 5         | 5          |
| <b>Total</b>   | <b>20</b>       | <b>20</b> | <b>40</b>  | <b>19</b>           | <b>1</b>   | <b>20</b> | <b>40</b>  |
| <b>%</b>       | <b>50</b>       | <b>50</b> | <b>100</b> | <b>47.5</b>         | <b>2.5</b> | <b>50</b> | <b>100</b> |

**Table No – 2.4.5:Distribution of Villages by Facilities Within Village**

| Facilities            | Non-Project Village | %    | Project Village | %    | Total Villages |
|-----------------------|---------------------|------|-----------------|------|----------------|
| Primary School        | 28                  | 70.0 | 33              | 82.5 | 40             |
| ASHA                  | 12                  | 30.0 | 18              | 45.0 | 40             |
| Angan Wadi Centre     | 17                  | 42.5 | 21              | 52.5 | 40             |
| Gram Sathi/GRS(NREGS) | 7                   | 17.5 | 13              | 32.5 | 40             |
| Fair price shop (PDS) | 13                  | 32.5 | 24              | 60.0 | 40             |

**Table No – 2.4.6:Distribution of Villages by Distance to PHC**

| Type of Village     | Below 5 Km | 5-10 Km    | 11-15 Km    | 15-20       | 20-25       | Above 25    | Total      |
|---------------------|------------|------------|-------------|-------------|-------------|-------------|------------|
| Non-Project Village | 2          | 1          | 5           | 7           | 10          | 15          | 40         |
| <b>%</b>            | <b>5</b>   | <b>2.5</b> | <b>12.5</b> | <b>17.5</b> | <b>25</b>   | <b>37.5</b> | <b>100</b> |
| Project Village     | 1          | 4          | 5           | 9           | 7           | 14          | 40         |
| <b>%</b>            | <b>2.5</b> | <b>10</b>  | <b>12.5</b> | <b>22.5</b> | <b>17.5</b> | <b>35</b>   | <b>100</b> |

**Table No – 2.4.7:Distribution of Villages by Village Size of HHs**

| Name of the Block | Project Village |            |             |             |             |             | Non-Project Village |            |             |             |            |             |
|-------------------|-----------------|------------|-------------|-------------|-------------|-------------|---------------------|------------|-------------|-------------|------------|-------------|
|                   | >=25            | 26-50      | 50-100      | 100-250     | >250        | Total       | <=25                | 26-50      | 51-100      | 101-250     | >250       | Total       |
| Bandhugaon        | 0               | 1          | 1           | 3           | 0           | 5           | 0                   | 0          | 1           | 4           | 0          | 5           |
| Boden             | 0               | 0          | 0           | 3           | 2           | 5           | 1                   | 0          | 2           | 1           | 1          | 5           |
| Khaparakhhol      | 0               | 1          | 3           | 1           | 0           | 5           | 0                   | 0          | 0           | 4           | 1          | 5           |
| Komna             | 0               | 0          | 3           | 2           | 0           | 5           | 0                   | 1          | 0           | 4           | 0          | 5           |
| Laxmipur          | 0               | 0          | 1           | 4           | 0           | 5           | 1                   | 0          | 1           | 3           | 0          | 5           |
| Narla             | 0               | 0          | 1           | 3           | 1           | 5           | 0                   | 0          | 2           | 2           | 1          | 5           |
| Patnagarh         | 0               | 0          | 0           | 1           | 4           | 5           | 0                   | 0          | 2           | 3           | 0          | 5           |
| Thuamularampur    | 1               | 0          | 3           | 1           | 0           | 5           | 0                   | 0          | 4           | 1           | 0          | 5           |
| <b>Total</b>      | <b>1</b>        | <b>2</b>   | <b>12</b>   | <b>18</b>   | <b>7</b>    | <b>40</b>   | <b>2</b>            | <b>1</b>   | <b>12</b>   | <b>22</b>   | <b>3</b>   | <b>40</b>   |
| <b>%</b>          | <b>2.5</b>      | <b>5.0</b> | <b>30.0</b> | <b>45.0</b> | <b>17.5</b> | <b>100.</b> | <b>5.0</b>          | <b>2.5</b> | <b>30.0</b> | <b>55.0</b> | <b>7.5</b> | <b>100.</b> |

**Table No – 2.4.8:Distribution of Households by Caste**

| Name of the Blocks | Project Village |             |             |              | Non-Project Village |             |             |              |
|--------------------|-----------------|-------------|-------------|--------------|---------------------|-------------|-------------|--------------|
|                    | SC              | ST          | OBC/OC      | TOTAL        | SC                  | ST          | OBC/OC      | TOTAL        |
| Bandhugaon         | 31              | 684         | 56          | 771          | 34                  | 551         | 22          | 607          |
| Boden              | 42              | 188         | 668         | 898          | 229                 | 670         | 224         | 1123         |
| Khaparakhhol       | 125             | 563         | 442         | 1130         | 59                  | 157         | 165         | 381          |
| Komna              | 100             | 445         | 111         | 656          | 142                 | 339         | 82          | 563          |
| Laxmipur           | 23              | 445         | 0           | 468          | 88                  | 445         | 92          | 625          |
| Narla              | 201             | 162         | 426         | 789          | 362                 | 362         | 423         | 1147         |
| Patnagarh          | 80              | 251         | 241         | 572          | 192                 | 436         | 724         | 1352         |
| Thuamularampur     | 55              | 387         | 18          | 460          | 73                  | 116         | 252         | 441          |
| <b>Total</b>       | <b>657</b>      | <b>3125</b> | <b>1962</b> | <b>5744</b>  | <b>1179</b>         | <b>3076</b> | <b>1984</b> | <b>6239</b>  |
| <b>%</b>           | <b>11.4</b>     | <b>54.4</b> | <b>34.2</b> | <b>100.0</b> | <b>18.9</b>         | <b>49.3</b> | <b>31.8</b> | <b>100.0</b> |

**Table No – 2.4.9: Distribution of Village Size of HHs by Caste**

| Type of Village     | SC          | ST          | OBC/OC      | Total        |
|---------------------|-------------|-------------|-------------|--------------|
| Project Village     | 16          | 78          | 49          | 143          |
| %                   | <b>11.2</b> | <b>54.5</b> | <b>34.3</b> | <b>100.0</b> |
| Non-Project Village | 29          | 77          | 50          | 156          |
| %                   | <b>18.6</b> | <b>49.4</b> | <b>32.1</b> | <b>100.0</b> |

**Table No – 2.4.10: Distribution of Villages by SC/ST HHs as % to total HHs**

| Type of Village     | Below 60% | 60-75% | Above 75% | Total |
|---------------------|-----------|--------|-----------|-------|
| Project Village     | 11        | 3      | 26        | 40    |
| %                   | 27.5      | 7.5    | 65.0      | 100.0 |
| Non-Project Village | 13        | 6      | 21        | 40    |
| %                   | 32.5      | 15.0   | 52.5      | 100.0 |

**Table No – 2.4.11: Distribution of HHs by Occupational Category**

| Type of Village     | Landless    | MF          | SF          | BF         | RA         | Total        |
|---------------------|-------------|-------------|-------------|------------|------------|--------------|
| Non-Project Village | 1416        | 3279        | 1269        | 233        | 42         | 6239         |
| %                   | <b>22.7</b> | <b>52.6</b> | <b>20.3</b> | <b>3.7</b> | <b>0.7</b> | <b>100.0</b> |
| Project Village     | 1116        | 2980        | 1380        | 222        | 46         | 5744         |
| %                   | <b>19.4</b> | <b>51.9</b> | <b>24.0</b> | <b>3.9</b> | <b>0.8</b> | <b>100.0</b> |

**Table No – 2.4.12: Distribution of HHs by Occupational Category**

| Category     | Project Village |             |             |             | Non-Project Village |             |             |             |
|--------------|-----------------|-------------|-------------|-------------|---------------------|-------------|-------------|-------------|
|              | SC              | ST          | OBC/OC      | Total       | SC                  | ST          | OBC/OC      | Total       |
| LL           | 368             | 595         | 177         | 1140        | 674                 | 509         | 263         | 1446        |
| %            | 32.3            | 52.2        | 15.5        | 100.0       | 46.6                | 35.2        | 18.2        | 100.0       |
| MF           | 241             | 1735        | 965         | 2941        | 426                 | 1919        | 901         | 3246        |
| %            | 8.2             | 59.0        | 32.8        | 100.0       | 13.1                | 59.1        | 27.8        | 100.0       |
| SF           | 42              | 690         | 663         | 1395        | 74                  | 586         | 619         | 1279        |
| %            | 3.0             | 49.5        | 47.5        | 100.0       | 5.8                 | 45.8        | 48.4        | 100.0       |
| BF           | 6               | 85          | 131         | 222         | 5                   | 61          | 167         | 233         |
| %            | 2.7             | 38.3        | 59.0        | 100.0       | 2.1                 | 26.2        | 71.7        | 100.0       |
| RA           | 0               | 20          | 26          | 46          | 0                   | 1           | 34          | 35          |
| %            | 0.0             | 43.5        | 56.5        | 100.0       | 0.0                 | 2.9         | 97.1        | 100.0       |
| <b>Total</b> | <b>657</b>      | <b>3125</b> | <b>1962</b> | <b>5744</b> | <b>1179</b>         | <b>3076</b> | <b>1984</b> | <b>6239</b> |
| %            | 11.4            | 54.4        | 34.2        | 100.0       | 18.9                | 49.3        | 31.8        | 100.0       |

**Table No – 2.4.13: Distribution of Population by caste**

| Name of the Blocks | Non-Project Village |              |             |              | Project Village |              |             |              |
|--------------------|---------------------|--------------|-------------|--------------|-----------------|--------------|-------------|--------------|
|                    | SC                  | ST           | OBC/OC      | Total        | SC              | ST           | OBC/OC      | Total        |
| Bandhugaon         | 120                 | 1852         | 104         | 2076         | 152             | 3313         | 288         | <b>3753</b>  |
| Boden              | 1012                | 2739         | 950         | 4701         | 475             | 905          | 3393        | <b>4773</b>  |
| Khaparakhhol       | 280                 | 665          | 870         | 1815         | 811             | 2867         | 2197        | <b>5875</b>  |
| Komna              | 553                 | 1706         | 443         | 2702         | 541             | 2744         | 816         | <b>4101</b>  |
| Laxmipur           | 365                 | 1866         | 381         | 2612         | 104             | 1726         | 0           | <b>1830</b>  |
| Narla              | 1414                | 1569         | 1920        | 4903         | 785             | 555          | 1817        | <b>3157</b>  |
| Patnagarh          | 830                 | 1801         | 3315        | 5946         | 382             | 1110         | 1071        | <b>2563</b>  |
| Thuamularampur     | 363                 | 527          | 1097        | 1987         | 260             | 1881         | 88          | <b>2229</b>  |
| <b>Total</b>       | <b>4937</b>         | <b>12725</b> | <b>9080</b> | <b>26742</b> | <b>3510</b>     | <b>15101</b> | <b>9670</b> | <b>28281</b> |
| <b>%</b>           | <b>18.5</b>         | <b>47.6</b>  | <b>34.0</b> | <b>100.0</b> | <b>12.4</b>     | <b>53.4</b>  | <b>34.2</b> | <b>100.0</b> |

**Table No – 2.4.14: Distribution of Average population by Caste**

| Village type        | SC  | ST  | OBC/ OC | Total      |
|---------------------|-----|-----|---------|------------|
| Project Village     | 123 | 318 | 227     | 669        |
| Non-Project Village | 87  | 355 | 240     | <b>707</b> |

**Table No – 2.4.15: Distribution of Villages by population Range**

| Range        | Non-Project Village | %            | Project Village | %            | Total     |
|--------------|---------------------|--------------|-----------------|--------------|-----------|
| <100         | 0                   | 0.0          | 2               | 5.0          | 2         |
| 101-250      | 3                   | 7.5          | 4               | 10.0         | 7         |
| 251-500      | 13                  | 32.5         | 13              | 32.5         | 26        |
| 501-1000     | 16                  | 40.0         | 13              | 32.5         | 29        |
| >1000        | 8                   | 20.0         | 8               | 20.0         | 16        |
| <b>Total</b> | <b>40</b>           | <b>100.0</b> | <b>40</b>       | <b>100.0</b> | <b>80</b> |

**Table No – 2.4.16: Distribution of Household by BPL Status**

| Name of the Block | Non-Project Village |             |             |             | Project Village |             |             |             |
|-------------------|---------------------|-------------|-------------|-------------|-----------------|-------------|-------------|-------------|
|                   | SC                  | ST          | OBC/OC      | Total       | SC              | ST          | OBC/OC      | Total       |
| Bandhugaon        | 33                  | 197         | 0           | 230         | 31              | 416         | 11          | 458         |
| Boden             | 199                 | 335         | 168         | 702         | 95              | 169         | 577         | 841         |
| Khaparakhhol      | 59                  | 110         | 65          | 234         | 122             | 441         | 269         | 832         |
| Komna             | 132                 | 272         | 48          | 452         | 96              | 351         | 59          | 506         |
| Laxmipur          | 77                  | 420         | 52          | 549         | 6               | 272         | 0           | 278         |
| Narla             | 250                 | 300         | 205         | 755         | 169             | 101         | 262         | 532         |
| Patnagarh         | 175                 | 397         | 384         | 956         | 74              | 248         | 100         | 422         |
| Thuamularampur    | 70                  | 103         | 146         | 319         | 49              | 364         | 15          | 428         |
| <b>Total</b>      | <b>995</b>          | <b>2134</b> | <b>1068</b> | <b>4197</b> | <b>642</b>      | <b>2362</b> | <b>1293</b> | <b>4297</b> |
| <b>%</b>          | <b>84.4</b>         | <b>69.4</b> | <b>53.8</b> |             | <b>97.7</b>     | <b>75.6</b> | <b>65.9</b> |             |

**Table No – 2.4.17: Distribution of HHS by MSI**

| Caste group         | Agri        | Allied agri | Non-agri   | Wage        | Other      | Total        |
|---------------------|-------------|-------------|------------|-------------|------------|--------------|
| Project Village     |             |             |            |             |            |              |
| SC                  | 44          | 0           | 94         | 444         | 75         | 657          |
| ST                  | 1773        | 72          | 1          | 1233        | 46         | 3125         |
| OBC/OC              | 1080        | 63          | 156        | 561         | 102        | 1962         |
| Total               | 2897        | 135         | 251        | 2238        | 223        | 5744         |
| <b>%</b>            | <b>50.4</b> | <b>2.4</b>  | <b>4.4</b> | <b>39.0</b> | <b>3.9</b> | <b>100.0</b> |
| Non-Project Village |             |             |            |             |            |              |
| SC                  | 147         | 10          | 38         | 904         | 80         | 1179         |
| ST                  | 1456        | 59          | 25         | 1484        | 52         | 3076         |
| OBC/OC              | 839         | 118         | 100        | 667         | 260        | 1984         |
| Total               | 2442        | 187         | 163        | 3055        | 392        | 6239         |
| <b>%</b>            | <b>39.1</b> | <b>3.0</b>  | <b>2.6</b> | <b>49.0</b> | <b>6.3</b> | <b>100.0</b> |

**Table No – 2.4.18: Distribution of Villages by Electrification**

| Name of the Block | Non-Project Village |           |            | Project Village |             |            |
|-------------------|---------------------|-----------|------------|-----------------|-------------|------------|
|                   | Yes                 | No        | Total      | Yes             | No          | Total      |
| Bandhugaon        | 4                   | 1         | 5          | 5               |             | 5          |
| Boden             | 3                   | 2         | 5          | 2               | 3           | 5          |
| Khaparakhhol      | 4                   | 1         | 5          | 5               |             | 5          |
| Komna             | 4                   | 1         | 5          | 5               |             | 5          |
| Laxmipur          | 3                   | 2         | 5          | 3               | 2           | 5          |
| Narla             | 4                   | 1         | 5          | 5               |             | 5          |
| Patnagarh         | 5                   |           | 5          | 4               | 1           | 5          |
| Thuamularampur    | 1                   | 4         | 5          |                 | 5           | 5          |
| <b>Total</b>      | <b>28</b>           | <b>12</b> | <b>40</b>  | <b>29</b>       | <b>11</b>   | <b>40</b>  |
| <b>%</b>          | <b>70</b>           | <b>30</b> | <b>100</b> | <b>72.5</b>     | <b>27.5</b> | <b>100</b> |

## Demographic Profile of the Sample Villages (2001 Census)

| Sl. No   | Name of Block/Village | Total Population | Total SC | Total ST | Total Literates | Total Main Worker | Total Marginal Worker | No. of HH | Literacy Rate | Male Pop | Male SC | Male ST |
|----------|-----------------------|------------------|----------|----------|-----------------|-------------------|-----------------------|-----------|---------------|----------|---------|---------|
| <b>1</b> | <b>Boden</b>          |                  |          |          |                 |                   |                       |           |               |          |         |         |
| 1.       | Khirmal               | 1081             | 264      | 354      | 429             | 240               | 266                   | 263       | 47.3          | 567      | 141     | 184     |
| 2.       | Palenbasa             | 205              | 29       | 147      | 38              | 56                | 60                    | 48        | 20.5          | 101      | 13      | 72      |
| 3.       | Pitapani              | 38               | 0        | 38       | 0               | 13                | 15                    | 12        | 0             | 21       | 0       | 21      |
| 4.       | Redhamal              | 200              | 21       | 170      | 81              | 47                | 80                    | 53        | 46            | 96       | 10      | 80      |
| 5.       | Rundi                 | 1166             | 10       | 1086     | 244             | 271               | 313                   | 277       | 25.4          | 573      | 4       | 532     |
| 6.       | Damajhar              | 2357             | 287      | 0        | 785             | 561               | 628                   | 510       | 39.9          | 1102     | 130     | 0       |
| 7.       | Margaon               | 564              | 48       | 465      | 155             | 126               | 175                   | 126       | 32.4          | 287      | 21      | 235     |
| 8.       | Litisargi             | 1247             | 226      | 317      | 469             | 118               | 370                   | 344       | 45.3          | 630      | 115     | 155     |
| 9.       | Anlabhata             | 946              | 345      | 102      | 251             | 160               | 322                   | 260       | 31.6          | 476      | 179     | 51      |
| 10.      | Palasada              | 1962             | 68       | 411      | 563             | 491               | 326                   | 427       | 34.8          | 977      | 32      | 204     |
| <b>2</b> | <b>Komna</b>          |                  |          |          |                 |                   |                       |           |               |          |         |         |
| 11.      | Dedenga               | 284              | 15       | 226      | 109             | 63                | 97                    | 70        | 45.6          | 144      | 7       | 116     |
| 12.      | Sukulimundi           | 1129             | 75       | 956      | 313             | 193               | 350                   | 272       | 33.2          | 543      | 38      | 463     |
| 13.      | Thogapali             | 959              | 211      | 532      | 367             | 92                | 348                   | 211       | 46.3          | 481      | 104     | 272     |
| 14.      | Thutibar              | 735              | 199      | 475      | 248             | 216               | 229                   | 198       | 40.3          | 341      | 96      | 216     |
| 15.      | Larki                 | 391              | 65       | 21       | 159             | 77                | 133                   | 104       | 47.3          | 211      | 41      | 9       |
| 16.      | Gandamer              | 872              | 94       | 741      | 223             | 204               | 294                   | 217       | 29.7          | 425      | 50      | 356     |
| 17.      | Kandetara             | 2122             | 717      | 721      | 637             | 513               | 553                   | 541       | 35.6          | 1061     | 353     | 361     |
| <b>3</b> | <b>Narla</b>          |                  |          |          |                 |                   |                       |           |               |          |         |         |
| 18.      | Lamsinga              | 331              | 27       | 0        | 268             | 80                | 28                    | 87        | 92.7          | 177      | 15      | 0       |
| 19.      | Ghodabandha           | 1302             | 203      | 299      | 749             | 355               | 217                   | 342       | 65.9          | 670      | 113     | 148     |
| 20.      | Joda Bandha           | 406              | 209      | 80       | 236             | 86                | 104                   | 102       | 67            | 207      | 110     | 38      |
| 21.      | Brahmani              | 381              | 94       | 75       | 174             | 101               | 79                    | 108       | 57.8          | 201      | 47      | 42      |
| 22.      | Dhaunramal            | 372              | 180      | 57       | 176             | 94                | 99                    | 95        | 56.6          | 188      | 96      | 28      |
| 23.      | Bhanpur               | 2022             | 604      | 452      | 1082            | 610               | 165                   | 508       | 61.9          | 1023     | 290     | 228     |
| 24.      | Bafla                 | 513              | 166      | 21       | 264             | 129               | 131                   | 154       | 58            | 254      | 91      | 11      |
| 25.      | Kame Gaon             | 535              | 31       | 369      | 275             | 144               | 96                    | 122       | 61.1          | 265      | 11      | 188     |
| 26.      | Kurmel                | 633              | 303      | 291      | 252             | 229               | 89                    | 155       | 48.2          | 306      | 148     | 137     |
| 27.      | Kanagaon              | 244              | 17       | 32       | 88              | 77                | 81                    | 64        | 43.3          | 128      | 10      | 16      |
| <b>4</b> | <b>Th. Rampur</b>     |                  |          |          |                 |                   |                       |           |               |          |         |         |
| 28.      | Uparpermanji          | 239              | 61       | 158      | 40              | 38                | 105                   | 63        | 22.3          | 113      | 31      | 72      |
| 29.      | Kathaghara            | 412              | 36       | 335      | 106             | 128               | 81                    | 96        | 34.8          | 201      | 17      | 167     |
| 30.      | Gokloma               | 290              | 82       | 177      | 111             | 121               | 38                    | 75        | 46.3          | 139      | 38      | 88      |
| 31.      | Gunpur                | 663              | 155      | 70       | 275             | 114               | 196                   | 151       | 50.9          | 323      | 66      | 35      |
| 32.      | Panabhata             | 333              | 22       | 0        | 92              | 119               | 49                    | 79        | 35.1          | 167      | 11      | 0       |
| 33.      | Polingpadar           | 749              | 64       | 660      | 158             | 263               | 95                    | 171       | 28.7          | 366      | 33      | 322     |
| 34.      | Jubang                | 322              | 53       | 239      | 74              | 79                | 94                    | 74        | 29.6          | 153      | 25      | 113     |
| 35.      | Pastiguda             | 221              | 43       | 178      | 16              | 96                | 24                    | 52        | 9.6           | 104      | 24      | 80      |
| 36.      | Kaniguma              | 270              | 70       | 28       | 126             | 45                | 56                    | 83        | 58.1          | 128      | 32      | 14      |
| 37.      | Chaudaguda            | 33               | 0        | 0        | 22              | 9                 | 5                     | 8         | 71            | 18       | 0       | 0       |
| <b>5</b> | <b>Patnagarh</b>      |                  |          |          |                 |                   |                       |           |               |          |         |         |
| 38.      | Indpur                | 743              | 92       | 242      | 228             | 244               | 25                    | 174       | 36.1          | 370      | 41      | 117     |



|          |                   |      |     |      |     |     |     |     |      |      |     |     |
|----------|-------------------|------|-----|------|-----|-----|-----|-----|------|------|-----|-----|
| 39       | Khursel           | 413  | 21  | 121  | 246 | 89  | 23  | 98  | 68.5 | 207  | 9   | 66  |
| 40       | Debhui            | 605  | 60  | 156  | 292 | 164 | 88  | 154 | 56.9 | 300  | 31  | 77  |
| 41       | Phulmunda         | 293  | 50  | 130  | 91  | 98  | 4   | 71  | 38.2 | 157  | 25  | 68  |
| 42       | Khutanapani       | 882  | 146 | 497  | 526 | 276 | 59  | 217 | 67.3 | 428  | 74  | 234 |
| 43       | Chingerbandh      | 1099 | 108 | 288  | 473 | 388 | 25  | 284 | 50.6 | 552  | 55  | 151 |
| 44       | Gangasagar        | 1003 | 154 | 109  | 622 | 262 | 63  | 232 | 69.2 | 511  | 86  | 57  |
| 45       | Gadiajor          | 337  | 53  | 229  | 103 | 66  | 71  | 80  | 36.8 | 163  | 25  | 113 |
| 46       | Kendumundi        | 1155 | 129 | 306  | 490 | 265 | 152 | 295 | 48.5 | 578  | 64  | 151 |
| 47       | Guhiramunda       | 410  | 38  | 171  | 211 | 142 | 7   | 94  | 58.8 | 196  | 13  | 81  |
| <b>6</b> | <b>Khaprakhol</b> |      |     |      |     |     |     |     |      |      |     |     |
| 48       | Kuthurla          | 212  | 57  | 103  | 118 | 26  | 25  | 63  | 62.8 | 102  | 28  | 49  |
| 49       | Junanibahal       | 229  | 13  | 201  | 96  | 67  | 2   | 49  | 51.6 | 121  | 7   | 105 |
| 50       | Bartia            | 512  | 16  | 432  | 109 | 94  | 193 | 129 | 26   | 248  | 10  | 202 |
| 51       | Sunamudi          | 608  | 146 | 349  | 225 | 229 | 149 | 140 | 43.6 | 313  | 81  | 180 |
| 52       | patrapali         | 866  | 60  | 206  | 244 | 259 | 229 | 207 | 34.3 | 406  | 26  | 99  |
| 53       | Telenpali         | 840  | 78  | 568  | 279 | 261 | 119 | 224 | 38.1 | 422  | 39  | 290 |
| 54       | Karlamal          | 411  | 141 | 57   | 201 | 83  | 42  | 110 | 56.1 | 213  | 74  | 29  |
| 55       | Patrapali         | 388  | 38  | 0    | 166 | 251 | 14  | 101 | 48.3 | 183  | 17  | 0   |
| 56       | Karlabahali       | 267  | 8   | 11   | 69  | 83  | 2   | 74  | 29.4 | 128  | 3   | 5   |
| 57       | Chitikamal        | 173  | 31  | 39   | 82  | 47  | 11  | 49  | 57.7 | 82   | 14  | 17  |
| <b>7</b> | <b>Laxmipur</b>   |      |     |      |     |     |     |     |      |      |     |     |
| 58       | Birigura          | 1143 | 178 | 801  | 250 | 460 | 14  | 291 | 27.1 | 566  | 100 | 392 |
| 59       | Kenduarar         | 322  | 0   | 321  | 22  | 112 | 85  | 90  | 8.1  | 148  | 0   | 147 |
| 60       | Oriyapentha       | 56   | 0   | 56   | 0   | 37  | 7   | 13  | 0    | 25   | 0   | 25  |
| 61       | Talakuttinga      | 1252 | 184 | 1058 | 206 | 584 | 342 | 301 | 19.4 | 678  | 97  | 577 |
| 62       | Chilisanka        | 371  | 0   | 367  | 59  | 178 | 0   | 75  | 20   | 208  | 0   | 204 |
| 63       | Kojhankar         | 60   | 0   | 60   | 6   | 28  | 0   | 12  | 12.8 | 32   | 0   | 32  |
| 64       | Talakaipadar      | 514  | 0   | 514  | 1   | 154 | 149 | 121 | 0.2  | 242  | 0   | 242 |
| 65       | Kundar            | 2167 | 340 | 1431 | 408 | 346 | 850 | 585 | 23.4 | 1036 | 157 | 679 |
| 66       | Panchada          | 2727 | 526 | 1669 | 674 | 830 | 336 | 675 | 30.3 | 1414 | 270 | 869 |
| 67       | Dhamanganda       |      |     |      |     |     |     |     |      |      |     |     |
| <b>8</b> | <b>Bandhugaon</b> |      |     |      |     |     |     |     |      |      |     |     |
| 68       | Palaka            | 444  | 43  | 399  | 32  | 85  | 180 | 88  | 9.6  | 222  | 20  | 201 |
| 69       | Derka             | 217  | 5   | 207  | 10  | 44  | 93  | 46  | 5.8  | 104  | 1   | 101 |
| 70       | Bhatatambedi      | 197  | 0   | 65   | 51  | 51  | 72  | 43  | 31.3 | 98   | 0   | 37  |
| 71       | Leddingi          | 641  | 30  | 591  | 218 | 209 | 0   | 136 | 41.9 | 303  | 15  | 277 |
| 72       | Kuntesu           | 931  | 30  | 818  | 148 | 447 | 109 | 223 | 19.9 | 453  | 12  | 399 |
| 73       | Giringikhal       | 708  | 54  | 581  | 67  | 182 | 108 | 148 | 12.3 | 364  | 27  | 299 |
| 74       | Kupakhal          | 214  | 0   | 214  | 21  | 77  | 22  | 48  | 12.7 | 104  | 0   | 104 |
| 75       | Ramjiput          | 976  | 15  | 879  | 57  | 219 | 333 | 205 | 7.2  | 466  | 8   | 423 |
| 76       | Sanmathur         | 534  | 91  | 440  | 85  | 130 | 143 | 110 | 21.5 | 261  | 44  | 217 |
| 77       | Kanagan           | 829  | 36  | 726  | 119 | 380 | 106 | 164 | 17.3 | 396  | 16  | 347 |

| Name of Block/Village | Male Literates | Male Main Workers | Male Marginal Workers | Female Pop | Female SC | Female ST | 'Female Literates' | 'Female Main Workers' | 'Female Marginal Workers' |
|-----------------------|----------------|-------------------|-----------------------|------------|-----------|-----------|--------------------|-----------------------|---------------------------|
| <b>Boden</b>          |                |                   |                       |            |           |           |                    |                       |                           |
| Khirmal               | 338            | 236               | 88                    | 514        | 123       | 170       | 91                 | 4                     | 178                       |
| Palenbasa             | 33             | 55                | 8                     | 104        | 16        | 75        | 5                  | 1                     | 52                        |
| Pitapani              | 0              | 13                | 3                     | 17         | 0         | 17        | 0                  | 0                     | 12                        |
| Redhamal              | 51             | 40                | 24                    | 104        | 11        | 90        | 30                 | 7                     | 56                        |
| Rundi                 | 213            | 261               | 54                    | 593        | 6         | 554       | 31                 | 10                    | 259                       |
| Damajhar              | 555            | 429               | 174                   | 1255       | 157       | 0         | 230                | 132                   | 454                       |
| Margaon               | 123            | 117               | 39                    | 277        | 27        | 230       | 32                 | 9                     | 136                       |
| Litisargi             | 345            | 102               | 240                   | 617        | 111       | 162       | 124                | 16                    | 130                       |
| Anlabhata             | 188            | 153               | 109                   | 470        | 166       | 51        | 63                 | 7                     | 213                       |
| Palasada              | 432            | 414               | 103                   | 985        | 36        | 207       | 131                | 77                    | 223                       |
| <b>Komna</b>          |                |                   |                       |            |           |           |                    |                       |                           |
| Dedenga               | 82             | 63                | 17                    | 140        | 8         | 110       | 27                 | 0                     | 80                        |
| Sukulimundi           | 228            | 182               | 103                   | 586        | 37        | 493       | 85                 | 11                    | 247                       |
| Thogapali             | 241            | 83                | 155                   | 478        | 107       | 260       | 126                | 9                     | 193                       |
| Thutibar              | 191            | 174               | 36                    | 394        | 103       | 259       | 57                 | 42                    | 193                       |
| Larki                 | 109            | 77                | 43                    | 180        | 24        | 12        | 50                 | 0                     | 90                        |
| Gandamer              | 168            | 184               | 75                    | 447        | 44        | 385       | 55                 | 20                    | 219                       |
| Kandetara             | 441            | 453               | 136                   | 1061       | 364       | 360       | 196                | 60                    | 417                       |
| <b>Narla</b>          |                |                   |                       |            |           |           |                    |                       |                           |
| Lamsinga              | 150            | 79                | 27                    | 154        | 12        | 0         | 118                | 1                     | 1                         |
| Ghodabandha           | 472            | 328               | 59                    | 632        | 90        | 151       | 277                | 27                    | 158                       |
| Joda Bandha           | 150            | 85                | 41                    | 199        | 99        | 42        | 86                 | 1                     | 63                        |
| Brahmani              | 123            | 94                | 13                    | 180        | 47        | 33        | 51                 | 7                     | 66                        |
| Dhaunramal            | 111            | 89                | 13                    | 184        | 84        | 29        | 65                 | 5                     | 86                        |
| Bhanpur               | 674            | 544               | 58                    | 999        | 314       | 224       | 408                | 66                    | 107                       |
| Bafla                 | 175            | 127               | 12                    | 259        | 75        | 10        | 89                 | 2                     | 119                       |
| Kame Gaon             | 168            | 138               | 14                    | 270        | 20        | 181       | 107                | 6                     | 82                        |
| Kurmel                | 158            | 180               | 6                     | 327        | 155       | 154       | 94                 | 49                    | 83                        |
| Kanagaon              | 67             | 68                | 18                    | 116        | 7         | 16        | 21                 | 9                     | 63                        |
| <b>Th. Rampur</b>     |                |                   |                       |            |           |           |                    |                       |                           |
| Uparpermanji          | 36             | 24                | 48                    | 126        | 30        | 86        | 4                  | 14                    | 57                        |
| Kathaghara            | 81             | 86                | 19                    | 211        | 19        | 168       | 25                 | 42                    | 62                        |
| Gokloma               | 84             | 72                | 5                     | 151        | 44        | 89        | 27                 | 49                    | 33                        |
| Gunpur                | 205            | 97                | 83                    | 340        | 89        | 35        | 70                 | 17                    | 113                       |
| Panabhata             | 81             | 77                | 12                    | 166        | 11        | 0         | 11                 | 42                    | 37                        |
| Polingpadar           | 143            | 171               | 29                    | 383        | 31        | 338       | 15                 | 92                    | 66                        |
| Jubang                | 64             | 39                | 43                    | 169        | 28        | 126       | 10                 | 40                    | 51                        |
| Pastiguda             | 15             | 43                | 10                    | 117        | 19        | 98        | 1                  | 53                    | 14                        |
| Kaniguma              | 81             | 40                | 36                    | 142        | 38        | 14        | 45                 | 5                     | 20                        |
| Chaudaguda            | 15             | 9                 | 4                     | 15         | 0         | 0         | 7                  | 0                     | 1                         |
| <b>Patnagarh</b>      |                |                   |                       |            |           |           |                    |                       |                           |

|                   |     |     |     |      |     |     |     |     |     |
|-------------------|-----|-----|-----|------|-----|-----|-----|-----|-----|
| Indpur            | 164 | 229 | 24  | 373  | 51  | 125 | 64  | 15  | 1   |
| Khursel           | 151 | 87  | 23  | 206  | 12  | 55  | 95  | 2   | 0   |
| Debhuin           | 207 | 153 | 49  | 305  | 29  | 79  | 85  | 11  | 39  |
| Phulmunda         | 64  | 74  | 2   | 136  | 25  | 62  | 27  | 24  | 2   |
| Khutanapani       | 332 | 229 | 19  | 454  | 72  | 263 | 194 | 47  | 40  |
| Chingerbandh      | 303 | 305 | 11  | 547  | 53  | 137 | 170 | 83  | 14  |
| Gangasagar        | 390 | 226 | 37  | 492  | 68  | 52  | 232 | 36  | 26  |
| Gadiajor          | 74  | 62  | 30  | 174  | 28  | 116 | 29  | 4   | 41  |
| Kendumundi        | 324 | 226 | 93  | 577  | 65  | 155 | 166 | 39  | 59  |
| Guhiramunda       | 122 | 115 | 1   | 214  | 25  | 90  | 89  | 27  | 6   |
| <b>Khaprakhol</b> |     |     |     |      |     |     |     |     |     |
| Kuthurla          | 71  | 24  | 20  | 110  | 29  | 54  | 47  | 2   | 5   |
| Junanibahal       | 82  | 64  | 2   | 108  | 6   | 96  | 14  | 3   | 0   |
| Bartia            | 98  | 62  | 93  | 264  | 6   | 230 | 11  | 32  | 100 |
| Sunamudi          | 175 | 160 | 37  | 295  | 65  | 169 | 50  | 69  | 112 |
| patrapali         | 194 | 217 | 21  | 460  | 34  | 107 | 50  | 42  | 208 |
| Telenpali         | 206 | 232 | 25  | 418  | 39  | 278 | 73  | 29  | 94  |
| Karlamal          | 142 | 80  | 36  | 198  | 67  | 28  | 59  | 3   | 6   |
| Patrapali         | 109 | 123 | 6   | 205  | 21  | 0   | 57  | 128 | 8   |
| Karlabahali       | 49  | 68  | 1   | 139  | 5   | 6   | 20  | 15  | 1   |
| Chitikamal        | 49  | 44  | 7   | 91   | 17  | 22  | 33  | 3   | 4   |
| <b>Laxmipur</b>   |     |     |     |      |     |     |     |     |     |
| Birigura          | 212 | 295 | 10  | 577  | 78  | 409 | 38  | 165 | 4   |
| Kenduarar         | 14  | 78  | 18  | 174  | 0   | 174 | 8   | 34  | 67  |
| Oriyapentha       | 0   | 21  | 2   | 31   | 0   | 31  | 0   | 16  | 5   |
| Talakuttinga      | 152 | 354 | 132 | 574  | 87  | 481 | 54  | 230 | 210 |
| Chilisanka        | 57  | 93  | 0   | 163  | 0   | 163 | 2   | 85  | 0   |
| Koijhankar        | 5   | 14  | 0   | 28   | 0   | 28  | 1   | 14  | 0   |
| Talakaipadar      | 0   | 153 | 7   | 272  | 0   | 272 | 1   | 1   | 142 |
| Kundar            | 326 | 305 | 299 | 1131 | 183 | 752 | 82  | 41  | 551 |
| Panchada          | 530 | 646 | 80  | 1313 | 256 | 800 | 144 | 184 | 256 |
| Dhamanganda       |     |     |     |      |     |     |     |     |     |
| <b>Bandhugaon</b> |     |     |     |      |     |     |     |     |     |
| Palaka            | 29  | 81  | 45  | 222  | 23  | 198 | 3   | 4   | 135 |
| Derka             | 5   | 43  | 20  | 113  | 4   | 106 | 5   | 1   | 73  |
| Bhatatambedi      | 34  | 51  | 7   | 99   | 0   | 28  | 17  | 0   | 65  |
| Leddingi          | 164 | 155 | 0   | 338  | 15  | 314 | 54  | 54  | 0   |
| Kuntesu           | 105 | 258 | 18  | 478  | 18  | 419 | 43  | 189 | 91  |
| Giringikhal       | 47  | 169 | 48  | 344  | 27  | 282 | 20  | 13  | 60  |
| Kupakhal          | 11  | 41  | 12  | 110  | 0   | 110 | 10  | 36  | 10  |
| Ramjiput          | 47  | 201 | 68  | 510  | 7   | 456 | 10  | 18  | 265 |
| Sanmathur         | 73  | 122 | 13  | 273  | 47  | 223 | 12  | 8   | 130 |
| Kanagan           | 87  | 204 | 19  | 433  | 20  | 379 | 32  | 176 | 87  |

## 2.5 PROFILE OF THE SAMPLE HOUSEHOLDS

There are 400 sample households selected from the 40 project villages and another 400 sample households selected from the 40 non-project villages. The former can be termed as Beneficiary Households and the latter as Control Households.

Nuclear family is the general order irrespective of caste affiliation. The average family size is arrived at 4.8. About 1/4<sup>th</sup> of the households have a family size at/below three members. 2/3<sup>rd</sup> of the households have members from 4 to 6. A small 17% of the households report family size at/above seven members. The households of the project and the non-project villages follow a similar composition.

Farming (48%) is the major source of household income followed wage labour (44%) as observed in the project villages. To the contrary wage labour (56%) is the predominant source of household income followed by farming (38%) in the non-project villages. Farming in the project villages has received a boost in the wake up land, water and agriculture development under the projects. However wage labour is the major source of household income for the SC both in project and non-project villages.

About 30% of the households in the project villages are landless against 42% in the non-project villages. The highest proportion among the landless are the SCs in both the category of villages. Among the households in the project villages the highest 48% belong to Marginal Farmers category (having land below 2.5 Acres) compared to 39% in the non-project villages. The proportions of SF and BF in the project villages are 14% and 7% against 12% and 6% respectively in the non-project villages.

Keeping in line with the occupational category, half of the households in the project villages report having land below 2.5 Acres. Over 16% of the households have land from 2.5 to 5 Acres. Households owning land above 5 Acres is arrived at 4% in the project villages. The striking difference between the project and non-project villages in the land holding pattern is the predominance of landless households in the non-project villages.

Of the landed 281 households in the project villages as many as 54 (19%) households have irrigated land mostly below one acre. Like wise 35 (15%) out of 229 landed households in the non-project villages own irrigated land mostly below one acre. Among the non-irrigated landed households, over 54% have land below one acre followed by 34% and 10% having land within 1-2.5 acres and 2.5-5.0 acres in the project villages. The figures for the non-project villages are 53%, 23% and 17% respectively. The average land holding size for the project village is arrived at 2.4 acres against 2.6 acres for the non-project villages. The land holding size however varies across social groups. The OBC and OCs are observed to have higher land holding size than the SC and ST households.

64 households in the project villages and 66 household in non-project villages are found practicing shifting cultivation, all most all of them being STs belonging to Laxmipur and Bandhugaon blocks of Koraput district. The shifting cultivation widely practiced in all the 5 project villages of Thuamularampur block of Kalahandi has been completely stopped since 2005 because of the PIA intervention. In contrast, the non-project villages in the same block are seen practicing the age-old cultivation method of slash and burn.

The sex ratio (female per 1000 male) for the project village is arrived at 1038, which is higher than the ratio of 1007 for the non-project village. Irrespective of village status the SC and ST are found to have a higher sex ratio than the OBC and OC.

Over 2/3<sup>rd</sup> of the persons both in project and non-project villages are found illiterate. A little over 1/5<sup>th</sup> of the population in both category of villages are just literates. Persons having education up to primary level comprise 5%. A small 6% of the population have education up to middle school level and above. The pattern is almost analogous between the project and non-project villages.

Over 85% of the households both in the project and non-project villages belong to BPL category.

**Table No – 2.5.1: Distribution of HHs by Type Of Family**

| Type of Village     | Caste | Nuclear     | Extended   | Total        |
|---------------------|-------|-------------|------------|--------------|
| Project Village     | SC    | 90          | 1          | 91           |
|                     | ST    | 244         | 3          | 247          |
|                     | OBC   | 57          | 1          | 58           |
|                     | OC    | 3           | 1          | 4            |
| <b>Total</b>        |       | <b>394</b>  | <b>6</b>   | <b>400</b>   |
| <b>%</b>            |       | <b>98.5</b> | <b>1.5</b> | <b>100</b>   |
| Non-Project Village | SC    | 104         | 1          | 105          |
|                     | ST    | 233         | 2          | 235          |
|                     | OBC   | 57          | 0          | 57           |
|                     | OC    | 3           | 0          | 3            |
| <b>2 Total</b>      |       | <b>397</b>  | <b>3</b>   | <b>400</b>   |
| <b>%</b>            |       | <b>99.3</b> | <b>0.8</b> | <b>100.0</b> |

**Table No – 2.5.2: Distribution of HHs by Family Size**

| Type of Village     | Caste | <=3          | 4 – 6       | 7 & Above    | Total        |
|---------------------|-------|--------------|-------------|--------------|--------------|
| Project Village     | SC    | 17           | 62          | 12           | 91           |
|                     | ST    | 63           | 140         | 44           | 247          |
|                     | OBC   | 12           | 38          | 8            | 58           |
|                     | OC    | 0            | 1           | 3            | 4            |
| <b>Total</b>        |       | <b>92</b>    | <b>241</b>  | <b>67</b>    | <b>400</b>   |
| <b>%</b>            |       | <b>23.0</b>  | <b>60.3</b> | <b>16.8</b>  | <b>100.0</b> |
| Non-Project Village | SC    | 24           | 63          | 18           | 105          |
|                     | ST    | 66           | 132         | 37           | 235          |
|                     | OBC   | 11           | 36          | 10           | 57           |
|                     | OC    | 0            | 3           | 0            | 3            |
| <b>2 Total</b>      |       | <b>101</b>   | <b>234</b>  | <b>65</b>    | <b>400</b>   |
| <b>%</b>            |       | <b>25.25</b> | <b>58.5</b> | <b>16.25</b> | <b>100</b>   |

**Table No – 2.5.3: Distribution of HHs by MSI**

| Type of Village | Caste | Farm        | Non-Farm   | Wage Labour | Other      | Total        |
|-----------------|-------|-------------|------------|-------------|------------|--------------|
| Project Village | SC    | 37          | 6          | 44          | 4          | 91           |
|                 | ST    | 122         | 8          | 114         | 3          | 247          |
|                 | OBC   | 32          | 5          | 16          | 5          | 58           |
|                 | OC    | 1           | 1          | 1           | 1          | 4            |
| <b>Total</b>    |       | <b>192</b>  | <b>20</b>  | <b>175</b>  | <b>13</b>  | <b>400</b>   |
| <b>%</b>        |       | <b>48.0</b> | <b>5.0</b> | <b>43.8</b> | <b>3.3</b> | <b>100.0</b> |

|                     |     |              |            |              |          |            |
|---------------------|-----|--------------|------------|--------------|----------|------------|
| Non-Project Village | SC  | 21           | 4          | 78           | 2        | 105        |
|                     | ST  | 97           | 6          | 129          | 3        | 235        |
|                     | OBC | 33           | 4          | 18           | 2        | 57         |
|                     | OC  | 2            |            |              | 1        | 3          |
| <b>2 Total</b>      |     | <b>153</b>   | <b>14</b>  | <b>225</b>   | <b>8</b> | <b>400</b> |
| <b>%</b>            |     | <b>38.25</b> | <b>3.5</b> | <b>56.25</b> | <b>2</b> | <b>100</b> |

**Table No – 2.5.4: Distribution of HHs by Occupation Category**

| Type of Village     | Caste | LL          | MF          | SF          | BF         | RA         | Total        |
|---------------------|-------|-------------|-------------|-------------|------------|------------|--------------|
| Project Village     | SC    | 42          | 33          | 13          | 3          |            | 91           |
|                     | ST    | 61          | 130         | 34          | 19         | 3          | 247          |
|                     | OBC   | 16          | 26          | 8           | 6          | 2          | 58           |
|                     | OC    |             | 2           | 1           | 1          |            | 4            |
| <b>Total</b>        |       | <b>119</b>  | <b>191</b>  | <b>56</b>   | <b>29</b>  | <b>5</b>   | <b>400</b>   |
| <b>%</b>            |       | <b>29.8</b> | <b>47.8</b> | <b>14.0</b> | <b>7.3</b> | <b>1.3</b> | <b>100.0</b> |
| Non-Project Village | SC    | 65          | 32          | 7           | 1          |            | 105          |
|                     | ST    | 86          | 109         | 29          | 10         | 1          | 235          |
|                     | OBC   | 18          | 15          | 12          | 11         | 1          | 57           |
|                     | OC    |             |             | 1           | 2          |            | 3            |
| <b>2 Total</b>      |       | <b>169</b>  | <b>156</b>  | <b>49</b>   | <b>24</b>  | <b>2</b>   | <b>400</b>   |
| <b>%</b>            |       | <b>42.3</b> | <b>39.0</b> | <b>12.3</b> | <b>6.0</b> | <b>0.5</b> | <b>100.0</b> |

**Table No – 2.5.5: Distribution of HHs by BPL Status**

| Type of Village     | Caste | BPL         | APL         | Total        |
|---------------------|-------|-------------|-------------|--------------|
| Project Village     | SC    | 74          | 17          | 91           |
|                     | ST    | 223         | 24          | 247          |
|                     | OBC   | 45          | 13          | 58           |
|                     | OC    | 3           | 1           | 4            |
| <b>Total</b>        |       | <b>345</b>  | <b>55</b>   | <b>400</b>   |
| <b>%</b>            |       | <b>86.3</b> | <b>13.8</b> | <b>100.0</b> |
| Non-Project Village | SC    | 95          | 10          | 105          |
|                     | ST    | 209         | 26          | 235          |
|                     | OBC   | 37          | 20          | 57           |
|                     | OC    | 1           | 2           | 3            |
| <b>2 Total</b>      |       | <b>342</b>  | <b>58</b>   | <b>400</b>   |
| <b>%</b>            |       | <b>85.5</b> | <b>14.5</b> | <b>100.0</b> |

**Table No – 2.5.6: Distribution of HHs by Land Owned (Excludes Homestead Land)**

| Type of Village     | Caste | Landless    | 0-1         | 1-2.5       | 2.5-5       | Above 5    | Total        |
|---------------------|-------|-------------|-------------|-------------|-------------|------------|--------------|
| Project Village     | SC    | 41          | 16          | 18          | 15          | 1          | 91           |
|                     | ST    | 63          | 43          | 90          | 39          | 12         | 247          |
|                     | OBC   | 15          | 10          | 19          | 11          | 3          | 58           |
|                     | OC    | 0           | 0           | 2           | 1           | 1          | 4            |
| <b>Total</b>        |       | <b>119</b>  | <b>69</b>   | <b>129</b>  | <b>66</b>   | <b>17</b>  | <b>400</b>   |
| <b>%</b>            |       | <b>29.8</b> | <b>17.3</b> | <b>32.3</b> | <b>16.5</b> | <b>4.3</b> | <b>100.0</b> |
| Non-Project Village | SC    | 65          | 14          | 18          | 7           | 1          | 105          |
|                     | ST    | 87          | 44          | 64          | 35          | 5          | 235          |
|                     | OBC   | 19          | 6           | 9           | 15          | 8          | 57           |
|                     | OC    | 0           | 0           | 0           | 1           | 2          | 3            |
| <b>2 Total</b>      |       | <b>171</b>  | <b>64</b>   | <b>91</b>   | <b>58</b>   | <b>16</b>  | <b>400</b>   |
| <b>%</b>            |       | <b>42.8</b> | <b>16.0</b> | <b>22.8</b> | <b>14.5</b> | <b>4.0</b> | <b>100.0</b> |

**Table No – 2.5.7: Distribution of HHs by Land Irrigated**

| Type of Village     | Caste | <=1         | 1 -2.5      | 2.5 & Above | Total        |
|---------------------|-------|-------------|-------------|-------------|--------------|
| Project Village     | SC    | 6           | 2           | 0           | 8            |
|                     | ST    | 22          | 9           | 4           | 35           |
|                     | OBC   | 4           | 5           | 0           | 9            |
|                     | OC    | 2           | 0           | 0           | 2            |
| <b>Total</b>        |       | <b>34</b>   | <b>16</b>   | <b>4</b>    | <b>54</b>    |
| <b>%</b>            |       | <b>63.0</b> | <b>29.6</b> | <b>7.4</b>  | <b>100.0</b> |
| Non-Project Village | SC    | 9           | 0           | 0           | 9            |
|                     | ST    | 11          | 4           | 1           | 16           |
|                     | OBC   | 1           | 5           | 2           | 8            |
|                     | OC    | 0           | 1           | 1           | 2            |
| <b>2 Total</b>      |       | <b>21</b>   | <b>10</b>   | <b>4</b>    | <b>35</b>    |
| <b>%</b>            |       | <b>60.0</b> | <b>28.6</b> | <b>11.4</b> | <b>100.0</b> |

**Table No – 2.5.8: Distribution of HHs by Land Non-irrigated**

| Type of Village     | Caste | <=1         | 1-2.5       | 2.5-5       | Above 5    | Total        |
|---------------------|-------|-------------|-------------|-------------|------------|--------------|
| Project Village     | SC    | 38          | 23          | 5           | 0          | 66           |
|                     | ST    | 136         | 83          | 25          | 4          | 248          |
|                     | OBC   | 22          | 18          | 6           | 4          | 50           |
|                     | OC    | 5           | 1           | 1           | 0          | 7            |
| <b>Total</b>        |       | <b>201</b>  | <b>125</b>  | <b>37</b>   | <b>8</b>   | <b>371</b>   |
| <b>%</b>            |       | <b>54.2</b> | <b>33.7</b> | <b>10.0</b> | <b>2.2</b> | <b>100.0</b> |
| Non-Project Village | SC    | 25          | 16          | 6           | 0          | 47           |



|                |     |             |             |             |            |              |
|----------------|-----|-------------|-------------|-------------|------------|--------------|
|                | ST  | 106         | 51          | 27          | 4          | 188          |
|                | OBC | 20          | 11          | 14          | 5          | 50           |
|                | OC  | 1           | 1           | 2           | 0          | 4            |
| <b>2 Total</b> |     | <b>152</b>  | <b>79</b>   | <b>49</b>   | <b>9</b>   | <b>289</b>   |
| <b>%</b>       |     | <b>52.6</b> | <b>27.3</b> | <b>17.0</b> | <b>3.1</b> | <b>100.0</b> |

**Table No – 2.5.9: Distribution of Average Land holding size by Caste**

| Type of Village       | Caste | Average Land Holding Size |
|-----------------------|-------|---------------------------|
| Project Village       | SC    | 2.1                       |
|                       | ST    | 2.4                       |
|                       | OBC   | 2.8                       |
|                       | OC    | 3.5                       |
| <b>Total</b>          |       | <b>2.4</b>                |
| % Non-Project Village | SC    | 2.3                       |
|                       | ST    | 1.9                       |
|                       | OBC   | 4                         |
|                       | OC    | 7.3                       |
| <b>Total</b>          |       | <b>2.6</b>                |

**Table No – 2.5.10: Distribution of HHs by Land Under Shifting Cultivation**

| Type of Village     | Caste | 1          | 1.5        | 2           | 2.5         | Total        |
|---------------------|-------|------------|------------|-------------|-------------|--------------|
| Project Village     | SC    | 0          | 1          | 0           | 0           | 1            |
|                     | ST    | 2          | 4          | 44          | 13          | 63           |
|                     | OBC   | 0          | 0          | 0           | 0           | 0            |
|                     | OC    | 0          | 0          | 0           | 0           | 0            |
| <b>Total</b>        |       | <b>2</b>   | <b>5</b>   | <b>44</b>   | <b>13</b>   | <b>64</b>    |
| <b>%</b>            |       | <b>3.1</b> | <b>7.8</b> | <b>68.8</b> | <b>20.3</b> | <b>100.0</b> |
| Non-Project Village | SC    | 0          | 0          | 0           | 0           | 0            |
|                     | ST    | 0          | 1          | 30          | 35          | 66           |
|                     | OBC   | 0          | 0          | 0           | 0           | 0            |
|                     | OC    | 0          | 0          | 0           | 0           | 0            |
| <b>2 Total</b>      |       | <b>0</b>   | <b>1</b>   | <b>30</b>   | <b>35</b>   | <b>66</b>    |
| <b>%</b>            |       | <b>0.0</b> | <b>1.5</b> | <b>45.5</b> | <b>53.0</b> | <b>100.0</b> |

**Table No – 2.5.11: Distribution of HHs Members by Sex**

| Type of Village     | Caste | Male        | Female      | Total        | Female per 1000 Male |
|---------------------|-------|-------------|-------------|--------------|----------------------|
| Project Village     | SC    | 218         | 230         | 448          | 1055                 |
|                     | ST    | 585         | 617         | 1202         | 1054                 |
|                     | OBC   | 145         | 140         | 285          | 965                  |
|                     | OC    | 15          | 13          | 28           | 866                  |
| <b>Total</b>        |       | <b>963</b>  | <b>1000</b> | <b>1963</b>  | <b>1038</b>          |
| <b>%</b>            |       | <b>49.1</b> | <b>50.9</b> | <b>100.0</b> | <b>965</b>           |
| Non-Project Village | SC    | 257         | 265         | 522          | 1031                 |
|                     | ST    | 532         | 547         | 1079         | 1028                 |
|                     | OBC   | 146         | 132         | 278          | 904                  |
|                     | OC    | 9           | 7           | 16           | 777                  |
| <b>2 Total</b>      |       | <b>944</b>  | <b>951</b>  | <b>1895</b>  | <b>1007</b>          |
| <b>%</b>            |       | <b>49.8</b> | <b>50.2</b> | <b>100.0</b> | <b>992</b>           |

**Table No – 2.5.12: Distribution of HH Members by Age**

| Type of Village     | Caste | Below 5     | 5-14        | 15-29       | 30-49       | 49-64       | Above 65   | Total        |
|---------------------|-------|-------------|-------------|-------------|-------------|-------------|------------|--------------|
| Project Village     | SC    | 53          | 110         | 125         | 98          | 42          | 20         | 448          |
|                     | ST    | 138         | 285         | 326         | 288         | 118         | 47         | 1202         |
|                     | OBC   | 32          | 68          | 76          | 70          | 30          | 9          | 285          |
|                     | OC    | 3           | 6           | 8           | 6           | 3           | 2          | 28           |
| <b>Total</b>        |       | <b>226</b>  | <b>460</b>  | <b>521</b>  | <b>443</b>  | <b>178</b>  | <b>78</b>  | <b>1963</b>  |
| <b>%</b>            |       | <b>11.5</b> | <b>23.4</b> | <b>26.5</b> | <b>22.6</b> | <b>9.1</b>  | <b>4.0</b> | <b>100.0</b> |
| Non-Project Village | SC    | 57          | 127         | 148         | 122         | 50          | 18         | 522          |
|                     | ST    | 118         | 255         | 298         | 252         | 112         | 44         | 1079         |
|                     | OBC   | 30          | 66          | 78          | 65          | 32          | 7          | 278          |
|                     | OC    | 2           | 3           | 5           | 3           | 2           | 1          | 16           |
| <b>2 Total</b>      |       | <b>207</b>  | <b>451</b>  | <b>529</b>  | <b>442</b>  | <b>196</b>  | <b>70</b>  | <b>1895</b>  |
| <b>%</b>            |       | <b>10.9</b> | <b>23.8</b> | <b>27.9</b> | <b>23.3</b> | <b>10.3</b> | <b>3.7</b> | <b>100.0</b> |

## **CHAPTER- III**

### **PROJECT PERFORMANCE**

#### **3.1 PROFILE OF THE SAMPLE MICRO WATERSHEDS**

The 40 sample project villages belong to 28 micro watersheds spread over eight blocks in four districts of Orissa. Of these, 18 micro watersheds are being implemented under WORLP in seven blocks of three districts namely Bolangir, Kalahandi and Nuapada , The remaining ten are being implemented in one block of Kalahandi and two blocks of Koraput district under OTELP.

Out of the 18 WORLP watersheds, as many as eight have started during 2004-05 followed by four in 2001-02, three in 2003-04, two in 2002-03 and one in 2000-01. However, all the ten OTELP watersheds have started during 2004-05.

15 out of 28 watersheds cover two villages each. Three villages are covered by as many as seven watersheds. There are six watersheds that cover one village only. On an average, each micro watershed is found to cover two villages on an average.

The highest 8 watersheds cover population below 500 each followed by 7 covering population from 500 to 1000. As many as 6 watersheds cover population more than 2000 each. The rest 7 watersheds target population between 1000 and 2000 each.

The average no. of women SHGs per micro watershed in WORLP is arrived 15 against 13 in OTELP . The corresponding figures for male SHGs are 3 and 5.

**PROFILE OF SAMPLE MICRO WATERSHEDS IN PATNAGARH BLOCK OF  
BOLANGIR DISTRICT OF ORISSA**

| <b>Sl. No.</b>                               | <b>Name of the Watershed</b>                | <b>Jagabalia</b>   | <b>Jay Maa Bastrain</b> | <b>Patneswari Maa</b> |
|--|---|--------------------|-------------------------|-----------------------|
| 1  | Year of Start                               | 2001-02            | 2003-04                 | 2001-02               |
| 2  | Year of Completion                          | 2005-06            | 2007-08                 | 2005-06               |
| 3  | Name of the District                        | Bolangir           | Bolangir                | Bolangir              |
| 4  | Name of the Block                           | Patnagarh          | Patnagarh               | Patnagarh             |
| 5  | Gram Panchayat                              | Patnagarh Larambha | Gangasagar, Kendumundi  | Maruan, Baneimunda    |
| 6  | Total amount of fund in Rs(Lakh)            | 49.495             | 46.455                  | 50.445                |
| 7  | Total watershed fund in Rs.(lakhs)          | 31.260             | 29.340                  | 31.860                |
| 8  | Total watershed plus fund in Rupees (lakhs) | 18.235             | 17.115                  | 18.585                |
| 9  | Revenue village                             | Debhuin, Kharsel   | Gohiramunda, Gadiajore  | Pandripani, Fulmunda  |
| 10   | PIA   | JSCO, Patnagarh    | JSCO, Patnagarh         | JSCO, Patnagarh       |
| <b>Geographical details of the watershed</b> |   |                    |                         |                       |
| 11   | Total no. of Village                        | 2                  | 2                       | 2                     |
| 12   | Village name                                | Debhuin, Kharsel   | Gohiramunda, Gadiajore  | Pandripani, Fulmunda  |
| 13   | Total geographical area in ha.              | 609.05             | 634.95                  | 625.24                |
| 14   | Total Wasteland in ha                       | 51.07              | 81.99                   | 36.96                 |
| 15   | Total cultivable wasteland in ha            | 33.48              | 64.43                   | 24.57                 |
| 16   | Total uncultivable wasteland in ha          | 17.59              | 17.56                   | 12.39                 |
| 17   | Total gochar/pasture land in ha             | 43.57              | 88.02                   | 72.72                 |
| 18   | Total arable land in ha                     | 457.07             | 235.41                  | 387.12                |
| 19   | Total non arable land in ha                 | 95.92              | 314.59                  | 176.88                |
|  | <b>Total agricultural land</b>              |                    |                         |                       |
| 20   | Total                                       | 420.54             | 235.41                  | 325.43                |
| 21   | Upland                                      | 264.26             | 126.63                  | 207.49                |
| 22   | Medium land                                 | 89.12              | 37.74                   | 53.76                 |
| 23   | Low land                                    | 67.16              | 72.04                   | 64.18                 |
| 24   | Total irrigated agricultural land (ha)      | 68                 | 18                      | 52                    |
| 25   | Total reserve forest in ha                  | 0                  | 0                       | 0                     |
| 26   | Total revenue/ Village forest in ha         | 45.75              | 205.07                  | 69.24                 |
| <b>Demographic details of the watersheds</b> |   |                    |                         |                       |
| 27   | Total Population                            | 1233               | 1064                    | 742                   |
| 28   | Men   | 624                | 530                     | 381                   |
| 29   | Women                                       | 609                | 534                     | 361                   |

|    |   |                 |                    |                    |
|----|---|-----------------|--------------------|--------------------|
|    | <b>Social Class</b>   |                 |                    |                    |
| 30 | SC  | 140             | 217                | 108                |
| 31 | ST  | 375             | 551                | 362                |
| 32 | OBC   | 705             | 296                | 252                |
| 33 | Gen   | 13              | 0                  | 20                 |
| 34 | Total number of households  | 306             | 222                | 168                |
|    | <b>Economic class of House Hold</b>                                 |                 |                    |                    |
| 35 | Well off  | 25              | 18                 | 19                 |
| 36 | Manageable  | 158             | 103                | 64                 |
| 37 | Poor  | 113             | 40                 | 79                 |
| 38 | Very poor   | 10              | 61                 | 6                  |
|    | <b>Category of Farmer</b>   |                 |                    |                    |
| 39 | Landless  | 61              | 91                 | 41                 |
| 40 | Marginal  | 229             | 70                 | 105                |
| 41 | Small   | 11              | 43                 | 12                 |
| 42 | Medium  | 0               | 0                  | 0                  |
| 43 | Big   | 5               | 18                 | 10                 |
|    | <b>SHGs Details</b>   |                 |                    |                    |
| 44 | Total SHGs adopted by WORLP   | 7               | 10                 | 2                  |
| 45 | Total SHGs promoted by WORLP  | 11              | 10                 | 11                 |
| 46 | Total number of SHGs in WORLP                                       | 18              | 20                 | 13                 |
| 47 | Banks in which all the SHGs of the watershed have opened their Acc. | BAG,<br>Ghasien | BAGB,<br>Patnagarh | BAGB,<br>Patnagarh |
|    | <b>Men SHGs</b>   |                 |                    |                    |
| 48 | Total number of Men SHG   | 9               | 5                  | 4                  |
| 49 | Total Male members  | 130             | 56                 | 76                 |
| 50 | SC  | 7               | 7                  | 13                 |
| 51 | ST  | 37              | 28                 | 44                 |
| 52 | OBC   | 85              | 21                 | 19                 |
| 53 | Gen   | 1               | 0                  | 0                  |
| 54 | Total Saving (lakhs)  | 52400           | 11100              | 32,200             |
|    | <b>Women SHGs</b>   |                 |                    |                    |
| 55 | Total number of Women SHG   | 9               | 15                 | 9                  |
| 56 | Total Female members  |                 |                    |                    |
| 57 | Total   | 108             | 123                | 122                |
| 58 | SC  | 7               | 20                 | 17                 |
| 59 | ST  | 25              | 60                 | 66                 |
| 60 | OBC   | 75              | 43                 | 39                 |
| 61 | Gen   | 1               | 0                  | 0                  |
| 62 | Total Saving (lakhs)  | 52120           | 37400              | 136450             |

**PROFILE OF SAMPLE MICRO WATERSHEDS IN KHAPRAKHOL BLOCK OF  
BOLANGIR DISTRICT OF ORISSA**

| <b>Sl. No.</b>                               | <b>Name of the Watershed</b>            | <b>Ekalabya</b>         | <b>Jaikishan</b> | <b>Sreebhav</b>              | <b>Triranga</b> |
|--|---|-------------------------|------------------|------------------------------|-----------------|
| 1  | Year of Start                           | 2002-03                 | 2001-02          | 2001-02                      | 2000-01         |
| 2  | Year of Completion                      | 2006-07                 | 2005-06          | 2005-06                      | 2004-05         |
| 3  | Name of the District                    | Bolangir                | Bolangir         | Bolangir                     | Bolangir        |
| 4  | Name of the Block                       | Khaprakhol              | Khaprakhol       | Khaprakhol                   | Khaprakhol      |
| 5  | Gram Panchayat                          | Tankapani               | Luhasingha       | Sunamudi                     | Tellenpalli     |
| 6  | Total amount of fund in Rs. (Lakh)      | 64.600                  | 44.365           | 96.235                       | 54.150          |
| 7  | Total watershed fund in Rs.(lakhs)      | 40.800                  | 28.020           | 60.780                       | 34.200          |
| 8  | Total watershed plus fund in Rs.(lakhs) | 23.800                  | 16.345           | 35.455                       | 19.950          |
| 9  | Revenue village                         | Patrapali,Budha chhaper | Goudpali         | Sunamudi,Bartia, Bharuamunda | Tellenpali      |
| 10   | PIA                                     | ASCO, Patnagarh         | ASCO, Patnagarh  | ASCO, Patnagarh              | ASCO, Patnagarh |
| <b>Geographical details of the watershed</b> |   |                         |                  |                              |                 |
| 11   | Total no. of Village                    | 2                       | 1                | 3                            | 1               |
| 12   | Village name                            | Patrapali, Budhachhaper | Goudpali         | Sunamudi,Bartia, Bharuamunda | Tellenpali      |
| 13   | Total geographical area in ha.          | 707.39                  | 535.64           | 1076.2                       | 766.88          |
| 14   | Total Wasteland in ha                   | 63.13                   | 21.66            | 211.25                       | 766.88          |
| 15   | Total cultivable wasteland in ha        | 38.85                   | 21.66            | 137.59                       | 679.52          |
| 16   | Total uncultivable wasteland in ha      | 24.28                   | 0                | 73.66                        | 87.36           |
| 17   | Total gochar/pasture land in ha         | 19.43                   | 21.07            | 137.59                       | 22.61           |
| 18   | Total arable land in ha                 | 580                     | 404              | 657                          | 542.94          |
| 19   | Total non arable land in ha             | 100                     | 63               | 356                          | 27.06           |
| <b>Total agricultural land</b>               |   |                         |                  |                              |                 |
| 20   | Total                                   | 466                     | 404              |                              | 679.52          |
| 21   | Upland                                  | 87                      | 102              |                              | 475.60          |
| 22   | Medium land                             | 206                     | 191              |                              | 68              |
| 23   | Low land                                | 173                     | 111              |                              | 135             |
| 24   | Total irrigated agricultural land (ha)  | 3.64                    | 0                | 23.87                        | 0               |
| 25   | Total reserve forest in ha              | 0                       | 0                | 0                            | 0               |
| 26   | Total revenue/ Village forest in ha     | 34.80                   | 20.27            | 99.55                        | 4.45            |
| <b>Demographic details</b>                   |   |                         |                  |                              |                 |
| 27   | Total Population                        | 1762                    | 837              | 2168                         | 1536            |
| 28   | Men                                     | 830                     | 427              | 1169                         | 773             |
| 29   | Women                                   | 932                     | 410              | 999                          | 763             |
| <b>Social Class</b>                          |   |                         |                  |                              |                 |
| 30   | SC                                      | 456                     | 196              | 1511                         | 116             |
| 31   | ST                                      | 608                     | 15               | 120                          | 1116            |

|    |                               |                  |                 |                  |                  |
|----|-------------------------------|------------------|-----------------|------------------|------------------|
| 32 | OBC                           | 698              | 626             | 537              | 304              |
| 33 | Gen                           | 0                | 0               | 0                | 0                |
| 34 | Total number of households    | 401              | 138             | 394              | 363              |
|    | <b>Economic class of HH</b>   |                  |                 |                  |                  |
| 35 | Well off                      | 22               | 3               | 2                | 25               |
| 36 | Manageable                    | 65               | 21              | 84               | 74               |
| 37 | Poor                          | 146              | 55              | 222              | 122              |
| 38 | Very poor                     | 168              | 59              | 86               | 142              |
|    | <b>Category of Farmer</b>     |                  |                 |                  |                  |
| 39 | Landless                      | 27               | 4               | 91               | 37               |
| 40 | Marginal                      | 142              | 98              | 51               | 109              |
| 41 | Small                         | 207              | 22              | 251              | 78               |
| 42 | Medium                        | 0                | 0               | 0                | 0                |
| 43 | Big                           | 22               | 14              | 1                | 35               |
|    | <b>SHGs Details</b>           |                  |                 |                  |                  |
| 44 | Total SHGs adopted by WORLP   | 7                | 6               | 4                | 4                |
| 45 | Total SHGs promoted by WORLP  | 10               | 14              | 18               | 21               |
| 46 | Total number of SHGs in WORLP | 17               | 20              | 22               | 25               |
| 47 | Name of the Bank              | BAGB-Khaparakhol | BAGB-Dhandamund | BAGB-Khaparakhol | BAGB-Khaparakhol |
|    | <b>Men SHGs</b>               |                  |                 |                  |                  |
| 48 | Total number of Men SHG       | 4                | 6               | 6                | 9                |
| 49 | Total Male members            | 49               | 76              | 70               | 127              |
| 50 | SC                            | 17               | 24              | 21               | 37               |
| 51 | ST                            | 13               | 21              | 15               | 48               |
| 52 | OBC                           | 19               | 30              | 34               | 42               |
| 53 | Gen                           | 0                | 1               | 0                | 0                |
| 54 | Total Saving (lakhs)          | 19586            | 42568           | 25142            | 70125            |
|    | <b>Women SHGs</b>             |                  |                 |                  |                  |
| 55 | Total number of Women SHG     | 13               | 14              | 16               | 16               |
| 56 | Total Female members          |                  |                 |                  |                  |
| 57 | Total                         | 222              | 250             | 217              | 221              |
| 58 | SC                            | 79               | 51              | 47               | 67               |
| 59 | ST                            | 56               | 112             | 114              | 64               |
| 60 | OBC                           | 87               | 81              | 56               | 85               |
| 61 | Gen                           | 0                | 6               | 0                | 5                |
| 62 | Total Saving (lakhs)          | 163104           | 109232          | 199319           | 160685           |

**PROFILE OF SAMPLE MICRO WATERSHEDS IN NARLA BLOCK OF KALAHANDI  
DISTRICT OF ORISSA**

| <b>Sl. No.</b>                               | <b>Name of the Watershed</b>                | <b>Badjor</b> | <b>Maa Mahalaxmi Sandul</b> | <b>Sri Ramji Sandul</b>            |
|--|---|---------------|-----------------------------|------------------------------------|
| 1  | Year of Start                               | 2004-2005     | 2004-2005                   | 2004-2005                          |
| 2  | Year of Completion                          | 2009-2010     | 2009-2010                   | 2009-2010                          |
| 3  | Name of the District                        | Kalahandi     | Kalahandi                   | Kalahandi                          |
| 4  | Name of the Block                           | Narla         | Narla                       | Narla                              |
| 5  | Gram Panchayat                              | Ghodabacdha   | Ghodabandha                 | Bhanpur<br>Ghodabandha             |
| 6  | Total amount of fund in Rs(Lakh)            | 4,750,000     | 4,626,500                   | 4,731,000                          |
| 7  | Total watershed fund in Rs.(lakhs)          | 3,000,000     | 2,922,000                   | 2,988,000                          |
| 8  | Total watershed plus fund in Rupees (lakhs) | 1,750,000     | 1,704,500                   | 1,743,000                          |
| 9  | Revenue village                             | Ghodabandh    | Brahmani<br>Dhanramal       | Jodabandh<br>Lamsingha<br>Rakshi   |
| 10   | PIA   | SVA           | SVA                         | SVA                                |
| <b>Geographical details of the watershed</b> |   |               |                             |                                    |
| 11   | Total no. of Village                        | 1             | 2                           | 3                                  |
| 12   | Village name                                | Ghodabandh    | Brahmani and<br>Dhanramal   | Jodabandh,<br>Lamsingha,<br>Rakshi |
| 13   | Total geographical area in ha.              | 564           | 487                         | 498                                |
| 14   | Total Wasteland in ha                       | 39.32         | 53.17                       | 64.12                              |
| 15   | Total cultivable wasteland in ha            | 31.72         | 41.17                       | 50.92                              |
| 16   | Total uncultivable wasteland in ha          | 7.6           | 12                          | 13.2                               |
| 17   | Total gochar/pasture land in ha             | 62.86         | 36                          | 49.2                               |
| 18   | Total arable land in ha                     | 0             | 0                           | 0                                  |
| 19   | Total non arable land in ha                 | 0             | 0                           | 0                                  |
| <b>Total agricultural land</b>               |   |               |                             |                                    |
| 20   | Total                                       | 564           | 262.93                      | 445.2                              |
| 21   | Upland                                      | 56.4          | 100.58                      | 112                                |
| 22   | Medium land                                 | 359.6         | 137.31                      | 306.4                              |
| 23   | Low land                                    | 148           | 25.05                       | 26.8                               |
| 24   | Total irrigated agricultural land (ha )     | 28            | 16                          | 28                                 |
| 25   | Total reserve forest in ha                  | 0             | 0                           | 0                                  |
| 26   | Total revenue/ Village forest in ha         | 16.1428       | 10                          | 24                                 |
| <b>Demographic details of the watersheds</b> |   |               |                             |                                    |
| 27   | Total <b>Population</b>                     | 1511          | 936                         | 1275                               |
| 28   | Men   | 792           | 498                         | 656                                |
| 29   | Women                                       | 719           | 438                         | 619                                |
| <b>Social Class</b>                          |   |               |                             |                                    |



|    |                                     |                  |                  |                  |
|----|-------------------------------------|------------------|------------------|------------------|
| 30 | SC                                  | 279              | 369              | 382              |
| 31 | ST                                  | 323              | 160              | 140              |
| 32 | OBC                                 | 909              | 407              | 753              |
| 33 | Gen                                 | 0                | 0                | 0                |
| 34 | Total number of households          | 400              | 245              | 211              |
|    | <b>Economic class of House Hold</b> |                  |                  |                  |
| 35 | Well off                            | 59               | 19               | 16               |
| 36 | Manageable                          | 142              | 20               | 22               |
| 37 | Poor                                | 96               | 106              | 1445             |
| 38 | Very poor                           | 103              | 100              | 28               |
|    | <b>Category of Farmer</b>           |                  |                  |                  |
| 39 | Landless                            | 98               | 116              | 47               |
| 40 | Marginal                            | 110              | 28               | 35               |
| 41 | Small                               | 26               | 89               | 31               |
| 42 | Medium                              | 111              | 10               | 78               |
| 43 | Big                                 | 55               | 2                | 20               |
|    | <b>SHGs Details</b>                 |                  |                  |                  |
| 44 | Total SHGs adopted by WORLP         | 16               | 12               | 15               |
| 45 | Total SHGs promoted by WORLP        | 10               | 2                | 4                |
| 46 | Total number of SHGs in WORLP       | 26               | 14               | 19               |
| 47 | Name of the Bank                    | KAGB<br>Tulapada | KAGB<br>Tulapada | KAGB<br>Tulapada |
|    | <b>Men SHGs</b>                     |                  |                  |                  |
| 48 | Total number of Men SHG             | 6                | 1                | 0                |
| 49 | Total Male members                  | 82               | 12               | 0                |
| 50 | SC                                  | 4                | 3                | 0                |
| 51 | ST                                  | 51               | 5                | 0                |
| 52 | OBC                                 | 27               | 4                | 0                |
| 53 | Gen                                 | 0                | 0                | 0                |
| 54 | Total Saving (lakhs)                | 12332            | 200              | 0                |
|    | <b>Women SHGs</b>                   |                  |                  |                  |
| 55 | Total number of Women SHG           | 20               | 13               | 19               |
| 56 | Total Female members                |                  |                  |                  |
| 57 | Total                               | 308              | 157              | 211              |
| 58 | SC                                  | 78               | 101              | 90               |
| 59 | ST                                  | 80               | 30               | 25               |
| 60 | OBC                                 | 150              | 26               | 96               |
| 61 | Gen                                 | 0                | 0                | 0                |
| 62 | Total Saving (lakhs)                | 152885           | 116811           | 167282           |

**PROFILE OF SAMPLE MICRO WATERSHEDS IN KOMNA BLOCK OF  
NUAPADA DISTRICT OF ORISSA**

| <b>Sl. No</b>                  | <b>Name of the Watershed</b>                | <b>Ghodaghat Nala</b>          | <b>Jay Jaganath</b> | <b>Maa Bastani</b> |
|--------------------------------|---|--------------------------------|---------------------|--------------------|
| 1                              | Year of Start                               | 2003-2004                      | 2003-2004           | 2003-2004          |
| 2                              | Year of Completion                          | 2007-2008                      | 2007-2008           | 2007-2008          |
| 3                              | Name of the District                        | Nuapada                        | Nuapada             | Nuapada            |
| 4                              | Name of the Block                           | Komana                         | Komana              | Komana             |
| 5                              | Gram Panchayat                              | Thikpalli-Lakhna               | Nuagaon Gandamer    | Kandetara Gandamer |
| 6                              | Total amount of fund Rs (Lakh)              | 4,750,000                      | 4,750,000           | 4,750,000          |
| 7                              | Total watershed fund Rs.(lakhs)             | 3,000,000                      | 3,000,000           | 3,000,000          |
| 8                              | Total watershed plus fund in Rupees (lakhs) | 1,750,000                      | 1,750,000           | 1,750,000          |
| 9                              | Revenue village                             | Sukulimundi, Dedgaon Sarasmal  | Larki Thutiber      | Danojhola          |
| 10                             | PIA   | ASCO                           | CPSW                | CPSW               |
| <b>Geographical details</b>    |   |                                |                     |                    |
| 11                             | Total no. of Village                        | 3                              | 2                   | 1                  |
| 12                             | Village name                                | Sukulimundi, Dedgaon, Sarasmal | Larki, Thutiber     | Danojhola, Malpada |
| 13                             | Total geographical area in ha.              | 959.2                          | 1400                | 1020               |
| 14                             | Total Wasteland in ha                       | 13.04                          | 18.78               | 21.9               |
| 15                             | Total cultivable wasteland (ha )            | 0                              | 7.78                | 4.86               |
| 16                             | Total uncultivable wasteland                | 13.03                          | 11                  | 17.04              |
| 17                             | Total gochar/pasture land (ha)              | 60.62                          | 17.6                | 47.52              |
| 18                             | Total arable land (ha)                      | 194.26                         | 299.15              | 311.97             |
| 19                             | Total non arable land (ha)                  | 49.21                          | 200.85              | 188.03             |
| <b>Total agricultural land</b> |   |                                |                     |                    |
| 20                             | Total                                       | 715.74                         | 500                 | 728.52             |
| 21                             | Upland                                      | 370.7                          | 272.51              | 342.18             |
| 22                             | Medium land                                 | 226.9                          | 155.6               | 171                |
| 23                             | Low land                                    | 118.1                          | 71.89               | 215.3              |
| 24                             | Total irrigated agricultural land (ha )     | 15.2                           | 8.12                | 26.41              |
| 25                             | Total reserve forest in ha:                 | 0                              | 24.72               | 88.95              |
| 26                             | Total revenue/ Village forest ha:           | 120.6                          | 20.04               | 34.55              |
| <b>Demographic details</b>     |   |                                |                     |                    |
| 27                             | Total Population                            | 2021                           | 2759                | 5713               |
| 28                             | Men   | 1036                           | 1396                | 2727               |

|    |                               |                    |                    |                    |
|----|-------------------------------|--------------------|--------------------|--------------------|
| 29 | Women                         | 985                | 1363               | 2986               |
|    | <b>Social Class</b>           |                    |                    |                    |
| 30 | SC                            | 141                | 789                | 1927               |
| 31 | ST                            | 1775               | 728                | 2317               |
| 32 | OBC                           | 56                 | 896                | 1104               |
| 33 | Gen                           | 49                 | 346                | 365                |
| 34 | Total number of households    | 405                | 357                |                    |
|    | <b>Economic class of HHs</b>  |                    |                    |                    |
| 35 | Well off                      | 10                 | 33                 | 48                 |
| 36 | Manageable                    | 64                 | 5                  | 95                 |
| 37 | Poor                          | 97                 | 196                | 158                |
| 38 | Very poor                     | 234                | 123                | 82                 |
|    | <b>Category of Farmer</b>     |                    |                    |                    |
| 39 | Landless                      | 55                 | 28                 | 48                 |
| 40 | Marginal                      | 169                | 155                | 108                |
| 41 | Small                         | 152                | 160                | 191                |
| 42 | Medium                        | 0                  | 6                  | 16                 |
| 43 | Big                           | 29                 | 8                  | 20                 |
|    | <b>SHGs Details</b>           |                    |                    |                    |
| 44 | Total SHGs adopted by WORLP   | 15                 | 1                  | 12                 |
| 45 | Total SHGs promoted by WORLP  | 4                  | 1                  | 12                 |
| 46 | Total number of SHGs in WORLP | 19                 | 17                 | 24                 |
| 47 | Name of Bank                  | KAGB<br>Budhikomna | KAGB<br>Budhikomna | KAGB<br>Budhikomna |
|    | <b>Men SHGs</b>               |                    |                    |                    |
| 48 | Total number of Men SHG       | 6                  | 1                  | 0                  |
| 49 | Total Male members            | 105                | 16                 | 0                  |
| 50 | SC                            | 1                  | 0                  | 0                  |
| 51 | ST                            | 98                 | 0                  | 0                  |
| 52 | OBC                           | 4                  | 16                 | 0                  |
| 53 | Gen                           | 2                  | 0                  | 0                  |
| 54 | Total Saving (lakhs)          | 65000              | 22290              | 0                  |
|    | <b>Women SHGs</b>             |                    |                    |                    |
| 55 | Total number of Women SHG     | 13                 | 16                 | 35                 |
| 56 | Total Female members          |                    |                    |                    |
| 57 | Total                         | 164                | 204                | 388                |
| 58 | SC                            | 2                  |                    |                    |
| 59 | ST                            | 132                |                    |                    |
| 60 | OBC                           | 13                 |                    |                    |
| 61 | Gen                           | 17                 |                    |                    |
| 62 | Total Saving (lakhs)          | 182200             | 104500             | 99,771             |

**PROFILE OF SAMPLE MICRO WATERSHEDS IN BODEN BLOCK OF  
NUAPADA DISTRICT OF ORISSA**

| <b>Sl, No</b>               | <b>Name of the Watershed</b>             | <b>Domjhar</b>                           | <b>Litisargi</b>                        | <b>Palenbasa</b>    | <b>Pitapani &amp; Dumerpadar</b>   | <b>Redhamal</b>    |
|-----------------------------|--|--|---|---------------------|------------------------------------|--------------------|
| 1                           | Year of Start                            | 2004-2005                                | 2004-2005                               | 2004-2005           | 2004-2005                          | 2004-2005          |
| 2                           | Year of Completion                       | 2009-2010                                | 2008-2009                               | 2008-2009           | 2008-2009                          | 2009-2010          |
| 3                           | Name of the District                     | Nuapada                                  | Nuapada                                 | Nuapada             | Nuapada                            | Nuapada            |
| 4                           | Name of the Block                        | Boden                                    | Boden                                   | Boden               | Boden                              | Boden              |
| 5                           | Gram Panchayat                           | Domjhar                                  | Litisargi                               | Larka               | Litisargi & Karangamal             | Bhaisadani         |
| 6                           | Total amount of fund in Rs(Lakh)         | 5415000                                  | 7,790,000                               | 4,275,000           | 3,895,000                          | 2375000            |
| 7                           | Total watershed fund in Rs.(lakhs)       | 3420000                                  | 4,920,000                               | 2,700,000           | 2,460,000                          | 1500000            |
| 8                           | Total watershed plus fund in Rs. (lakhs) | 1995000                                  | 2,870,000                               | 1575000             | 1,435,000                          | 875000             |
| 9                           | Revenue village                          | Domjhar                                  | Litisargi                               | Palenbasa Khrudguma | Pitapani Dumerpadar Karangamal     | Redhamal Rundi     |
| 10                          | PIA                                      | LWS, Boden                               | LWS Boden                               | LWS Boden           | LWS Boden                          | LWS Boden          |
| <b>Geographical details</b> |  |  |   |                     |                                    |                    |
| 11                          | Total no. of Village                     | 1  | 4                                       | 2                   | 2                                  | 2                  |
| 12                          | Village name                             | Domjhar, Runibasa Budhimaunda Bhalumunda | Litisargi Dahanpali, Ekkadswar Bhoipada | Palenbasa Khrudguma | Pitapani, Dumerpadar Karangamal(P) | Redhamal Rundi (P) |
| 13                          | Total geographical area in ha.           | 845.79                                   | 901.22                                  | 563.85              | 531.75                             | 499.90             |
| 14                          | Total Wasteland in ha                    | 123                                      | 174                                     | 119                 | 209                                | 79                 |
| 15                          | Total cultivable wasteland in ha         | 121                                      | 197                                     | 38                  | 112                                | 95                 |
| 16                          | Total uncultivable wasteland (ha)        | 12                                       | 17                                      | 121                 | 97                                 | 13.50              |
| 17                          | Total gochar/pasture                     | 54                                       | 179                                     | 58                  | 52                                 | 22                 |

|    |   |      |      |        |     |            |
|----|---|------|------|--------|-----|------------|
|    | land (ha)                               |      |      |        |     |            |
| 18 | Total arable land in ha                 | 504  | 585  | 268.85 | 352 | 170        |
| 19 | Total non arable land in ha             | 66   | 235  | 181.15 | 58  | 80         |
|    | <b>Total agricultural land</b>          |      |      |        |     |            |
| 20 | Total                                   | 514  | 820  | 376    | 410 | 401        |
| 21 | Upland                                  | 246  | 451  | 301    | 246 | 301        |
| 22 | Medium land                             | 134  | 184  | 37     | 82  | 58         |
| 23 | Low land                                | 134  | 185  | 38     | 82  | 42         |
| 24 | Total irrigated agricultural land (ha ) | 74   | 0    | 0      | 0   | 2          |
| 25 | Total reserve forest in ha              | 39   | 139  | 134    | 154 | 187        |
| 26 | Total revenue/ Village forest in ha     | 78   | 121  | 39     | 17  | 68         |
|    | <b>Demographic details</b>              |      |      |        |     |            |
| 27 | Total Population                        | 2639 | 2212 | 493    | 184 | <b>263</b> |
| 28 | Men                                     | 1282 | 1130 | 246    | 93  | <b>134</b> |
| 29 | Women                                   | 1357 | 1082 | 247    | 91  | <b>129</b> |
|    | <b>Social Class</b>                     |      |      |        |     |            |
| 30 | SC                                      | 364  | 191  | 43     | 0   | 11         |
| 31 | ST                                      | 0    | 217  | 356    | 55  | 252        |
| 32 | OBC                                     | 2231 | 1768 | 94     | 129 | 0          |
| 33 | Gen                                     | 44   | 36   | 0      | 0   | 0          |
| 34 | Total number of households              | 533  | 681  | 83     | 39  | 60         |
|    | <b>Economic class of House Hold</b>     |      |      |        |     |            |
| 35 | Well off                                | 35   | 56   | 10     | 0   | 10         |
| 36 | Manageable                              | 30   | 171  | 21     | 1   | 39         |
| 37 | Poor                                    | 365  | 397  | 32     | 22  | 9          |
| 38 | Very poor                               | 103  | 57   | 20     | 16  | 2          |
|    | <b>Category of Farmer</b>               |      |      |        |     |            |
| 39 | Landless                                | 67   | 4    | 3      | 4   | 4          |

|                     |                               |                |            |                 |                 |            |
|---------------------|-------------------------------|----------------|------------|-----------------|-----------------|------------|
| 40                  | Marginal                      | 408            | 47         | 55              | 23              | 47         |
| 41                  | Small                         | 15             | 3          | 15              | 12              | 3          |
| 42                  | Medium                        | 0              | 2          | 0               | 0               | 0          |
| 43                  | Big                           | 43             | 4          | 10              | 0               | 6          |
| <b>SHGs Details</b> |                               |                |            |                 |                 |            |
| 44                  | Total SHGs adopted by WORLP   | 36             | 30         | 1               | 3               | 4          |
| 45                  | Total SHGs promoted by WORLP  | 3              | 8          | 2               | 2               | 0          |
| 46                  | Total number of SHGs in WORLP | 39             | 38         | 3               | 5               | 4          |
| 47                  | Name of the Bank              | SBI, Karlakote | SBI, Boden | UGB, Karangamal | UGB, Karangamal | SBI, Boden |
| <b>Men SHGs</b>     |                               |                |            |                 |                 |            |
| 48                  | Total number of Men SHG       | 2              |            | 0               | 0               | 0          |
| 49                  | Total Male members            | 26             |            | 0               | 0               | 0          |
| 50                  | SC                            |                |            | 0               | 0               | 0          |
| 51                  | ST                            |                |            | 0               | 0               | 0          |
| 52                  | OBC                           | 26             |            | 0               | 0               | 0          |
| 53                  | Gen                           |                |            | 0               | 0               | 0          |
| 54                  | Total Saving (lakhs)          | 7830           |            | 0               | 0               | 0          |
| <b>Women SHGs</b>   |                               |                |            |                 |                 |            |
| 56                  | Total number of Women SHG     | 29             | 35         | 4               | 3               | 4          |
| 55                  | Total Female members          |                |            |                 |                 |            |
| 57                  | Total                         | 409            | 446        | 46              | 41              | 60         |
| 58                  | SC                            | 44             | 39         | 8               | 1               | 0          |
| 59                  | ST                            | 0              | 21         | 29              | 15              | 60         |
| 60                  | OBC                           | 357            | 382        | 9               | 25              | 0          |
| 61                  | Gen                           | 8              | 4          | 0               | 0               | 0          |
| 62                  | Total Saving (lakhs)          | 273512         | 239,654    | 11930           | 9612            | 27836      |

**PROFILE OF SAMPLE MICRO WATERSHEDS IN LAXMIPUR BLOCK OF KORAPUT DISTRICT OF ORISSA**

| Sl. No | Name of the watershed | Name of GP | Name of village | Total H.H. | Population |     |     | S.T. |     |     | SC  |     |     | OBC/ Gen |    |    |
|--------|-----------------------|------------|-----------------|------------|------------|-----|-----|------|-----|-----|-----|-----|-----|----------|----|----|
|        |                       |            |                 |            | M          | F   | T   | M    | F   | T   | M   | F   | T   | M        | F  | T  |
| 1      | Amadei W.S.A.         | Burja      | Bhitarguda      | 54         | 122        | 121 | 243 | 122  | 121 | 243 |     |     | 0   |          |    | 0  |
|        |                       |            | Koijhankar      | 13         | 37         | 30  | 67  | 37   | 30  | 67  |     |     | 0   |          |    | 0  |
| 2      | Kadingmali W.S.A.     | Oriapentha | Biriguda        | 189        | 395        | 375 | 770 | 274  | 275 | 549 | 121 | 100 | 221 |          |    | 0  |
|        |                       |            | Kenduarar       | 92         | 188        | 187 | 375 | 188  | 187 | 375 |     |     | 0   |          |    | 0  |
|        |                       |            | Perudiguda      | 89         | 186        | 187 | 373 | 186  | 187 | 373 |     |     | 0   |          |    | 0  |
| 3      | Timibandha W.S.A.     | Kutinga    | Talakuntinga    | 187        | 421        | 382 | 803 | 394  | 351 | 745 | 25  | 30  | 55  | 2        | 1  | 3  |
| 4      | Pataleswar W.S.A.     | Panchada   | A.Ambaguda      | 83         | 155        | 171 | 326 | 129  | 145 | 274 | 10  | 8   | 18  | 16       | 18 | 34 |
|        |                       |            | Ledriguda       | 55         | 109        | 113 | 222 | 109  | 113 | 222 |     |     | 0   |          |    | 0  |

**PROFILE OF SAMPLE MICRO WATERSHEDS IN BANDHUGAON BLOCK OF KORAPUT DISTRICT OF ORISSA**

| Sl. No | Name of the watershed | Name of the GP | Name of village | Total H.H. | Population |     |     | S.T. |     |     | SC |    |    | OBC/Gen |    |    |
|--------|-----------------------|----------------|-----------------|------------|------------|-----|-----|------|-----|-----|----|----|----|---------|----|----|
|        |                       |                |                 |            | T          | M   | F   | T    | M   | F   | T  | M  | F  | T       | M  | F  |
| 1      | Maa Bhavani VDA       | Jagguda        | Lading          | 125        | 648        | 327 | 321 | 598  | 302 | 296 | 34 | 17 | 17 | 16      | 8  | 8  |
|        |                       |                | Kuntesh         | 88         | 385        | 190 | 195 | 278  | 135 | 143 | 59 | 32 | 27 | 48      | 23 | 25 |
|        |                       |                | Antamada        | 60         | 317        | 174 | 143 | 269  | 146 | 123 | 14 | 8  | 6  | 34      | 20 | 14 |
| 2      | Trinath VDA           | Jagguda        | Parting         | 198        | 1246       | 697 | 549 | 1190 | 669 | 521 | 49 | 24 | 25 | 7       | 4  | 3  |
|        |                       |                | Kupakal         | 66         | 291        | 152 | 139 | 291  | 152 | 139 | 0  | 0  | 0  | 0       | 0  | 0  |
|        |                       |                | Ginjikal        | 136        | 658        | 336 | 322 | 520  | 271 | 249 | 85 | 41 | 44 | 53      | 24 | 29 |
| 3      | Godahada VDA          | Kanagaon       | Kanagaon        | 178        | 800        | 375 | 425 | 705  | 330 | 375 | 34 | 14 | 20 | 61      | 31 | 30 |
|        |                       |                | Ramjiput        | 205        | 1020       | 498 | 522 | 922  | 454 | 468 | 20 | 12 | 8  | 78      | 32 | 46 |

**PROFILE OF SAMPLE MICRO WATERSHEDS IN THUAMUL RAMPUR BLOCK OF  
KALAHANDI DISTRICT OF ORISSA**

| Sl. No | Name of the village | Name of GP    | Name of Villages covered | H.H | Population |     |     | S.C. |    |    | ST  |     |     | OBC /Gen |    |    |
|--------|---------------------|---------------|--------------------------|-----|------------|-----|-----|------|----|----|-----|-----|-----|----------|----|----|
|        |                     |               |                          |     | T          | M   | F   | T    | M  | F  | T   | M   | F   | T        | M  | F  |
| 1      | Maa Khandual MWS    | Pustiguda     | Pustiguda                | 52  | 221        | 104 | 117 | 43   | 24 | 19 | 178 | 80  | 98  | 0        | 0  | 0  |
|        |                     |               | Jubang                   | 74  | 322        | 153 | 169 | 53   | 25 | 28 | 239 | 113 | 126 | 30       | 16 | 14 |
| 2      | Dharitri MWS        | Pullingpad ar | Pulling padar            | 171 | 749        | 366 | 383 | 64   | 33 | 31 | 660 | 322 | 338 | 25       | 13 | 12 |
|        |                     |               | Kurkuti                  | 11  | 42         | 22  | 20  | 17   | 8  | 9  | 0   | 0   | 0   | 25       | 12 | 13 |
| 3      | Maa Laxmi MWS       | Gokalama      | Gokalama                 | 75  | 290        | 139 | 151 | 82   | 38 | 44 | 177 | 88  | 89  | 31       | 15 | 16 |
|        |                     |               | Kathaghar                | 96  | 412        | 201 | 211 | 36   | 17 | 19 | 335 | 167 | 168 | 41       | 22 | 19 |



## **3.2 PERFORMANCE OF THE MICRO WATERSHEDS**

The programs envisage different components covering the whole array of livelihoods support interventions mainly for the poor ST and SC communities. The programs comprise the components and subcomponents like Capacity Building of communities & support agencies, Land & Water Management, Participatory Forest Management, Production System Enhancement through Agriculture/ Horticulture Production, Livestock/ Pisciculture development etc. Besides the program facilitate the policy advocacy as regards to empowerment of the tribal.

### **Institution Building**

The basic structure at the micro watershed level is the Watershed Development Committee / Village Development Committee comprising the representatives from the villages within the micro watershed. Those representatives of the WDC/ VDC are either selected or elected from the existing village-based organizations such as SHG, UG etc. The WDC/VDC comprise 12 to 20 members out of which about 50% are women. The WDC/VDC has the President and Secretary as office bearers to look into the day-to-day affair as regards to implementation of the program, accounts keeping etc. The WDC/ VDC has engaged Community Link Workers / Village Volunteers from different domain to support the implementation of program activities. Besides the VDC, in each village, the Village Level Sub Committee (VLSC) under OTELP has been formed under OTELP to implement the program activity in their respective village.

### **Land & Water Management**

The component aims to increase rainwater use efficiency, reduce run off and soil loss and increase water availability through improved surface and ground water development & management. The various activities under the sub-component includes engineering structures like land development (bonding, land leveling, terracing, deep trenches, gully plugging, etc.) and creation of water harvesting & recharging structures (check dam, diversion wire with field channel, farm pond, percolation, tank etc.). These structures have been supported by biological measures like growing of cover crops, mixed cropping, inter-cropping, mixed plantation etc.

Land development: The land in the program villages is generally degraded. Most of the lands are not bonded and sloppy in topography. The excess run off takes away the topsoil creating soil loss from the field. Measures such as Earthen Bonding, Stone Bonding have been made along the field boundaries converting the non-arable land to arable land. These structures have been constructed across the slope, which check soil erosion, and help in-situ moisture conservation and ultimately increase the yield from agriculture.

Gully control structures with boulders/ stones and soil have been constructed to arrest soil erosion. Continuous Contour Trenches (CCT) and Staggered Contour Trenches (SCT) have been dug to hold water in upper reaches leading to increased percolation and soil moisture along with recharge of ground water at lower reaches. This is to help reduce the quantum and speed of water thus reducing soil erosion and increase moisture available leading to sustainability of agriculture.

Water Harvesting & Recharging Structures: Storage and management of rainwater is a major concern so as to increase the water availability in the villages in summer. Because of the topographical disadvantage the rainwater flows out and creates flood situation in rain and drought in summer. To address these issues the project promotes creation of water bodies in the villages so as to bring controlled run-off of rainwater and increase the ground water recharge. The project beneficiaries have constructed Numbers of Water Harvesting Structures such as Check Dams, Pond, Diversion Weir, Chuan, Dug Well, Percolation Tank, and Gravity Flow Irrigation. These structures are to control the run off water, increase ground water recharge and ensure water availability for a longer period. The improved water availability is being used to provide protective & assured irrigation through canals.

### **Agriculture and Horticulture Development**

Since most of the tribal live in a forest eco-system, focus has been given for diversification of agriculture and intensification of crop with adoption of technology and natural resource management to enhance their food production. Dry land crop production technology, organic farming, sustainable agriculture practices are the thrust areas for agriculture and horticulture production. Crop Diversification, Inter cropping,

Introduction of New crops/ Improved varieties are the various cropping strategy employed. Green Manuring, Use of Bio-fertilizer, Use of Vermi compost, Use of Bio-pesticides (Neem Based) are the various low monetary inputs practiced.

System of Rice Intensification (SRI), a method of cultivation that uses less water, fertilizer and seeds as compared to traditional practice has been introduced as an improved cropping system. SRI has the potential to increase the Productivity by two to three times than traditional method of cultivation. Farmers are trained on improved crop management practices in paddy, maize, ragi and pigeon pea in the field at regular intervals in farmers' field schools. Off-season vegetable cultivation, Plantations of Horticulture species / forest species / miscellaneous species have been undertaken. Seedlings/ grafts of Papaya, Lemon, Drumstick, Banana, Mango, and Litchi have been distributed for back yards plantation.

### **Participatory Forest Management**

Forest is an important resource for the tribal. They depend on forest earn income through collecting the NTFPs and other roots, herbs, shrubs etc. for supplementing the food basket. The programmes have facilitated the villagers to form Vana Sangrakhya Samiti(VSS) to implement the Participatory Forest Management activities. The VSS as a part of the WDC/VDC receives funds from the WDC/VDC and implements the forest development activities. Gap filling plantations in degraded forest patches have been made. The SHGs have been mobilized to raise nurseries to support the VSS in providing the seedlings of forest species for plantation.

### **Livestock & Aquaculture**

The domestic animals are a major asset of the poor tribal. People rear goats, Pigs, Cattle, Poultry bird etc which not only at times supplement food but also act as immediate cash return at emergencies. To promote livelihood system, prevention of animal mortality has been effected through immunization of animals in health camps organized at regular interval. To strengthened livestock sector, one of the five volunteers/CLWs in each micro watershed has been promoted as Livestock Para Worker through training on vaccination procedure, handling of drugs and treatment of common diseases and equipped with veterinary kits to extend necessary support.

Improved breed of goat, sheep have been reared by the SHGs in Koraput and improved breed of Buck has been obtained by SHGs for breeding purpose. Banaraj Cocks and Ducks are also found supplied in Koraput.

### **Rural Financial Service**

Rural Financial Services addresses the livelihoods and food security issues of women in the communities. The strategy of establishing a corpus funds to take up the livelihoods activities through the Self Help Groups has been identified as a major intervention to enhance the livelihoods aspects of the households and in reducing dependency from the moneylenders at the community level.

Each SHG is provided with a start up kit of pre-designed formats and registers (worth Rs 500/-). This kit has been provided to all the SHGs –both existing and the new ones formed under OTELP. As an incentive to strengthen the internal loaning and to undertake any suitable,/ feasible group activity, each watershed is given a one time grant of Rs 50,000/- as seed capital which is routed through the Village Development Committee and distributed proportionately to the new SHGs and the already existing SHGs based on the total number of groups covering all the households in the watershed. The seed capital quantum ranges from Rs 2000/- to Rs 5000/- per group. In addition to the above, each watershed is allocated Rs2.25lacs as a Revolving Fund, which is routed through the VDCs in phases. While this amount is given as a grant to the VDC by the Project, it is given as loan by the VDC to the SHGs based on their livelihoods plan. This helps the SHG to make a capital investment in their livelihood plan.

Capacity building support has been extended to the SHGs and linkages established with different financial agencies / institutes for taking up micro entrepreneurship activities by the SHGs. Small micro entrepreneurship activities such as vegetable cultivation, poultry, kitchen garden, collective marketing etc are seen in the programme villages. Seed capital grant has been distributed to the SHGs to enhance the capital base so as to take up internal loaning among the group members.

The WDC/VDCs have provided Revolving Fund to the SHGs to take up income generating activities. The groups have been oriented in formulating business development plan basing upon their skill, resources, infrastructure etc. available around the villages. Majority of the activities undertaken are conventional in nature like goatry, poultry, duckery etc. With the support of MART, necessary orientation on marketing initiatives is under progress both at facilitating agency and community level as well.

### **Development Initiative Fund/Livelihood Support Fund**

For the chronic poor, the projects have established an approach through its Development Initiatives Fund (DIF)/ Livelihood Support Fund component to provide livelihood support to the poor and vulnerable. The Fund is intended to ensure better targeting of the Households, which are traditionally left outs, including the landless, destitute, and disabled and those who are unable to be part of the SHG or other income generating activities.

The DIF under OTELP has also been used to construct village level storage structures in each micro watershed. These structures are used for storing WFP supported food grains, and VDC records, etc.

Construction of individual toilets with pipe water supply for each household to provide complete sanitation facilities in Th Rampur, Kalhandi district is another initiative under the DIF. Gravity flow water supply structures have been set up in these villages by using water from the perennial streams. The constructions of toilets and bathrooms for the individual households and the construction of water supply through gravity flow system have been completed in some of the project villages. This aims at improving the quality of life in the programme villages by achieving complete sanitation and provision of safe drinking water at each individual household.

### **Support for Policy Initiatives**

Land to the landless and homestead land to the homeless households has been the major components of empowerment under the OTELP. With the active support and assistance of the Revenue Department, ITDAs in the field along with FNGOs/PIAs are

facilitating for providing land to landless under various existing schemes and Acts of the Govt. of Orissa.

### **OTELP: Performances**

The phase-1 micro watersheds cover an area of 63218.81 ha of non-forestland and about 30,000 ha of forest. Within these watersheds, a total of 396 natural villages are now participating in the program. There are 136 Village Development Committees (VDCs) registered, 1397 SHGs and 218 VSSs established. A total of 418 Entry Point Activities have been implemented in 356 villages. There are 218 VSS formed which have completed Community Forest Plans. There has been creation of 5629 ha of arable lands benefiting 6968 households and an increase of 3497 ha irrigated area in Kharif and 1805 Ha in Rabi benefiting 11618 Households.

Watershed treatment works and agricultural/horticultural development activities have been undertaken in a large scale. Farmers have been provided with high yielding varieties of rice, fruit-tree seedlings, and vegetable seeds enabling them to increase their production on both irrigated and dry land and to intensify and diversify their production. Vegetables are providing a new source of income for many households. The programme has facilitated tie up arrangement with different resource organisations for technical and capacity building support to the farmers for better crop management. Close liaison with International Crop Research Institute (ICRISAT), Hyderabad has been established for introduction and promotion of legumes such as Ground Nut, Arhar, Black Gram and Gram to bring the stability in production system. Regional Centre, Central Tuber Crops Research Institute (ICAR), Bhubaneswar gives support to the farmers and field staff for scientific methods of cultivation of tuber crops. The Regional Plant Research Centre, Bhubaneswar gives support to the farmers for supply of the planting materials of Tissue Culture Banana, hybrid papaya and hybrid drum stick and provides capacity building support for their scientific methods of cultivation.

There are 120 go-downs (warehouses) constructed which are being used to store NTFP and other production in order to gain higher prices in the off-season. A pilot project on marketing through association of MART, a resource organization has yielded very

positive result in regards to reducing exploitation by traders and enabling the communities to receive fair prices for their products and add value by simple processing techniques. There is a turnover of Rs. 112.24 lakhs through collective marketing of 12 products from 134 Phase I programme villages covering 170 SHGs and benefiting 1332 households.

There has been creation of 871 nos (12 types) of water bodies, 11012 nos. of gully control structures, 320 nos. of stream bank erosion controls, 30668 mtrs of canal besides farm demonstration in 2111 ha covering 17 types of crop and agriculture practices benefiting 14678 farmers. Further, 200 Agriculture Resource Centres have been created along with promotion of 141 para-vet workers facilitating immunization of 36295 domestic animals.

Several training events have been conducted for all stakeholders .The Capacity Building activities include 523 community mobilization camps, 1663 community empowerment trainings, 947 beneficiary skill up gradation training, 183 training for staff of FNGO & support agencies.

Rural infrastructure has been upgraded with the construction of water storage structures and watersheds treatment works, and drinking water facilities, storage warehouses, feeder roads and multi-purpose halls. An initiative has been taken in association with FNGO Gram Vikas to cover 39 villages in Th. Rampur under total sanitation benefiting 1471 households. Under this, each individual household is being provided with tap water through gravity flow structure and a toilet. Ensuring total sanitation and safe drinking water at the doorstep, this effort also provides irrigation to the back yard land of the tribal households for fruit and vegetable cultivation. The construction of individual toilets has been completed in all these villages and the gravity flow structures are under construction.

The project interventions have generated a demand for labour and paid labour is providing increased incomes in Programme villages – and in some locations this is reducing distress migration. Women and men are also being paid the minimum wage@Rs.70. The payment of equal wages to women and men has ushered in gender equality. During the year 2007-08, a total of 1265096 wage days have been created

benefiting 14096 households and providing an average of 89 days of employment through project works. The WFP food support has also proved to be very popular. To date, 3505 MT of Rice and 127.40 MT of pulses have been utilized as a part of daily wage payment.

OTELP has succeeded in creating platform and space for women to participate and boost their self-confidence. The programme currently reaches out to 1397 SHGs, out of which 765 SHGs are supported with seed capital, 519 SHGs linked with Banks and other Financial Institutions, and 427 SHGs prepared business development plan for IGA. The total savings mobilized by these SHGs is Rs. 1,15,74,400/-. Women constitute close to 50 percent of the membership of the 136 Village Development Committees. More than 60% of the Community Mobilizers are women. Women are managing most of the village nurseries set up by communities. With the help MART, women in 134 programme villages have enhanced their incomes through better processing practices and collective sale of Non Timber Forest Produce (NTFP) such as Siali leaf, mango jelly and cashew etc. Women are gradually being enabled to become active participants in their development and that of the community.

The programme is facilitating effective implementation of the Forest Dwellers Act in the programme villages to ensure provision of land for the landless people. The local revenue officials have been facilitated to ensure provision of land for the landless people under existing regulatory provisions of the Govt.

### **WORLP: Performances**

There are 290 Watershed Development Committee formed, one under each of 290 micro watersheds. Out of 150766 ha of treatable area, 92871 ha of land have been treated as under

| <b>Sl. No.</b> | <b>Name of the District</b> | <b>Treatable Area in Ha.</b> | <b>Area Treated in Ha.</b> |
|----------------|-----------------------------|------------------------------|----------------------------|
| 1              | Bolangir                    | 73852                        | 45210                      |
| 2              | Nuapada                     | 28015                        | 16474                      |
| 3              | Bargarh                     | 21649                        | 15524                      |
| 4              | Kalahandi                   | 27250                        | 15663                      |
| <b>Total</b>   |                             | <b>150766</b>                | <b>92871</b>               |



### Land Based Interventions

1696 no. of Water harvesting structures and 4432 no. of Small water bodies have been created with creation of 11500 ha of life saving irrigation .there has been crop diversification of Paddy, cotton, groundnut, small millet, wheat, pulses in 4375 ha of land. HYV of paddy and pulses have been introduced in 3931 ha of land. Tuber crops like Cassava, Yam. EFY, Sweet Potato have been promoted in 121 ha of the back yard as well as farmyard. 3400 ha of land has been planted with Miscellaneous Trees the Saplings (Cassia, Accasia, Sirish, Subabool, Glaricidia, Karanja, Gambhari, Sisso, etc.) of which were raised in the community lands. Horticulture plantation has been taken in 5403 ha. of land. Fruit plants such as Mango, Guava, papaya, lemon, drumstick etc. have been planted in back yard as well as in compact area.

### **SHG / Micro Finance**

The program promoted 5189 SHGs with total membership at about 65000 and savings mobilization of nearly 464 lakhs. Over 40% of the groups are linked Bank and other FIs. As many as 4616 Users Groups are found formed under the program with enrolment of 33787 members. The WDF has contributed as much as 314 lakhs to the groups in the form of seeds capital/RF.

| Sl. No.      | Name of the Districts | Total No. of SHGs | Members Enrolled in No. | Saving Mobilised in Lakhs | SHGs Linked to Banks in No. | Total No. UGs | Members Enrolled in No. | WDF Contribution in Lakhs |
|--------------|-----------------------|-------------------|-------------------------|---------------------------|-----------------------------|---------------|-------------------------|---------------------------|
| 1            | Bolangir              | 2636              | 32934                   | 215.3                     | 507                         | 2383          | 16486                   | 185.04                    |
| 2            | Nuapada               | 745               | 8863                    | 67.97                     | 415                         | 559           | 5411                    | 59.31                     |
| 3            | Bargarh               | 442               | 6083                    | 57.71                     | 361                         | 396           | 2870                    | 16.28                     |
| 4            | Kalahandi             | 1366              | 17040                   | 122.92                    | 729                         | 1278          | 9020                    | 57.04                     |
| <b>Total</b> |                       | <b>5189</b>       | <b>64920</b>            | <b>463.9</b>              | <b>2012</b>                 | <b>4616</b>   | <b>33787</b>            | <b>317.67</b>             |

Furthermore, there has been increased access to Common Property Resources like village ponds, wastelands, and plantations. Some 274 SHGs have leased in Panchayat ponds for aquaculture, 250 SHGs are using project created water-bodies for aquaculture and 244 SHGs are running Public Distribution Systems (PDS) and other government schemes such as Midday Meals (MDM).

### **Policy changes and replication**

Project lobbying and advocacy have led to the removal of policy and practice constraints in sectoral policies related with land entitlements and other issues. Evidence of impact of these pro-poor changes in fostering and strengthening livelihoods of the poor reflect on the efficacy of the project. Large-scale replication of project approaches and best practices has been reported. WORLP approaches are being replicated in almost 387 watersheds in the WORLP districts and 460 watersheds in non-WORLP districts of Orissa state.

## **CHAPTER – IV**

### **LIVELIHOODS IMPACTS**

Impact on livelihoods has been measured in terms of changes in various indicators due to program Implementation in the sample villages. Impacts are measured across different social groups in order to examine the distributional aspects of the impacts. The Impact indicators related to increased access to the livelihoods assets are grouped under physical, economic, social, and ecological capital. Impacts of enhanced livelihood activities are measured in terms of changes in production system, reduced vulnerability etc. Changes in income, Food Security, Health, Empowerment etc are the measurable of livelihoods impacts.

#### **4.1: ACCESS TO LIVELIHOOD ASSETS/CAPITAL**

##### **4.1.1 PHYSICAL ASSETS**

Increased access to physical assets in project villages due to program implementation is evident. Tractors/Power Tillers, Diesel Pump sets, KB Pumps, Sprayers, Threshers etc are the various agricultural implements available more in the project villages than in the non project villages. There are 255 sprayers, 112 pump sets and 23 rice/oil mills in the project villages against 120, 102 and 13 respectively in the non-project villages. There are however 37 tractors in the non-project villages against 20 in the project villages. The tractors in the non-project village are privately owned by the social upper castes and are used mainly for non-agricultural purposes.

Most of the non-project villages have been Panchayat Headquarter villages not covered by the projects because the headquarter villages are relatively large with predominance of general population. It is the general population who are the owners of most of the agricultural implements and agro-based mills. Narla block of Kalahandi district, Patnagarh and Khaparakhol blocks of Bolangir district have larger number of such implements than in other blocks.

Community ware Houses (11 no.), Community Halls (13 no.), Drying Yards (5 no.) Threshing Yards (3 no.), Village Tanks (15) etc are the various community infrastructures created in the watershed villages under the projects support. One out of every four-project village has a grain bank. There is one project village Larke in Komna block that has as many as 7-grain banks with grain in store over 350 quintals. In sharp contrast, a small proportion (7.5%) of the non-project villages have grain banks in functional status. The PDS is located in 60% of the Project villages compared to 33% of the non-project villages. The women SHGs run most of the PDSs in the project villages. These assets bear the potential to contribute to enhanced productivity in agriculture. Almost all the project villages have facilities like Primary School, ASHA, Angan Wadi Centre within the village. Compared to non-project villages, the project villages have a better status in respect of all these type of facilities.

The projects provide for shelter houses for the destitute/homeless under the livelihood support/grant funds. Five samples HHs (2 SC & 3 ST) reported receiving the grant of Rs. 7,000-9000/-each for construction of shelter house. As many as 17 households (ST-9, SC-6, OBC-2) in the project villages are found allotted house under the Indira Avas Yojana against 11(ST-5, SC-4, OC-2) in the non-project villages. The beneficiaries of the program have been largely the ST followed by the SC households. House is a basic amenity commonly possessed by all the households. Over 2/3<sup>rd</sup> of the houses are Kutcha made of clay and burnt brick both in the project (69%) and non-project villages (71%). Rests of the houses in the project villages are either Pucca (4%) or Semi Pucca (28%), the figures for non-project villages' beings 5% and 24% respectively. About one fourth of the houses in the project villages are electrified against 15% of the non-project villages.

People in the project villages have increased access to Livestock like draught bullocks, milchy cows, goats, sheep, pigs, chicks, etc. that have been supplied both individually and in group. As many as 265 out of 400 households surveyed in the project villages have livestock against 228 in the non-project villages. The average value of the livestock for the project villages is arrived at Rs. 7743/- against Rs. 7474/- for the non-project villages. Apart from poultry, over 85% of the households within watershed villages possess goat/sheep and cattle.

Livestock development has been undertaken as part of livelihood enhancement. One of the CLWs has been trained to provide timely health care services. The District Animal Husbandry Department is found collaborating with PIA/FNGO to provide immunization and other health care services.

Under the project support, mechanical measures of soil conservation structures such as Earthen Bonding and Stone Bonding (5600 RMT), Gully Control Structures (310 nos), Continuous Contour Trenches (3500 RMT) and Staggered Contour Trenches (1200 RMT) have been taken up in the sample project villages. Over 150 ha of non-arable land have been transformed into arable land.

**Table No – 4.1.1: Distribution of Households by House Type**

| Caste Group         | Pucca      | Semi pucca  | Kutchra     | Total        |
|---------------------|------------|-------------|-------------|--------------|
| Project Village     |            |             |             |              |
| SC                  | 25         | 156         | 476         | <b>657</b>   |
| ST                  | 39         | 882         | 2204        | <b>3125</b>  |
| OBC/OC              | 144        | 558         | 1260        | <b>1962</b>  |
| Total               | <b>208</b> | <b>1596</b> | <b>3940</b> | <b>5744</b>  |
| %                   | <b>3.6</b> | <b>27.8</b> | <b>68.6</b> | <b>100.0</b> |
| Non-Project Village |            |             |             |              |
| SC                  | 49         | 177         | 953         | <b>1179</b>  |
| ST                  | 124        | 744         | 2208        | <b>3076</b>  |
| OBC/OC              | 141        | 561         | 1282        | <b>1984</b>  |
| Total               | <b>314</b> | <b>1482</b> | <b>4443</b> | <b>6239</b>  |
| %                   | <b>5.0</b> | <b>23.8</b> | <b>71.2</b> | <b>100.0</b> |

**Table No – 4.1.2: Distribution of sample HHs by House Type**

| Village Type        | Caste | Pucca      | Semi-Pucca  | Kutchra     | Total        |
|---------------------|-------|------------|-------------|-------------|--------------|
| Project Village     | SC    | 8          | 10          | 73          | 91           |
|                     | ST    | 8          | 43          | 196         | 247          |
|                     | OBC   | 7          | 12          | 39          | 58           |
|                     | OC    | 1          | 2           | 1           | 4            |
| <b>Total</b>        |       | <b>24</b>  | <b>67</b>   | <b>309</b>  | <b>400</b>   |
| <b>%</b>            |       | <b>6.0</b> | <b>16.8</b> | <b>77.3</b> | <b>100.0</b> |
| Non-Project Village | SC    | 6          | 13          | 86          | 105          |
|                     | ST    | 11         | 27          | 197         | 235          |
|                     | OBC   | 6          | 9           | 42          | 57           |
|                     | OC    | 2          | 1           |             | 3            |
| <b>Total</b>        |       | <b>25</b>  | <b>50</b>   | <b>325</b>  | <b>400</b>   |
| <b>%</b>            |       | <b>6.3</b> | <b>12.5</b> | <b>81.3</b> | <b>100.0</b> |

**Table No – 4.1.3: Distribution of Sample HHs by House Electrification**

| Village Type        | Caste | Yes         | No          | Total        |
|---------------------|-------|-------------|-------------|--------------|
| Project Village     | SC    | 25          | 66          | 91           |
|                     | ST    | 50          | 197         | 247          |
|                     | OBC   | 17          | 41          | 58           |
|                     | OC    | 2           | 2           | 4            |
| <b>Total</b>        |       | <b>94</b>   | <b>306</b>  | <b>400</b>   |
| <b>%</b>            |       | <b>23.5</b> | <b>76.5</b> | <b>100.0</b> |
| Non-Project Village | SC    | 15          | 90          | 105          |
|                     | ST    | 28          | 207         | 235          |
|                     | OBC   | 15          | 42          | 57           |
|                     | OC    | 2           | 1           | 3            |
| <b>Total</b>        |       | <b>60</b>   | <b>340</b>  | <b>400</b>   |
| <b>%</b>            |       | <b>15.0</b> | <b>85.0</b> | <b>100.0</b> |

**Table No – 4.1.4: Distribution of Agricultural Implements in village by Village Type**

| Name of Blocks | Non-Project Village |            |            |           |            | Project Village |            |            |           |            |
|----------------|---------------------|------------|------------|-----------|------------|-----------------|------------|------------|-----------|------------|
|                | Tractor             | Sprayer    | Pumpset    | Mills     | Total      | Tractor         | Sprayer    | Pumpset    | Mills     | Total      |
| Bandhugaon     | 0                   | 1          | 0          | 0         | 1          | 4               | 16         | 7          | 2         | 29         |
| Boden          | 0                   | 0          | 1          | 0         | 1          | 2               | 15         | 4          | 9         | 30         |
| Khaparakhhol   | 2                   | 13         | 12         | 1         | 28         | 5               | 90         | 18         | 7         | 120        |
| Komna          | 4                   | 1          | 24         | 2         | 31         | 1               | 40         | 25         | 1         | 67         |
| Laxmipur       | 3                   | 3          | 0          | 0         | 6          | 1               | 11         | 8          | 0         | 20         |
| Narla          | 8                   | 35         | 36         | 3         | 82         | 4               | 68         | 30         | 1         | 103        |
| Patnagarh      | 11                  | 66         | 27         | 5         | 109        | 1               | 11         | 20         | 1         | 33         |
| Thuamularampur | 9                   | 1          | 2          | 2         | 14         | 2               | 4          | 0          | 2         | 8          |
| <b>Total</b>   | <b>37</b>           | <b>120</b> | <b>102</b> | <b>13</b> | <b>272</b> | <b>20</b>       | <b>255</b> | <b>112</b> | <b>23</b> | <b>410</b> |

**Table No – 4.1.5: Distribution of Average Value of Assets of Sample HHs by Caste Group**

| Type of Village     | Caste | House        | Land         | Livestock   | Electronic  | Conveyance  | Total        |
|---------------------|-------|--------------|--------------|-------------|-------------|-------------|--------------|
| Project Village     | SC    | 21143        | 40278        | 8013        | 2640        | 1384        | 21143        |
|                     | ST    | 23474        | 61028        | 7518        | 2789        | 1853        | 23474        |
|                     | OBC   | 68190        | 104347       | 8694        | 9500        | 3881        | 68190        |
|                     | OC    | 35000        | 163500       | 2800        | 17000       | 1133        | 35000        |
| <b>Total</b>        |       | <b>29543</b> | <b>63613</b> | <b>7743</b> | <b>5028</b> | <b>2132</b> | <b>29543</b> |
| Non-Project Village | SC    | 20343        | 29488        | 5992        | 3614        | 2352        | 20343        |
|                     | ST    | 20332        | 45759        | 7469        | 6150        | 4713        | 20332        |
|                     | OBC   | 31596        | 100561       | 9156        | 8600        | 4962        | 31596        |
|                     | OC    | 23333        | 223333       | 13833       | 5000        | 42500       | 23333        |
| <b>Total</b>        |       | <b>21963</b> | <b>50629</b> | <b>7474</b> | <b>6029</b> | <b>4466</b> | <b>21963</b> |

**Table No – 4.1.6: Distribution of Sample HHs by Value of Livestock Possessed**

| Type of Village     | Caste | <= 1000    | 1000-2500  | Above 2500  | Total        |
|---------------------|-------|------------|------------|-------------|--------------|
| Project Village     | SC    | 9          | 5          | 33          | 47           |
|                     | ST    | 14         | 6          | 162         | 182          |
|                     | OBC   | 2          | 1          | 32          | 35           |
|                     | OC    | 0          | 0          | 1           | 1            |
| <b>Total</b>        |       | <b>25</b>  | <b>12</b>  | <b>228</b>  | <b>265</b>   |
| <b>%</b>            |       | <b>9.4</b> | <b>4.5</b> | <b>86.0</b> | <b>100.0</b> |
| Non-Project Village | SC    | 8          | 5          | 38          | 51           |
|                     | ST    | 13         | 9          | 118         | 140          |
|                     | OBC   | 1          | 2          | 31          | 34           |
|                     | OC    | 0          | 1          | 2           | 3            |
| <b>2 Total</b>      |       | <b>22</b>  | <b>17</b>  | <b>189</b>  | <b>228</b>   |
| <b>%</b>            |       | <b>9.6</b> | <b>7.5</b> | <b>82.9</b> | <b>100.0</b> |

**Table No – 4.1.7:Distribution of sample Villages by Facilities Within Village**

| Facilities            | Non-Project Village | %    | Project Village | %    | Total Villages |
|-----------------------|---------------------|------|-----------------|------|----------------|
| Village Tank/Pond     | 4                   | 10.0 | 15              | 37.5 | 40             |
| Grain Bank            | 3                   | 7.5  | 10              | 25.0 | 40             |
| Storage House         | 1                   | 2.5  | 11              | 27.5 | 40             |
| Community Hall        | 4                   | 10.0 | 13              | 32.5 | 40             |
| Fair price shop (PDS) | 13                  | 32.5 | 24              | 60.0 | 40             |

**Table No – 4.1.8:Distribution of Sample Villages by Soil and water conservation structures**

| Village Type         | Earthen Bonding and Stone Bonding | Gully Control Structures | Continuous Contour Trenches | Staggered Contour Trenches |
|----------------------|-----------------------------------|--------------------------|-----------------------------|----------------------------|
| Project Villages     | 5600                              | 310                      | 3500                        | 1200                       |
| Non Project Villages | 1700                              | 130                      | 1550                        | 310                        |

**4.1.2:NATURAL CAPITAL**

The project villages have greater access to natural resources than the non-project villages. A large number of water resources such as construction/renovation of dug wells/ring wells, construction/renovation tanks, construction/renovation farm ponds, percolation tanks; WHS, etc. have been created in the villages having watersheds. There are 174 WHS, 365 dug wells and 327 farm ponds constructed in the project villages compared to 50 WHS, 135 dug wells and 46 farm ponds in the non-project villages. Under the programs support about 6,550 RMT of water channels, both earthen and concrete, have been constructed to irrigate the land. Because of these water resources large areas in the project villages are under irrigation. During kharif over 2700 acres of land in the project villages are found irrigated against 544 acres in the non-project villages. During Rabi 1718 acres of land are irrigated compared to 245 acres in the non-project villages.



Mixed plantations have been undertaken in 140 acres of community land in project villages against 45 acres in the non-project villages. Larger proportions of land are found allocated to Avenue plantation (15.5 KM), Farm Forestry (4.5 Km) and Orchard development (175 acre) in the project villages than in the non-project villages.

Common Property Resources such as govt. lands, water bodies and forests play vital role in the livelihoods of rural communities. Various development initiatives such as plantations, pasture development, water-harvesting tanks, check dams, etc. have been undertaken on the common lands under the Programs. Community tanks are being largely used for pisciculture by the SHGs indicating increased access to CPR. In Kanigaon of Bandhugaon block, the women SHGs constructed two community tanks of Rs. 2.5 lakhs each by engaging only the women folk of the village. The tanks are being used for pisciculture by the two SHGs of the village.

**Table No – 4.1.9: Distribution of Irrigation Facilities in Sample Villages by Village Type**

| Name of Blocks | Non-Project Village |                    |           | Project Village |                    |            |
|----------------|---------------------|--------------------|-----------|-----------------|--------------------|------------|
|                | WHS                 | Dug well/Ring well | Farm Pond | WHS             | Dug well/ring well | Farm Pond  |
| Bandhugaon     | 0                   | 0                  | 0         | 6               | 0                  | 1          |
| Boden          | 5                   | 7                  | 7         | 16              | 15                 | 54         |
| Khaparakhhol   | 12                  | 6                  | 11        | 47              | 81                 | 102        |
| Komna          | 11                  | 12                 | 8         | 36              | 152                | 91         |
| Laxmipur       | 1                   | 0                  | 0         | 8               | 0                  | 11         |
| Narla          | 6                   | 33                 | 10        | 1               | 47                 | 39         |
| Patnagarh      | 14                  | 77                 | 10        | 58              | 66                 | 29         |
| Thuamularampur | 1                   | 0                  | 0         | 2               | 4                  | 0          |
| <b>Total</b>   | <b>50</b>           | <b>135</b>         | <b>46</b> | <b>174</b>      | <b>365</b>         | <b>327</b> |

**Table No – 4.1.10: Distribution of Area Irrigated (in Acre) in Sample Villages by Source**

| Irrigation Structures | Project Village |             |            |              | Non-Project Village |             |             |              |
|-----------------------|-----------------|-------------|------------|--------------|---------------------|-------------|-------------|--------------|
|                       | Kharif          | Rabi        | Summer     | Total        | Kharif              | Rabi        | Summer      | Total        |
| Whs                   | 693.5           | 220         | 0          | 1033.5       | 70                  | 15          | 0           | 85           |
| Dugwell               | 153.5           | 85          | 0          | 238.5        | 8                   | 0           | 0           | 8            |
| LIP                   | 953             | 788         | 0          | 1741         | 50                  | 30          | 0           | 80           |
| Stream                | 866.5           | 625         | 70         | 1561.5       | 416                 | 200         | 200         | 816          |
| Farm Pond             | 62.5            | 0           | 0          | 62.5         | 0                   | 0           | 0           | 0            |
| <b>Total</b>          | <b>2729</b>     | <b>1718</b> | <b>190</b> | <b>4637</b>  | <b>544</b>          | <b>245</b>  | <b>200</b>  | <b>989</b>   |
| <b>%</b>              | <b>58.9</b>     | <b>37.0</b> | <b>4.1</b> | <b>100.0</b> | <b>55.0</b>         | <b>24.8</b> | <b>20.2</b> | <b>100.0</b> |

**Table No – 4.1.11:Distribution of Sample Villages by plantation**

| <b>Village Type</b>  | <b>Block plantation (Acre)</b> | <b>Avenue plantation (Km)</b> | <b>Bund Plantation/ Farm Forestry (Km)</b> | <b>Orchard development (Acre)</b> |
|----------------------|--------------------------------|-------------------------------|--|-----------------------------------|
| Project Villages     | 150                            | 15.5                          | 4.5  | 175                               |
| Non Project Villages | 45                             | 1.5                           | -  | -                                 |

### **4.1.3:FINANCIAL ASSETS**

Access to financial services and credit of the households in the project villages has improved. SHGs have been the sole mechanism through which the projects tried to improve access to financial services and credit. Nearly 2/3<sup>rd</sup> of the households in the project villages reported membership in a self-help group. A higher 261 households in the project villages report savings in the SHGs than 178 in the non-project villages. The no. of households saving in the banks in the project villages(29) is also higher than that of the non-project villages(14). The average savings in the SHG amounts to Rs.1097 against Rs.946 of the banks.

Internal lending among the members in the SHGs is evident from the fact that from among 145 borrowers in the project villages, as many as 82 households report borrowing from the SHG. The average amount borrowed from the SHG is arrived at Rs.1020. Bank has been an important source of borrowing, 27 households in the project villages report borrowing from the bank against 12 in the non-project villages. Borrowing from informal sources is also significant. As many as 36 households in the project villages report borrowing from the labour contractors, traders etc against 18 in the non-project villages. The cotton growers in Khaparakhola and Patnagarh blocks of Bolangir are seen borrowing from the Ambika Cotton Mill of Bolangir for cotton crop cultivation that they pay off by selling the produce to the mill. The Banks have the highest loan outstanding of Rs.1946 followed by informal sources (Rs.1433) and SHGs (Rs.1198).

**Table No – 4.1.12: Distribution of Sample HHs by Source of Savings**

| Village Type        | Caste | Bank      | SHG        | Others   | Total      |
|---------------------|-------|-----------|------------|----------|------------|
| Project Village     | SC    | 10        | 64         |          | 74         |
|                     | ST    | 12        | 153        | 8        | 173        |
|                     | OBC   | 5         | 41         |          | 46         |
|                     | OC    | 2         | 3          |          | 5          |
| <b>Total</b>        |       | <b>29</b> | <b>261</b> | <b>8</b> | <b>298</b> |
| Non-Project Village | SC    | 4         | 51         | 4        | 59         |
|                     | ST    | 6         | 98         | 3        | 107        |
|                     | OBC   | 4         | 28         | 2        | 34         |
|                     | OC    |           | 1          |          | 1          |
| <b>Total</b>        |       | <b>14</b> | <b>178</b> | <b>9</b> | <b>201</b> |

**Table No – 4.1.13: Distribution of Average Savings of Sample HHs by Source**

| Village Type        | Caste        | Bank        | SHG         | Other      | Total       |
|---------------------|--------------|-------------|-------------|------------|-------------|
| Project Village     | SC           | 657         | 1055        | 0          | 1712        |
|                     | ST           | 197         | 1059        | 39         | 1295        |
|                     | OBC          | 4491        | 1309        | 0          | 5801        |
|                     | OC           | 2400        | 1320        | 0          | 3720        |
|                     | <b>Total</b> | <b>946</b>  | <b>1097</b> | <b>24</b>  | <b>2067</b> |
| Non-Project Village | SC           | 1190        | 891         | 580        | 2661        |
|                     | ST           | 1427        | 700         | 127        | 2254        |
|                     | OBC          | 1188        | 750         | 1930       | 3867        |
|                     | OC           | 0           | 2000        | 0          | 2000        |
|                     | <b>Total</b> | <b>1320</b> | <b>767</b>  | <b>502</b> | <b>2589</b> |

**Table No – 4.1.14: Distribution of Average Borrowings of Sample HHs by Sources**

| 6                   | 9            | Bank        | SHG         | Other       |
|---------------------|--------------|-------------|-------------|-------------|
| Project Village     | SC           | 5681        | 1140        | 2747        |
|                     | ST           | 471         | 1280        | 1202        |
|                     | OBC          | 1897        | 1020        | 448         |
|                     | OC           | 8750        | 0           | 0           |
|                     | <b>TOTAL</b> | <b>1946</b> | <b>1198</b> | <b>1433</b> |
| Non-Project Village | SC           | 333         | 838         | 1905        |
|                     | ST           | 119         | 565         | 698         |
|                     | OBC          | 9123        | 868         | 526         |
|                     | OC           | 16667       | 3333        | 0           |
|                     | <b>TOTAL</b> | <b>1583</b> | <b>701</b>  | <b>985</b>  |

**Table No – 4.1.15: Distribution of Sample HHs by Source Of Borrowing**

| Village Type        | Caste | Bank      | SHG       | Others    | Total      |
|---------------------|-------|-----------|-----------|-----------|------------|
| Project Village     | SC    | 8         | 24        | 15        | 47         |
|                     | ST    | 11        | 46        | 18        | 75         |
|                     | OBC   | 6         | 12        | 3         | 21         |
|                     | OC    | 2         |           |           | 2          |
| <b>Total</b>        |       | <b>27</b> | <b>82</b> | <b>36</b> | <b>145</b> |
| Non-Project Village | SC    | 4         | 16        | 8         | 28         |
|                     | ST    | 3         | 21        | 9         | 33         |
|                     | OBC   | 4         | 11        | 1         | 16         |
|                     | OC    | 1         | 1         |           | 2          |
| <b>Total</b>        |       | <b>12</b> | <b>49</b> | <b>18</b> | <b>79</b>  |

**4.1.4: SOCIAL CAPITAL**

The Project Implementing Agencies (PIA)/Facilitating NGOs (FNGO) are responsible for creation and capacity development of the village level organisations like Watershed Association (WA), Watershed Development Committee (WC), VDC/MLSC, SHGs, UGs, CIGs etc which are found formed representing all sections of villagers. These constitute the social capital for the communities. There are 311 SHGs formed in all the 40 project villages against 226 in the non-project villages. The grain banks are found established in 10 out of 40 project villages against 3 in the non-project villages. As many as 22 project villages report having VSS compared to a low 6 of the non project villages. Membership in the Users Groups is reported by 121 households in the project villages against a 4 households in the non-project villages.

In Ginijkhal village of Bandhugaon block there are nine SHGs promoted by OTELP and ICDS. As many as 7 groups promoted under OTELP have received seeds capital of Rs. 5000/- each. Two of the groups have received the grant fund of Rs. 15,000/- each for cultivation. Under the SGSY, Indramani SHG has been granted Rs. 2.5 lakhs that includes a subsidy component of Rs. 1.25 lakhs on sheep rearing scheme. Two more groups promoted by ICDS namely Ranidurga and Sunardumbar are also found linked to SGSY. Each group has received Rs. 2.5 lakhs for goat rearing.

In Ramjiput village of Bandhugaon block, OTELP supports 6 out of 11 SHGs in the village. All the six groups have received seed capital of Rs. 5,000/- each. Sankar Mahadevan SHG is linked to the SGSY under which the group has received Rs. 2.5

lakhs for sheep rearing. The group is managing the PDS outlet in the village by distributing kerosene. The Pippedy Danga SHG of the village is managing the MDM programme of the UGME School in the village. The group has 11 members who regularly save Rs. 100 per month. Besides Rs. 20,000/- in deposit the group is found inter lending Rs. 12,000/- @ 36% to the members and @ 48% to the non-members of the village.

**Table No – 4.1.16: Distribution of sample Villages by no. Of POs**

| PO         | Project Village |           | Non-Project Village |           |
|------------|-----------------|-----------|---------------------|-----------|
|            | No of villages  | No of POs | No of villages      | No of POs |
| SHGs       | 40              | 311       | 40                  | 226       |
| VSS        | 22              | 22        | 6                   | 6         |
| Grain Bank | 11              | 21        | 2                   | 2         |

**Table No – 4.1.17: Distribution of Sample HHs by membership in UGs**

| Village Type        | Caste | 1          | Total      |
|---------------------|-------|------------|------------|
| ProjectVillage      | SC    | 24         | 24         |
|                     | ST    | 70         | 70         |
|                     | OBC   | 27         | 27         |
| <b>Total</b>        |       | <b>121</b> | <b>121</b> |
| Non-Project Village | SC    | 1          | 1          |
|                     | ST    | 3          | 3          |
|                     | OBC   | 0          | 0          |
| <b>Total</b>        |       | <b>4</b>   | <b>4</b>   |

**Table No – 4.1.18: Distribution of Sample HHs by Membership in SHG**

| Village Type        | Caste | 1          | Total      |
|---------------------|-------|------------|------------|
| Project Village     | SC    | 64         | 64         |
|                     | ST    | 153        | 153        |
|                     | OBC   | 41         | 41         |
|                     | OC    | 3          | 3          |
| <b>Total</b>        |       | <b>261</b> | <b>261</b> |
| Non-Project Village | SC    | 51         | 51         |
|                     | ST    | 98         | 98         |
|                     | OBC   | 28         | 28         |
|                     | OC    | 1          | 1          |
| <b>Total</b>        |       | <b>178</b> | <b>178</b> |

#### **4.1.5: HUMAN CAPITAL**

The ST and SC population who are educationally backward dominate the project area. 34% of the populations in the project villages are literate against 31% in the non-project villages. Keeping this in view, the PIA/FNGOs have organized series of training in various topics as Land and water management, Agriculture/Horticulture, Pisciculture / Animal Husbandry, Entrepreneurship Development, Leadership/Gender/PR/SHG/Rights to strengthen program management .A little less than half (194) of the sample households report being trained in at least one of the topics.

High mortality, morbidity, malnutrition and inadequate water & sanitation characterize the project area. Prevalence of malaria, diarrhea and respiratory infections is quite high. Poor quality of drinking water is the main cause of diarrhea. Upper Respiratory Tract Infections are caused due to indoor smoke. Excess fluoride content is reported in the sample villages of Nuapada district. The distribution of medicines for common ailments from the DDC is erratic due to irregular supply. There is hardly any village health committee (VHC) in the villages to look after promotive and preventive health. Most of the deliveries are conducted at home without trained attendance at delivery. Difficulties in arranging transportation, high cost of care etc are the main constraints in the promotion of institutional deliveries. Yet over 44% of the births in the project villages have taken place in hospitals against 29% in the non-project villages.

The predominant source of drinking water has been hand pumps both in the project villages (27) and in the non-project villages (30) as well. Some of the MWSs in Patnagarh, Thuamul Rampur blocks have constructed sanitary latrines and provided piped water supply to the households in collaboration of Gram Vikash, a FNGO. The use of latrines is limited to 9% households in the project villages against 3% in the non-project villages. Over one fourth (27%) of the households in the project villages report access to tap water against 17% in the non-project villages. The improved sanitation in the project villages is evident from the fact that Nearly 2/3<sup>rd</sup> of the households in the project villages report animal sheds detached from the house against 46% in the non-project villages.

**Table No – 4.1.19 : Distribution of Sample HHs by Participation In Training**

| Caste  | ASCO      | CPSW      | CYSD     | GV        | LWS       | Total     |
|--|-----------|-----------|----------|-----------|-----------|-----------|
| <b>Land and water management</b>             |           |           |          |           |           |           |
| SC   | 5         | 3         |          |           |           | 8         |
| ST   | 7         | 3         | 1        | 7         | 7         | 25        |
| OBC  | 4         | 3         |          | 2         | 4         | 13        |
| <b>Total</b>                                 | <b>16</b> | <b>9</b>  | <b>1</b> | <b>9</b>  | <b>11</b> | <b>46</b> |
| <b>Agriculture/Horticulture</b>              |           |           |          |           |           |           |
| SC   | 6         | 3         |          |           |           | 10        |
| ST   | 11        | 4         | 3        | 12        | 11        | 41        |
| OBC  | 7         | 3         |          | 1         | 4         | 15        |
| <b>Total</b>                                 | <b>24</b> | <b>10</b> | <b>3</b> | <b>13</b> | <b>15</b> | <b>66</b> |
| <b>Pisciculture / Animal Husbandry</b>       |           |           |          |           |           |           |
| SC   | 2         | 3         | 1        |           | 2         | 8         |
| ST   | 6         | 1         | 1        | 1         | 7         | 16        |
| OBC  | 1         |           |          |           | 1         | 2         |
| <b>Total</b>                                 | <b>9</b>  | <b>4</b>  | <b>2</b> | <b>1</b>  | <b>10</b> | <b>26</b> |
| <b>Entrepreneurship Development Program</b>  |           |           |          |           |           |           |
| SC   | 4         | 4         | 1        |           |           | 9         |
| ST   | 3         |           | 3        | 7         | 8         | 21        |
| OBC  | 4         |           |          |           | 1         | 5         |
| <b>Total</b>                                 | <b>11</b> | <b>4</b>  | <b>4</b> | <b>7</b>  | <b>9</b>  | <b>35</b> |
| <b>Leadership/Gender/PR/SHG/Rights Based</b> |           |           |          |           |           |           |
| SC   | 1         | 6         |          | 1         |           | 8         |
| ST   | 1         |           | 1        | 8         |           | 10        |
| OBC  | 2         |           |          |           | 1         | 3         |
| <b>Total</b>                                 | <b>4</b>  | <b>6</b>  | <b>1</b> | <b>9</b>  | <b>1</b>  | <b>21</b> |

**Table No – 4.1.20: Distribution of sample HH Members by Education**

| Type of Village     | Caste | Illiterate  | Literate    | Primary    | Middle     | High school | Higher     | Total        |
|---------------------|-------|-------------|-------------|------------|------------|-------------|------------|--------------|
| Project Village     | SC    | 309         | 92          | 22         | 15         | 7           | 3          | 448          |
|                     | ST    | 840         | 285         | 36         | 22         | 12          | 7          | 1202         |
|                     | OBC   | 135         | 78          | 42         | 15         | 9           | 6          | 285          |
|                     | OC    | 9           | 6           | 5          | 3          | 3           | 2          | 28           |
| <b>Total</b>        |       | <b>1293</b> | <b>461</b>  | <b>105</b> | <b>55</b>  | <b>31</b>   | <b>18</b>  | <b>1963</b>  |
| <b>%</b>            |       | <b>65.9</b> | <b>23.5</b> | <b>5.3</b> | <b>2.8</b> | <b>1.6</b>  | <b>0.9</b> | <b>100.0</b> |
| Non-Project Village | SC    | 360         | 102         | 27         | 15         | 11          | 7          | 522          |
|                     | ST    | 805         | 204         | 35         | 18         | 12          | 5          | 1079         |
|                     | OBC   | 134         | 82          | 32         | 15         | 9           | 6          | 278          |
|                     | OC    | 5           | 3           | 3          | 2          | 2           | 1          | 16           |
| <b>Total</b>        |       | <b>1304</b> | <b>391</b>  | <b>97</b>  | <b>50</b>  | <b>34</b>   | <b>19</b>  | <b>1895</b>  |
| <b>%</b>            |       | <b>68.8</b> | <b>20.6</b> | <b>5.1</b> | <b>2.6</b> | <b>1.8</b>  | <b>1.0</b> | <b>100.0</b> |

**Table No – 4.1.21: Distribution of Sample HHs by Place of defecation**

| Village Type        | Caste | Open Field  | IHL        | Other      | Total        |
|---------------------|-------|-------------|------------|------------|--------------|
| Project Village     | SC    | 81          | 10         |            | 91           |
|                     | ST    | 228         | 16         | 3          | 247          |
|                     | OBC   | 50          | 7          | 1          | 58           |
|                     | OC    | 3           | 1          |            | 4            |
| <b>Total</b>        |       | <b>362</b>  | <b>34</b>  | <b>4</b>   | <b>400</b>   |
| <b>%</b>            |       | <b>90.5</b> | <b>8.5</b> | <b>1.0</b> | <b>100.0</b> |
| Non-Project Village | SC    | 105         |            |            | 105          |
|                     | ST    | 227         | 5          | 3          | 235          |
|                     | OBC   | 52          | 5          |            | 57           |
|                     | OC    | 2           | 1          |            | 3            |
| <b>Total</b>        |       | <b>386</b>  | <b>11</b>  | <b>3</b>   | <b>400</b>   |
| <b>%</b>            |       | <b>96.5</b> | <b>2.8</b> | <b>0.8</b> | <b>100.0</b> |

**Table No – 4.1.22: Distribution of sample HHs by Source of Drinking Water**

| Village Type        | Caste | Open well  | Tube well   | Chuan      | other       | Total        |
|---------------------|-------|------------|-------------|------------|-------------|--------------|
| Project Village     | SC    | 4          | 54          | 1          | 32          | 91           |
|                     | ST    | 6          | 174         | 3          | 64          | 247          |
|                     | OBC   |            | 44          | 2          | 12          | 58           |
|                     | OC    |            | 4           |            |             | 4            |
| <b>Total</b>        |       | <b>10</b>  | <b>276</b>  | <b>6</b>   | <b>108</b>  | <b>400</b>   |
| <b>%</b>            |       | <b>2.5</b> | <b>69.0</b> | <b>1.5</b> | <b>27.0</b> | <b>100.0</b> |
| Non-Project Village | SC    | 2          | 84          |            | 19          | 105          |
|                     | ST    | 3          | 188         | 4          | 40          | 235          |
|                     | OBC   | 1          | 46          |            | 10          | 57           |
|                     | OC    |            | 3           |            |             | 3            |
| <b>Total</b>        |       | <b>6</b>   | <b>321</b>  | <b>4</b>   | <b>69</b>   | <b>400</b>   |
| <b>%</b>            |       | <b>1.5</b> | <b>80.3</b> | <b>1.0</b> | <b>17.3</b> | <b>100.0</b> |

**Table No – 4.1.23: Distribution of Sample Villages by Predominant Source of Drinking Water**

| Source       | Non-Project Village | Project Village | Total     |
|--------------|---------------------|-----------------|-----------|
| Open Well    | 2                   | 4               | 6         |
| Tube Well    | 30                  | 27              | 57        |
| Chua         | 1                   | 2               | 3         |
| Stream       | 2                   | 2               | 4         |
| Tap          | 5                   | 5               | 10        |
| <b>Total</b> | <b>40</b>           | <b>40</b>       | <b>80</b> |



**Table No – 4.1.24: Distribution of Sample HHs by Location of Animal Shed**

| Village Type        | Caste | Attached    | Detached    | NA         | Total        |
|---------------------|-------|-------------|-------------|------------|--------------|
| Project Village     | SC    | 20          | 18          |            | 38           |
|                     | ST    | 52          | 105         | 2          | 159          |
|                     | OBC   | 7           | 25          |            | 32           |
|                     | OC    | 1           | 1           |            | 2            |
| <b>Total</b>        |       | <b>80</b>   | <b>149</b>  | <b>2</b>   | <b>231</b>   |
| <b>%</b>            |       | <b>34.6</b> | <b>64.5</b> | <b>0.9</b> | <b>100.0</b> |
| Non-Project Village | SC    | 23          | 19          | 1          | 43           |
|                     | ST    | 66          | 59          | 1          | 126          |
|                     | OBC   | 16          | 13          |            | 29           |
|                     | OC    | 1           | 2           |            | 3            |
| <b>Total</b>        |       | <b>106</b>  | <b>93</b>   | <b>2</b>   | <b>201</b>   |
| <b>%</b>            |       | <b>52.7</b> | <b>46.3</b> | <b>1.0</b> | <b>100.0</b> |

**Table No – 4.1.25: Distribution of Births by Place of Birth**

| Village Type        | Caste | Home        | Hospital    | Total        |
|---------------------|-------|-------------|-------------|--------------|
| Non Project Village | SC    | 12          | 4           | 16           |
|                     | ST    | 20          | 10          | 30           |
|                     | OBC   | 5           | 1           | 6            |
| <b>Total</b>        |       | <b>37</b>   | <b>15</b>   | <b>52</b>    |
| <b>%</b>            |       | <b>71.2</b> | <b>28.8</b> | <b>100.0</b> |
| Project Village     | SC    | 10          | 4           | 14           |
|                     | ST    | 13          | 14          | 27           |
|                     | OBC   | 5           | 4           | 9            |
| <b>Total</b>        |       | <b>28</b>   | <b>22</b>   | <b>50</b>    |
| <b>%</b>            |       | <b>56.0</b> | <b>44.0</b> | <b>100.0</b> |

**Table No – 4.1.26: Distribution of Births By Birth Attendant**

| Village Type        | Caste | TBA         | ANM         | Doctor      | Other       | Total        |
|---------------------|-------|-------------|-------------|-------------|-------------|--------------|
| Project Village     | SC    | 2           | 2           | 4           | 8           | 16           |
|                     | ST    | 9           | 5           | 12          | 4           | 30           |
|                     | OBC   | 3           | 1           | 1           | 1           | 6            |
| <b>Total</b>        |       | <b>14</b>   | <b>8</b>    | <b>17</b>   | <b>13</b>   | <b>52</b>    |
| <b>%</b>            |       | <b>26.9</b> | <b>15.4</b> | <b>32.7</b> | <b>25.0</b> | <b>100.0</b> |
| Non-Project Village | SC    | 2           | 1           | 5           | 6           | 14           |
|                     | ST    | 4           | 1           | 14          | 8           | 27           |
|                     | OBC   | 3           |             | 4           | 1           | 8            |
|                     | OC    |             |             | 1           |             | 1            |
| <b>Total</b>        |       | <b>9</b>    | <b>2</b>    | <b>24</b>   | <b>15</b>   | <b>50</b>    |
| <b>%</b>            |       | <b>18.0</b> | <b>4.0</b>  | <b>48.0</b> | <b>30.0</b> | <b>100.0</b> |

**Table No – 4.1.27: Distribution of Live Births in Sample Villages by Place of Birth**

| <b>Data</b> | <b>Non-Project Village</b> | <b>Project Village</b> | <b>Total</b> |
|-------------|----------------------------|------------------------|--------------|
| Home        | 332                        | 289                    | 621          |
| %           | <b>53.5</b>                | <b>46.5</b>            | <b>100</b>   |
| Hospital    | 358                        | 240                    | 598          |
| %           | <b>59.9</b>                | <b>40.1</b>            | <b>100</b>   |
| Total       | 690                        | 529                    | 1219         |

## **4.2 LIVELIHOOD ACTIVITIES: ON-FARM / OFF-FARM/NON FARM**

Land, water and forests are the three important resources for the people living in the project areas. Intensive work has been carried out in enhancing food security and improving environmental resistance to drought through effective land, water and forest management practices. The projects have supported village communities in undertaking sustainable management of natural resources through a variety of interventions in promoting land and water conservation, community forestry, agriculture and horticulture, micro enterprise development etc

Land and water management activities undertaken mainly relate to mechanical structures and agronomic practices for conservation of soil and water resources, creation of small irrigation structures like check-dam, farm pond, WHS, etc. development of the agricultural lands (contour bonding, terracing etc.), treatment of the nalas, soil conservation measures (gully control, contour trench, staggered trench, contour plantation etc.) .The Cropping system interventions like crop diversification, seed exchange, seed production, cultivation of commercial crops, irrigation development, integrated nutrient management, integrated pest management, participatory technology development and farmers' field trials etc. are the types of interventions undertaken under agricultural development to ensure higher productivity and households food security. To reduce the impact of drought, drought resistant crops and crop diversifications have also been introduced.

Non-NRM activities through livelihood initiatives for the women and disadvantaged groups have been undertaken. Various income generating activities like collection and processing of NTFP, agro –processing and value addition, village artisans, retailing of agricultural inputs and essential commodities, petty business etc. have been undertaken by the poor and landless people for livelihoods security.

### **Cropping Pattern**

Agricultural interventions are seen to have influenced both the cropping pattern and the crop variety. There has been a sharp shift from less water sensitive crops of minor millets like Ragi, Jowar Suan, Koda, Koshla, Kuiri, etc. to fine cereals like rice and wheat. The area under millets decreased particularly in project villages with simultaneous increase in paddy and cash crops.

The change in cropping pattern is evident from the area allocated to different crops. Paddy, Ragi Groundnut, Cotton, vegetables etc are the major crops grown in the sample villages. Paddy is the main crop that covers about 82% of the cultivated area followed by cotton (9%) and ragi (3%) in the project villages. The shift in the cropping pattern in favour of groundnut, cotton, and vegetables is largely limited to the villages within the watersheds. During Ravi, the highest 40% of the cultivated area of the sample households in the project villages has been allocated to paddy followed by onion (19%), vegetable (16%), pulses (14%), sun flower (5%) and Tobacco leaves (5%). However, pulses are the major crop in the non-project villages commanding one third of the land area followed by paddy (28%), cotton (22%), oilseeds (11%) and onion (5%)

Watershed has also brought a shift in favour of non-food and non-grain crops like cotton, Tobacco leaves, Lemon Grass to name a few. The cropping pattern thus has been more market oriented. Tobacco leaves is widely grown in Bandhugaon block of Koraput district. It is a three months crop from March – May. In lading village of Bandhugaon block as many as 90 households are found cultivating tobacco leaves. The Indian Tobacco Limited (ITL) that provides all inputs like seeds fertilizer and pesticides promotes the crop. With an investment of Rs. 8,000/- per acre, the crop gives a net return of Rs. 30,000 to Rs35, 000/-.

New crops as Paddy (Foundation seeds: Swarna, Khandagiri, Lalata), Maize (Deccan-109), Turmeric (Rajendra Sania), Yam (Gajendra) etc have been introduced in the watershed area under crop diversification program.

Lemon grass is also extensively cultivated in Bandhugaon block of Koraput district. It is a perennial crop of four years; every three months there is one cutting that produces 25 – 30 litres of non-edible oil normally used in preparing perfumes. Annually there are four cutting of the crop that produces about 100 – 120 litres of oil. The oil is sold at a price Rs. 400 – 500 per litre. The buyers usually come from Visakhapatna and Guntur of Andhra Pradesh and from other parts of the country as Delhi and Mumbai. One acre of lemon grass gives a net return of Rs. 30,000 – 40,000 on an investment of Rs. 15,000 per acre. To process the grass, Boiler plants are found established in most of the villages. The investment cost for establishing the plant varies from Rs. 1.5 to Rs.2.0 lakhs. The land given in lease for cultivation fetches a cash rent ranging from Rs. 4,000 – 5,000/- per acre. The local tribal are up against the cultivation as it threatens the local food security.

All the crops prior to the project implementation were of traditional varieties. But currently, most of the crops have been either local improved type or of high yielding varieties. The proportion of land area under irrigation has increased, though marginally, within the watershed villages. This, apart from crop technology has brought changes in cropping pattern and crop yield.

**Table No – 4.2.1: Distribution of Land Allocation of Sample HHs by Crops: Kharif**

| <b>Name of the crops</b> | <b>Project Village</b> | <b>%</b>     | <b>Non-Project Village</b> | <b>%</b>     |
|--------------------------|------------------------|--------------|----------------------------|--------------|
| Paddy                    | 484.83                 | <b>82.4</b>  | 455.55                     | <b>87.1</b>  |
| Cotton                   | 51.5                   | <b>8.8</b>   | 32.85                      | <b>6.3</b>   |
| Ragi                     | 18.6                   | <b>3.2</b>   | 18                         | <b>3.4</b>   |
| Pulses                   | 9.7                    | <b>1.6</b>   | 10.05                      | <b>1.9</b>   |
| Vegetable                | 10.5                   | <b>1.8</b>   | 1.5                        | <b>0.3</b>   |
| Maize                    | 9.15                   | <b>1.6</b>   | 2                          | <b>0.4</b>   |
| Ground nut               | 3.1                    | <b>0.5</b>   | 1                          | <b>0.2</b>   |
| Minor millets            | 0                      | <b>0.0</b>   | 2                          | <b>0.4</b>   |
| Others                   | 1                      | <b>0.2</b>   | 0                          | <b>0.0</b>   |
| <b>Total</b>             | <b>588.38</b>          | <b>100.0</b> | <b>522.95</b>              | <b>100.0</b> |

**Table No – 4.2.2: Distribution of Land Allocation of Sample HHs by Crops: Ravi**

| <b>Name of the Crops</b> | <b>Project Village</b> | <b>%</b>     | <b>Non-Project Village</b> | <b>%</b>     |
|--------------------------|------------------------|--------------|----------------------------|--------------|
| Paddy                    | 15                     | 40.5         | 5                          | 27.8         |
| Vegetable                | 6                      | 16.2         | 4                          | 22.2         |
| Onion                    | 7                      | 18.9         | 1                          | 5.6          |
| Sunflower                | 2                      | 5.4          | 0                          | 0.0          |
| Pulses                   | 5                      | 13.5         | 6                          | 33.3         |
| Tobacco Leaves           | 2                      | 5.4          | 0                          | 0.0          |
| Oilseeds                 | 0                      | 0.0          | 2                          | 11.1         |
| <b>Total</b>             | <b>37</b>              | <b>100.0</b> | <b>18</b>                  | <b>100.0</b> |

**Output Effect:**

Assured irrigation through water management structures as WHS, check dams, farm ponds, dug wells/ring wells have been able to augment the crop output through the “crop area effect” and the “crop yield effect”. The “crop area effect” in turn has been influenced by the “land area effect” and the “intensity of cropping effect”. Land development measures enabling cultivation of hitherto fallow lands have increased the land area under plough and thus the crop area. Irrigation has also increased cropped area through additional crops in Rabi season. This crop area effect has been subsumed in the crop intensity effect.

The output effect of the program has a direct bearing on the food self-sufficiency of the households in the watershed villages. It is observed that the level of food self-sufficiency of the households in the watershed villages has been greater than that of the households in the non-watershed villages. The food self-provisioning in months of the households in the watershed villages is averaged at 5 months, which is much greater than 3 months in the non-watershed villages.

There has been substantial step up in crop yield through a move from the traditional low productivity to improved farming system. The rise in yield is the combined effect of several mutually reinforcing factors like the use of irrigation water, the adoption of HYV seeds, the intensification of fertilizer application, the availability of extension services, the use of disease controlling pesticides and the adoption of land development

measures. Assured Irrigation however has been the enabling factor for the use of other complementary inputs, especially the chemical fertilizers.

Increased land productivity has resulted in improved livelihoods at the household level evident from the incremental net returns per acre of the important crops. All the project villages have recorded positive incremental net returns in the case of paddy and other food as well as cash crops. Incremental net returns of the crops in the non-project villages are marginal. The net incremental income per acre varies from the lowest Rs.5000 for paddy to Rs.25 for onion, Rs.30000 for lemon grass and Rs.45000 for vegetables

Multiple crop raising and higher yield have led to rise in prices of irrigated land. It is more than double than that of un-irrigated land in all the villages. The value of land both irrigated and dry lands has gone up in villages within watershed. The rate for irrigated land varies from Rs.45000 to Rs.60000 depending upon the block. The rate for un irrigated land varies as to the type of land from Rs.15000 for high land to Rs30000 for medium land and Rs.45000 for low land.

The average value of the land owned by the households in the project villages is arrived at Rs. 63,613, against Rs. 50,629/- in the non-project villages. The higher value is attributed to land and water improvement measures in the project villages.

**Table No – 4.2.3: Distribution of Crop Productivity: Irrigated crops**

| Village Type        | Paddy | Ragi | Cotton, | Groundnut | Onion | Mung |
|---------------------|-------|------|---------|-----------|-------|------|
| Project Village     | 18    | 5.5  | 12      | 10        | 60    | 4    |
| Non-Project Village | 12    | 4    | 10      | 9         | 45    | 3    |

**Table No – 4.2.4: Distribution of Crop Productivity: Non-irrigated crops**

| Village Type        | Paddy | Ragi | Cotton, | Groundnut | Onion | Mung |
|---------------------|-------|------|---------|-----------|-------|------|
| Project Village     | 12    | 3    | 8       | 6         | 50    | 3    |
| Non-Project Village | 6     | 2.5  | 4.5     | 5         | 30    | 2    |

**Table No – 4.2.5: Distribution of Yield per Acre by Crops (Non-irrigated crops)**

| Name of the crop | Yield per Acre<br>(WORLP Base line) | Current yield per<br>acre |
|------------------|-------------------------------------|---------------------------|
| Paddy            | 8.57                                | 12                        |
| Pulses           | 2.20                                | 3.0                       |
| Ground nut       | 4.00                                | 6                         |
| Cotton           | 6.00                                | 8                         |
| Millet           | 2.00                                | 3                         |
| Sun flower       | 1.50                                | 3                         |
| Gurji            | 3.00                                | 3                         |
| Onion            | 45.00                               | 50                        |

**Table No – 4.2.6: Distribution of Net return by Crops (Non-irrigated crops)**

| Crops       | Base year Net Income (Rs) | Current year Net<br>Income (Rs) |
|-------------|---------------------------|---------------------------------|
| Paddy       | 1706                      | 5000                            |
| Ground nut  | 3400                      | 9000                            |
| Cotton      | 8400                      | 10000                           |
| Vegetable   | 26400                     | 45000                           |
| Onion       | 11650                     | 25000                           |
| Sun flower  | 4950                      | 14000                           |
| Tabacco     | -                         | 25000                           |
| Lemon Grass | -                         | 30000                           |

**Intensification of Inputs**

Assured supplemental irrigation through reducing crop-risk has induced intensive use of farm inputs especially the HYV seeds and chemical fertilizers. The use of fertilizer in irrigated kharif paddy of HYV type is averaged at 95.5% kg Per acre against 43.00 kg.of the non-irrigated paddy.

The project villages are commonly using the modern farm inputs like the HYV seeds, the chemical fertilizers, bio fertilizer / pesticides .The extent of their use in the non-project villages at present has either been of occasional or casual nature.

**Table No – 4.2.7: Distribution of sample Villages by Use of Farm Inputs**

| Type of Village | Non-Project Village |              |             |            | Project Village |              |             |            |
|-----------------|---------------------|--------------|-------------|------------|-----------------|--------------|-------------|------------|
|                 | Usually             | Occasionally | Rarely      | Total      | Usually         | Occasionally | Rarely      | Total      |
| HYV             | 4                   | 27           | 9           | 40         | 20              | 18           | 2           | 40         |
| %               | <b>10</b>           | <b>67.5</b>  | <b>22.5</b> | <b>100</b> | <b>50</b>       | <b>45</b>    | <b>5</b>    | <b>100</b> |
| Chemical        | 4                   | 25           | 11          | 40         | 20              | 12           | 8           | 40         |
| %               | <b>10</b>           | <b>62.5</b>  | <b>27.5</b> | <b>100</b> | <b>50</b>       | <b>30</b>    | <b>20</b>   | <b>100</b> |
| Bio fertilizer  | 12                  | 28           | 0           | 40         | 20              | 19           | 1           | 40         |
| %               | <b>30</b>           | <b>70</b>    | <b>0</b>    | <b>100</b> | <b>50</b>       | <b>47.5</b>  | <b>2.5</b>  | <b>100</b> |
| Pesticides      | 2                   | 23           | 15          | 40         | 9               | 20           | 11          | 40         |
| %               | <b>5</b>            | <b>57.5</b>  | <b>37.5</b> | <b>100</b> | <b>22.5</b>     | <b>50</b>    | <b>27.5</b> | <b>100</b> |

### Wage Employment

Wage that contributes about 44% to the total household annual income is a major livelihood option of the people cut across social groups in the project area. The projects have a positive impact on creation of employment opportunities both for the landed and landless in the project villages. Of the total expenditure in a watershed area, over 50 % are on labour resulting in wage employment generation. The availability of income at the village itself has been able to reduce the seasonal migration to some extent in specific villages and has influenced equality in wages between men and women for non-official works in most of the project villages.

In OTELP, the wage income contains two components, one is cash and the other is the food component (2.5 kg of rice and 200 gm of pulses at Rs.9/- per wage day). The food component of the wages somehow ensured food availability at the households level impacting the food security. The supply of food grain, however, has been irregular off late.



Out of 374-wage employment generated per year per households, 170 man-days (45%) are from the agricultural and 204 man-days from the non-agriculture sources (55%) in the project villages. The non-project villages show a similar pattern with however lower 352 man-days created across the sources. The creation of employment at the household level across social groups varies in the project villages. The wage employment in agriculture for ST shows the highest 178 man-days followed by 166 days for OBC and 152 days for SC. But in non-agricultural wage employment, the SC shows the highest employment of 224 days followed by 204 days for ST and 160 days for OBC. The average wage earned per annum per households is arrived at Rs21692 for the project villages against Rs.19168 for the non-project villages. Non-agriculture is the predominant source of wage earning (Rs, 13518) followed by the agriculture (Rs.8174) in the project villages. The non-project villages follow a similar pattern.

Daily labour is the usual mode of labour employment. The old practice of annual employment has been stopped for the last five years. The mode of wage payment is in kind among the community members. In some of the tribal villages it is seen that the wage to prevail in the village is predefined by the community.

The prevailing wage rate is found higher in the project villages than in the control villages. The wage rate above Rs.60 prevails in 40% of the project villages against 5% in the non-project villages. 15% of the project villages show wage rate of Rs.50-Rs.60 against a small 5% of the control villages. Nearly half of the control villages have wage rates betweenRs.30 and Rs.40 against 10% of the project villages.

**Table No – 4.2.8: Distribution of HHs by Average Days of Wage Employment**

| Type of Village     | Caste | Agricultural |           | Non-Agricultural |           |
|---------------------|-------|--------------|-----------|------------------|-----------|
|                     |       | Male         | Female    | Male             | Female    |
| Project Village     | SC    | 88           | 64        | 126              | 96        |
|                     | ST    | 96           | 82        | 112              | 92        |
|                     | OBC   | 101          | 65        | 94               | 66        |
|                     | OC    | 0            | 0         | 150              | 0         |
| <b>Total</b>        |       | <b>94</b>    | <b>76</b> | <b>113</b>       | <b>91</b> |
| Non-Project Village | SC    | 90           | 69        | 110              | 93        |
|                     | ST    | 88           | 77        | 94               | 87        |
|                     | OBC   | 89           | 65        | 96               | 101       |
|                     | OC    | 50           | 50        | 50               | 50        |
| <b>Total</b>        |       | <b>89</b>    | <b>74</b> | <b>99</b>        | <b>90</b> |

**Table No – 4.2.9: Distribution of Sample HHs by Amount of Wages Received**

| Type of Village          | Caste | Agricultural |             | Non-Agricultural |             |
|--------------------------|-------|--------------|-------------|------------------|-------------|
|                          |       | Male         | Female      | Male             | Female      |
| Project Village<br>Total | SC    | 4124         | 2739        | 9237             | 6113        |
|                          | ST    | 4753         | 3876        | 7262             | 5859        |
|                          | OBC   | 5070         | 3086        | 7085             | 4477        |
|                          |       | 4636         | 3538        | 7724             | 5794        |
| Non-Project Village      | SC    | 4422         | 3156        | 7156             | 5464        |
|                          | ST    | 4316         | 3711        | 6085             | 5188        |
|                          | OBC   | 4127         | 2600        | 5084             | 4206        |
|                          | OC    | 2500         | 2500        | 2500             | 2500        |
| <b>Total</b>             |       | <b>4318</b>  | <b>3438</b> | <b>6259</b>      | <b>5153</b> |

**Table No – 4.2.10: Distribution of Sample Villages by Wage Rate**

| Name of the Block | Project Village |             |             |             |              | Non-Project Village |             |            |            |              |
|-------------------|-----------------|-------------|-------------|-------------|--------------|---------------------|-------------|------------|------------|--------------|
|                   | 30-40           | 40-50       | 50-60       | Above 60    | Total        | 30-40               | 40-50       | 50-60      | Above 60   | Total        |
| Bandhugaon        |                 |             | 2           | 3           | 5            | 2                   | 3           |            |            | 5            |
| Boden             | 1               | 2           | 1           | 1           | 5            | 3                   | 2           |            |            | 5            |
| Khaparakhhol      |                 | 3           | 2           |             | 5            | 3                   | 2           |            |            | 5            |
| Komna             | 3               | 2           |             |             | 5            | 3                   | 2           |            |            | 5            |
| Laxmipur          |                 | 3           |             | 2           | 5            | 4                   | 1           |            |            | 5            |
| Narla             |                 |             |             | 5           | 5            |                     | 2           | 1          | 2          | 5            |
| Patnagarh         |                 |             |             | 5           | 5            |                     | 4           | 1          |            | 5            |
| Thuamularampur    |                 | 4           | 1           |             | 5            | 4                   | 1           |            |            | 5            |
| <b>Total</b>      | <b>4</b>        | <b>14</b>   | <b>6</b>    | <b>16</b>   | <b>40</b>    | <b>19</b>           | <b>17</b>   | <b>2</b>   | <b>2</b>   | <b>40</b>    |
| <b>%</b>          | <b>10.0</b>     | <b>35.0</b> | <b>15.0</b> | <b>40.0</b> | <b>100.0</b> | <b>47.5</b>         | <b>42.5</b> | <b>5.0</b> | <b>5.0</b> | <b>100.0</b> |

## **NTFP Marketing**

The tribal living close to the forest earn substantial cash income from the sale of different forest produces. Major NTFP of the project area are Mahua flower and seed, Kendu leaf, Bamboo, Char, Sal seed, Neem seed, Tamarind and Siali leaf, Harida, Bahada Amla, Mango kernel etc. Over 3/4<sup>th</sup> of the villages have access to the Revenue/Village Forest and Reserve Forest. Char is the most common NTFP available in the 44 no. Of villages followed by Mahua (38 no.), Tamarind (38 no.), Sal seeds (23 no.), Kendu Leaves (23 no.), Neem seeds (20no.), Harida/Bahada (14no.) and Anla (15no.). 28% of the households in the project villages are found engaged in the NTFP collection against 22% in the non-project villages.

The private business farms that operate through the traders do procure the NTFP at non-remunerative prices. The Gram Panchayat empowered by the Orissa GP (MFP Administration) Rules 2002 of the Panchayati Raj Department of Government of Orissa to own, control and manage 68 NTFP are hardly doing anything for procurement and trade of NTFP. The SHGs rather are found playing an active role in procurement and marketing of different NTFP, and setting up small enterprises for value addition. Low cost manual oil expellers have been installed for extraction of oil from Mahua seeds.

MART-a rural consultancy has taken a market driven approach to livelihoods promotion in rural areas. With the support of MART, collective marketing of selected products like tamarind, ginger, turmeric, pulses, cereals, hill brooms available in the programme villages is under progress. MART has been providing training to SHGs to improve the quality of NTFP (Mahua flower and char) though proper drying and storage. It has demonstrated drying platforms in many villages. Weighing machines have been provided to some SHGs to avoid cheating in weights and measures. Many SHGs are involved in collection, processing and sale of NTFP with a loan from the Watershed Development Committee/VDC. Collective marketing of NTF produces as mahua flower, mahua seeds and of agriculture produces as onion and cotton has been undertaken as a strategy for livelihood promotion. The average household income earned per annum from the NTFP amounts to Rs.1464 in the project villages to Rs.876 in the non-project villages.

**Table No – 4.2.11: Distribution of sample Villages by access to Forest**

| Name of the Blocks | Non-Project Village |                 | Project Village |                 |
|--------------------|---------------------|-----------------|-----------------|-----------------|
|                    | Village forest      | Reserved forest | Village forest  | Reserved forest |
| Bandhugaon         | 0                   | 5               | 0               | 5               |
| Boden              | 0                   | 4               | 0               | 3               |
| Khaparakhhol       | 2                   | 5               | 3               | 5               |
| Komna              | 1                   | 0               | 3               | 0               |
| Laxmipur           | 4                   | 0               | 5               | 2               |
| Narla              | 0                   | 0               | 2               | 0               |
| Patnagarh          | 2                   | 0               | 0               | 0               |
| Thuamularampur     | 4                   | 4               | 4               | 3               |
| <b>Total</b>       | <b>13</b>           | <b>18</b>       | <b>17</b>       | <b>18</b>       |

**Table No – 4.2.12: Distribution of HHs in sample Villages engaged in NTFP Collection**

| Name of the Block | Non-Project Village |                 | Project Village |                 |
|-------------------|---------------------|-----------------|-----------------|-----------------|
|                   | Village forest      | Reserved forest | Village forest  | Reserved forest |
| Bandhugaon        | 0                   | 495             | 0               | 550             |
| Boden             | 0                   | 250             | 0               | 140             |
| Khaparakhhol      | 40                  | 125             | 420             | 535             |
| Komna             | 0                   | 0               | 0               | 0               |
| Laxmipur          | 0                   | 350             | 406             | 140             |
| Narla             | 0                   | 0               | 50              | 0               |
| Patnagarh         | 160                 | 0               | 100             | 0               |
| Thuamularampur    | 165                 | 130             | 253             | 145             |
| <b>Total</b>      | <b>365</b>          | <b>1350</b>     | <b>1229</b>     | <b>1510</b>     |

**Table No – 4.2.13: Distribution of Sample Villages by type of NTFP Available**

| Name of the NTFP | Village Type |    |
|------------------|--------------|----|
| Anal             | 12           | 15 |
| Harida/Bahada    | 15           | 19 |
| Mahua            | 30           | 38 |
| Sal seeds        | 18           | 23 |
| Tamarind         | 30           | 38 |
| Char             | 35           | 44 |
| Kendu leaves     | 18           | 23 |
| Neem seeds       | 16           | 20 |

## Livelihoods Diversification

Livelihoods diversifications linked with increased incomes are critical to reducing vulnerability of rural communities, especially in times of drought and other environmental hazards. In the non-farm livelihoods sector, efforts have been focused on promotion of self-help groups, skill building, and enterprise development for livelihood promotion. Non-land based activities like mushroom cultivation, apiary, sericulture, collection and processing of NTFP, petty business, agro -processing and value addition, retailing PDS commodities, production of grafts / seedlings, processing and marketing of home made products etc are found undertaken individually and in group.

The projects supported formation and strengthening of Self-Help Groups (SHG). The SHGs are found utilizing the funds for income generation activities including livestock rearing (poultry, goats and bullocks) and processing of minor forest produce (making leaf plates, binding brooms, processing tamarind, etc). Some groups have taken up trading in cashew, tamarind, paddy, etc. Training of men and women in masonry, stone cutting, wire bending, carpentry and plumbing has been provided for their self-employment.

**Table No – 4.2.14: Distribution of HHs by Type of Benefits under WORLP/OTELP**

| Benefits                    | SC        | ST         | OBC       | Total      |
|-----------------------------|-----------|------------|-----------|------------|
| Grant for Trading/Business  | 5         | 5          | 4         | 14         |
| Investment Loan             | 1         | 0          | 2         | 3          |
| Farm Pond                   | 4         | 11         | 5         | 20         |
| Field Bonding               | 2         | 3          | 0         | 5          |
| KB Pumps                    | 1         | 2          | 0         | 3          |
| Dug/Ring Well               | 2         | 2          | 3         | 7          |
| Bullock/Cow                 | 0         | 2          | 3         | 5          |
| Chicks                      | 1         | 8          | 1         | 10         |
| GIA                         | 0         | 5          | 1         | 6          |
| Goats                       | 8         | 11         | 1         | 20         |
| Pigs                        | 0         | 2          | 0         | 2          |
| Shelter House               | 2         | 3          | 0         | 5          |
| Individual HH Latrine       | 1         | 3          | 1         | 5          |
| Mosquito Nets               | 2         | 2          | 0         | 4          |
| Seeds for Kitchen Gardening | 6         | 54         | 9         | 69         |
| Onion Seeds                 | 0         | 3          | 0         | 3          |
| Wage Employment             | 3         | 38         | 3         | 44         |
| <b>Total</b>                | <b>38</b> | <b>154</b> | <b>33</b> | <b>225</b> |

### 4.3: LIVELIHOOD IMPACTS:

#### Household Income

The gross annual income of the sample households in the project villages is averaged at Rs.32364 against Rs.29009 of the households in the non-project villages. The gross annual income for SC, ST, OBC and OC households in the project villages are arrived at Rs.30002, Rs. 31796, Rs.36998 and Rs.53950 against Rs.26003, Rs.28094, Rs.37698, and Rs.40817 respectively of the non-project villages. Income from wage is the dominant source of household income both in project (44%) and non-project villages (50%). Wage labour commands the largest source of income for the SC households both in the project and non-project villages. Income from agriculture is the next important sources of household income. The share of agriculture in household income ranges from 32 percent for project villages to 23 percent for non-project villages. About 8% of the households' income of the project villages comes from non-agricultural enterprises against 6% of the non-project villages. Forestry contributes significantly to the household income (4.5%) of the project villages against 3% of the non-project villages.

**Table No – 4.3.1: Distribution of sample HHs by MSI**

| Type of Village     | Caste | Farm         | Non-Farm   | Wage Labour  | Other      | Total        |
|---------------------|-------|--------------|------------|--------------|------------|--------------|
| Project Village     | SC    | 37           | 6          | 44           | 4          | 91           |
|                     | ST    | 122          | 8          | 114          | 3          | 247          |
|                     | OBC   | 32           | 5          | 16           | 5          | 58           |
|                     | OC    | 1            | 1          | 1            | 1          | 4            |
| <b>Total</b>        |       | <b>192</b>   | <b>20</b>  | <b>175</b>   | <b>13</b>  | <b>400</b>   |
| <b>%</b>            |       | <b>48.0</b>  | <b>5.0</b> | <b>43.8</b>  | <b>3.3</b> | <b>100.0</b> |
| Non-Project Village | SC    | 21           | 4          | 78           | 2          | 105          |
|                     | ST    | 97           | 6          | 129          | 3          | 235          |
|                     | OBC   | 33           | 4          | 18           | 2          | 57           |
|                     | OC    | 2            |            |              | 1          | 3            |
| <b>2 Total</b>      |       | <b>153</b>   | <b>14</b>  | <b>225</b>   | <b>8</b>   | <b>400</b>   |
| <b>%</b>            |       | <b>38.25</b> | <b>3.5</b> | <b>56.25</b> | <b>2</b>   | <b>100</b>   |

**Table No –4.3.2: Distribution Average Annual of Income of Sample HHs by Source**

| Type of Village     | Caste      | Agric       | Hortic.    | Ani. Husb  | Forestry   | Non-Agri.  | Salary      | Wage Labor  | Others     | Shift. Cultiv. | Total        |
|---------------------|------------|-------------|------------|------------|------------|------------|-------------|-------------|------------|----------------|--------------|
| Project Village     | <b>SC</b>  | 6385        | 407        | 552        | 705        | 3960       | 815         | 16033       | 1099       | 46             | 30002        |
|                     | %          | 21.3        | 1.4        | 1.8        | 2.3        | 13.2       | 2.7         | 53.4        | 3.7        | 0.2            | 100.0        |
|                     | <b>ST</b>  | 10114       | 879        | 771        | 2055       | 738        | 1489        | 14777       | 346        | 627            | 31796        |
|                     | %          | 31.8        | 2.8        | 2.4        | 6.5        | 2.3        | 4.7         | 46.5        | 1.1        | 2.0            | 100.0        |
|                     | <b>OBC</b> | 14433       | 572        | 1269       | 241        | 6853       | 3326        | 10289       | 14         | 0              | 36998        |
|                     | %          | 39.0        | 1.5        | 3.4        | 0.7        | 18.5       | 9.0         | 27.8        | 0.0        | 0.0            | 100.0        |
|                     | <b>OC</b>  | 29350       | 0          | 0          | 0          | 10000      | 600         | 5000        | 9000       | 0              | 53950        |
|                     | %          | 54.4        | 0.0        | 0.0        | 0.0        | 18.5       | 1.1         | 9.3         | 16.7       | 0.0            | 100.0        |
| <b>Avg.</b>         |            | 10084       | 718        | 785        | 1464       | 2451       | 1594        | 14314       | 556        | 398            | 32364        |
| <b>%</b>            |            | <b>31.2</b> | <b>2.2</b> | <b>2.4</b> | <b>4.5</b> | <b>7.6</b> | <b>4.9</b>  | <b>44.2</b> | <b>1.7</b> | <b>1.2</b>     | <b>100.0</b> |
| Non-Project Village | <b>SC</b>  | 3238        | 343        | 803        | 171        | 2210       | 2371        | 16131       | 735        | 0              | 26003        |
|                     | %          | 12.5        | 1.3        | 3.1        | 0.7        | 8.5        | 9.1         | 62.0        | 2.8        | 0.0            | 100.0        |
|                     | <b>ST</b>  | 5933        | 187        | 361        | 1414       | 880        | 3004        | 15106       | 447        | 763            | 28094        |
|                     | %          | 21.1        | 0.7        | 1.3        | 5.0        | 3.1        | 10.7        | 53.8        | 1.6        | 2.7            | 100.0        |
|                     | <b>OBC</b> | 14255       | 1561       | 909        | 0          | 3711       | 5421        | 10308       | 1533       | 0              | 37698        |
|                     | %          | 37.8        | 4.1        | 2.4        | 0.0        | 9.8        | 14.4        | 27.3        | 4.1        | 0.0            | 100.0        |
|                     | <b>OC</b>  | 30733       | 0          | 83         | 0          | 0          | 6667        | 3333        | 0          | 0              | 40817        |
|                     | %          | 75.3        | 0.0        | 0.2        | 0.0        | 0.0        | 16.3        | 8.2         | 0.0        | 0.0            | 100.0        |
| <b>Avg.</b>         |            | 6597        | 423        | 553        | 876        | 1626       | 3210        | 14603       | 674        | 449            | 29009        |
| <b>%</b>            |            | <b>22.7</b> | <b>1.5</b> | <b>1.9</b> | <b>3.0</b> | <b>5.6</b> | <b>11.1</b> | <b>50.3</b> | <b>2.3</b> | <b>1.5</b>     | <b>100.0</b> |

### **Production Stability**

Assured supplemental irrigation has somehow ensured the farm stabilization in terms of crop yield, total crop output and farm income. It is evident from the fact that 48% of the non-watershed villages reported crop loss (kharif) to varied extent due to drought in 2008 against 35% of the project villages. In about one third of the villages, pests reportedly affected the crops. The crop loss due to flood/water stagnation is reported in 5-6 villages. The extent of crop loss from drought has been more in the non-project villages than in the project villages.

**Table No – 4.3.3: Distribution of Sample Villages by Crop Damage 2008**

| Name of the Blocks | Project Village |              |              |            | Non-Project Village |             |             |            |
|--------------------|-----------------|--------------|--------------|------------|---------------------|-------------|-------------|------------|
|                    | Drought         | Flood        | Pests        | Total      | Drought             | Flood       | Pests       | Total      |
| Bandhugaon         | 1               |              |              | 1          | 1                   |             |             | 1          |
| Boden              | 2               | 2            | 1            | 5          | 2                   | 2           | 1           | 5          |
| Khaparakhhol       | 4               | 1            | 3            | 8          | 3                   |             | 2           | 5          |
| Komna              | 3               | 1            | 1            | 5          | 4                   | 1           | 2           | 7          |
| Laxmipur           |                 |              | 1            | 1          | 1                   |             | 1           | 2          |
| Narla              | 3               |              | 1            | 4          | 3                   |             | 2           | 5          |
| Patnagarh          | 1               |              | 3            | 4          | 3                   |             | 1           | 4          |
| Thuamularampur     |                 | 2            | 1            | 3          | 2                   | 2           | 1           | 5          |
| <b>Total</b>       | <b>14</b>       | <b>6</b>     | <b>11</b>    | <b>31</b>  | <b>19</b>           | <b>5</b>    | <b>10</b>   | <b>34</b>  |
| <b>%</b>           | <b>45.1</b>     | <b>19.35</b> | <b>35.48</b> | <b>100</b> | <b>55.9</b>         | <b>14.7</b> | <b>29.4</b> | <b>100</b> |

**Table No – 4.3.4: Distribution of Crop Damage in Sample Villages by Extent of Damage**

| Source       | Project Village |           |          |          |           | Non-Project Village |           |          |          |           |
|--------------|-----------------|-----------|----------|----------|-----------|---------------------|-----------|----------|----------|-----------|
|              | 25%             | 25-50%    | 50-75%   | 75%      | T         | 25%                 | 25-50%    | 50-75%   | 75%      | Total     |
| Drought      | 2               | 9         | 2        | 0        | 14        | 6                   | 10        | 3        | 0        | 19        |
| Flood        | 0               | 2         | 3        | 1        | 6         | 0                   | 3         | 2        | 0        | 5         |
| Pests        | 3               | 8         | 0        | 0        | 11        | 3                   | 4         | 3        | 0        | 10        |
| <b>Total</b> | <b>5</b>        | <b>19</b> | <b>5</b> | <b>1</b> | <b>31</b> | <b>9</b>            | <b>17</b> | <b>8</b> | <b>0</b> | <b>34</b> |

### Household Food Security

Because of water and land management and agriculture and horticulture development activities, the farmers are able to provide protective irrigation, increase the productivity, grow a second crop and diversify into vegetables. The cumulative effect of enhanced productivity has made the villagers more food secure. WFP food assistance reportedly strengthened the food security measures at the household level. The issue of food-security has been additionally addressed by promotion of tuber crops, kitchen gardens and grain banks in the watershed villages. Public distribution system, foods for work (FFW) programmes and non-agricultural wages through NREGS are learnt to have positively impacted upon food security.

Household food self-provisioning relates to no. of months the HOUSEHOLDS can sustain itself from its own produce. Over 43% of households in the non-project villages and 29% of households of project villages are food insecure with zero month of food self-provisioning. The food self-provisioning for 4-6 months is reported by 42% of the



households in the project villages against 29% in the non-project villages. 19% of the households in the project villages and 16% of the households in the non-project villages report food self-provisioning from 1 to 3 months. An equal 11% of the households both in the project and non-project villages report food self-provisioning above 6 months.

The PDS is reported as the predominant source of food supply to tide over food deficit. Subsidized food supplied through the social security measures as Annapurna and Antyodaya programs provides food security to 5% and 8% of the households in the project and non-project villages respectively. The role of Food For Work and Grain Bank in coping food deficit is almost non-existent in both the category of villages. Over 96% of the households in the project villages possess ration card against 93% in the non-project villages.

One out of every four-project village has grain banks that are managed by the WSHGs of the respective villages. Over 2/3<sup>rd</sup> of the grain banks have grain in store. Biriguda and Jabang are the two villages, where the rice to the grain banks has been supplied by the ITDA. There has been a decline in the proportion of villages having grain banks from 30% (WORLP Baseline) to 25%. The access to PDS has increased from the baseline 70% to 93-96% currently.

**Table No – 4.3.5: Distribution of sample HHs by HH Food Self Provisions (months)**

| Village Type        | Caste | 0           | 1 to 3      | 4 to 6      | 7 to 9     | 10 to 12   | Total        |
|---------------------|-------|-------------|-------------|-------------|------------|------------|--------------|
| Project Village     | SC    | 37          | 23          | 27          | 1          | 3          | 91           |
|                     | ST    | 64          | 40          | 113         | 19         | 11         | 247          |
|                     | OBC   | 14          | 11          | 27          | 2          | 4          | 58           |
|                     | OC    | 0           | 0           | 2           | 1          | 1          | 4            |
| <b>Total</b>        |       | <b>115</b>  | <b>74</b>   | <b>169</b>  | <b>23</b>  | <b>19</b>  | <b>400</b>   |
| <b>%</b>            |       | <b>28.8</b> | <b>18.5</b> | <b>42.3</b> | <b>5.8</b> | <b>4.8</b> | <b>100.0</b> |
| Non-Project Village | SC    | 67          | 15          | 18          | 4          | 1          | 105          |
|                     | ST    | 86          | 42          | 80          | 15         | 12         | 235          |
|                     | OBC   | 20          | 7           | 19          | 4          | 7          | 57           |
|                     | OC    | 0           | 1           | 0           | 0          | 2          | 3            |
| <b>Total</b>        |       | <b>173</b>  | <b>65</b>   | <b>117</b>  | <b>23</b>  | <b>22</b>  | <b>400</b>   |
| <b>%</b>            |       | <b>43.3</b> | <b>16.3</b> | <b>29.3</b> | <b>5.8</b> | <b>5.5</b> | <b>100.0</b> |

**Table No – 4.3.6: Distribution of sample HHs by Food Deficit Coping Strategy**

| Village Type        | Caste | PDS         | FFW        | Grain Bank | Other      | Total        |
|---------------------|-------|-------------|------------|------------|------------|--------------|
| Project Village     | SC    | 89          |            |            | 2          | 91           |
|                     | ST    | 231         | 3          |            | 13         | 247          |
|                     | OBC   | 52          |            |            | 6          | 58           |
|                     | OC    | 4           |            |            | 0          | 4            |
| <b>Total</b>        |       | <b>376</b>  | <b>3</b>   |            | <b>21</b>  | <b>400</b>   |
| <b>%</b>            |       | <b>94.0</b> | <b>0.8</b> | <b>0.0</b> | <b>5.3</b> | <b>100.0</b> |
| Non-Project Village | SC    | 102         |            |            | 3          | 105          |
|                     | ST    | 222         |            |            | 13         | 235          |
|                     | OBC   | 44          |            | 1          | 12         | 57           |
|                     | OC    | 1           |            |            | 2          | 3            |
| <b>Total</b>        |       | <b>369</b>  |            | <b>1</b>   | <b>30</b>  | <b>400</b>   |
| <b>%</b>            |       | <b>92.3</b> | <b>0.0</b> | <b>0.3</b> | <b>7.5</b> | <b>100.0</b> |

**Table No – 4.3.7: Distribution of HHs by Ration Card Holding**

| Village Type        | Caste | Yes         | No         | Total        |
|---------------------|-------|-------------|------------|--------------|
| Project Village     | SC    | 89          | 2          | 91           |
|                     | ST    | 237         | 10         | 247          |
|                     | OBC   | 55          | 3          | 58           |
|                     | OC    | 4           |            | 4            |
| <b>Total</b>        |       | <b>385</b>  | <b>15</b>  | <b>400</b>   |
| <b>%</b>            |       | <b>96.3</b> | <b>3.8</b> | <b>100.0</b> |
| Non-Project Village | SC    | 101         | 4          | 105          |
|                     | ST    | 225         | 10         | 235          |
|                     | OBC   | 45          | 12         | 57           |
|                     | OC    | 1           | 2          | 3            |
| <b>Total</b>        |       | <b>372</b>  | <b>28</b>  | <b>400</b>   |
| <b>%</b>            |       | <b>93.0</b> | <b>7.0</b> | <b>100.0</b> |

**Table No – 4.3.8: Distribution of Sample HHs by Social Security Schemes**

| Village Type        | Caste | Antyodaya /Annapurna | Old Age Pension | Widow Pension | Total     |
|---------------------|-------|----------------------|-----------------|---------------|-----------|
| Project Village     | SC    | 10                   | 9               | 3             | 22        |
|                     | ST    | 12                   | 16              | 6             | 34        |
|                     | OBC   | 6                    | 2               | 4             | 12        |
|                     | OC    |                      | 1               |               | 1         |
| <b>Total</b>        |       | <b>28</b>            | <b>28</b>       | <b>13</b>     | <b>69</b> |
| Non-Project Village | SC    | 7                    | 11              | 4             | 22        |
|                     | ST    | 8                    | 8               | 7             | 23        |
|                     | OBC   | 3                    | 1               |               | 4         |
| <b>Total</b>        |       | <b>18</b>            | <b>20</b>       | <b>11</b>     | <b>49</b> |

## Migration

The extent of migration in five sample blocks namely Patnagarh and Khaprakhol of Bolangir District, Boden and Komna of Nuapada district and Narla of Kalahandi district is phenomenally high with little difference in pattern between the villages within and outside the watersheds. 15% of the sample households in the project villages report migration compared to 18% percent during the year of WORLP baseline study. The degree of distress migration is on decline obviously due to watershed development and other social security measures. Migration is high among the SC and ST groups who are both socially backward and economically disadvantaged. Among the migrants, the SC and ST constitute over 86% in the project and non-project villages.

In Larki for example, about 47 households used to migrate prior to launching of the project in 2004-05. The extent of migration has come down with only 17 households (SC-9, OBC-7 & ST-1) reporting migration during the current year. In Palanbasa of Boden block the VDC reportedly prevented two households (SC-1 & OBC-1) from migrating by engaging them in the village watershed development works. The enhanced crop and NTFP activities in natural resource rich Th Rampur, Laxmipur and Bandhugaon blocks have sustained the demand for labour leading to near total elimination of distress migration. In the remaining five blocks that usually experience scant rainfall, the watershed development has no doubt improved the ground water situation but could not impact on migration.

Migration is usually long term in nature. Labourers migrate with family to distant places in AP, Gujrat, Maharastra, Karnatak, Keral Chhatisgarh etc during lean agricultural season (November-April) when wage employment options in the local area are bleak. Brick kiln provides the largest source of employment to the migrants at the destination sites followed by masonry works. Persons migrating to Baragarh and Sambalpur of Orissa are engaged in paddy cutting and harvesting. Distress migration is usually associated with loan advances by the labour contractors and exploitative contracts. It is the bulk advance (of around Rs. 30000) that the people mostly utilize in repaying the old loan or in conducting the social functions as marriage etc. On the piece rate payment, the whole family is engaged including the women and children.

**Table No – 4.3.9: Distribution of sample HHs by no. Of Family Migrated**

| Village Type        | Caste | Total            |
|---------------------|-------|------------------|
| Project Village     | SC    | 24               |
|                     | ST    | 28               |
|                     | OBC   | 8                |
|                     | OC    | 0                |
| <b>Total</b>        |       | <b>60(15%)</b>   |
| Non-Project Village | SC    | 22               |
|                     | ST    | 31               |
|                     | OBC   | 9                |
|                     | OC    | 0                |
| <b>Total</b>        |       | <b>62(15.5%)</b> |

**Table No – 4.3.10: Distribution of Migrated HHs by Place of Migration**

| Village Type        | AP | Gujrat | Maharastra | Keral | Karnatak | Chhatisgarh | TN | Orissa |
|---------------------|----|--------|------------|-------|----------|-------------|----|--------|
| Project Village     | 33 | 7      | 3          | 1     | 2        | 6           | 2  | 6      |
| Non-Project Village | 31 | 6      | 3          | 0     | 2        | 6           | 1  | 11     |

**Table No – 4.3.11: Distribution of Migrated HHs by Reasons for Migration**

| Project Type        | Lack of local Employment | Bulk Advance | Piece rate basis payment | Total        |
|---------------------|--------------------------|--------------|--------------------------|--------------|
| Project Village     | 14                       | 38           | 8                        | 60           |
| %                   |                          | <b>63.3</b>  | <b>13.3</b>              | <b>100.0</b> |
| Non-Project Village | 32                       | 24           | 6                        | 62           |
| %                   |                          | <b>38.7</b>  | <b>9.7</b>               | <b>100.0</b> |

**Table No – 4.3.12: Distribution of Sample Villages by Family Migration**

| Village Type        | Name of the Blocks | No. of Non-Project Villages Reported Migration | No. of Project Villages Reported Migration | Total       |
|---------------------|--------------------|--|--|-------------|
| Non-Project Village | Bandhugaon         | 0  | 0  | 0           |
|                     | Boden              | 5  | 2  | 7           |
|                     | Khaparakhhol       | 5  | 5  | 10          |
|                     | Komna              | 5  | 5  | 10          |
|                     | Laxmipur           | 1  | 0  | 1           |
|                     | Narla              | 4  | 5  | 9           |
|                     | Patnagarh          | 5  | 3  | 8           |
|                     | Thuamularampur     | 0  | 1  | 1           |
| <b>Total</b>        |                    | <b>25</b>                                      | <b>21</b>                                  | <b>46</b>   |
| <b>%</b>            |                    | <b>62.5</b>                                    | <b>52.5</b>                                | <b>57.5</b> |

**Table No – 4.3.13: Distribution of Sample Villages by no of Family Migrated**

| Name of the Block | Non-Project |             |             |              | Project     |             |             |              |
|-------------------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|--------------|
|                   | SC          | ST          | OBC/OC      | Total        | SC          | ST          | OBC/OC      | Total        |
| Bandhugaon        | 0           | 0           | 0           | 0            | 0           | 0           | 0           | 0            |
| Boden             | 41          | 75          | 16          | 132          | 25          | 10          | 20          | 55           |
| Khaparakhhol      | 35          | 83          | 53          | 171          | 117         | 435         | 100         | 652          |
| Komna             | 93          | 156         | 43          | 292          | 22          | 79          | 15          | 116          |
| Laxmipur          | 10          | 0           | 0           | 10           | 0           | 0           | 0           | 0            |
| Narla             | 88          | 35          | 35          | 158          | 64          | 35          | 30          | 129          |
| Patnagarh         | 88          | 142         | 72          | 302          | 35          | 40          | 10          | 85           |
| Thuamularampur    | 0           | 0           | 0           | 0            | 1           | 10          | 0           | 11           |
| <b>Total</b>      | <b>355</b>  | <b>491</b>  | <b>219</b>  | <b>1065</b>  | <b>264</b>  | <b>609</b>  | <b>175</b>  | <b>1048</b>  |
| <b>%</b>          | <b>33.3</b> | <b>46.1</b> | <b>20.6</b> | <b>100.0</b> | <b>25.2</b> | <b>58.1</b> | <b>16.7</b> | <b>100.0</b> |

**Table No – 4.3.14: Distribution of Sample Villages by Individual Migration**

| Name of the Block | Non-Project Village |            |              | Project Village |            |              |
|-------------------|---------------------|------------|--------------|-----------------|------------|--------------|
|                   | Male                | Female     | Total        | Male            | Female     | Total        |
| Bandhugaon        | 6                   | 0          | 6            | 15              | 0          | 15           |
| Boden             | 20                  | 0          | 20           | 120             | 0          | 120          |
| Khaparakhhol      | 0                   | 0          | 0            |                 | 0          | 0            |
| Komna             | 0                   | 0          | 0            | 12              | 0          | 12           |
| Laxmipur          | 0                   | 0          | 0            | 5               | 0          | 5            |
| Narla             | 0                   | 0          | 0            | 85              | 0          | 85           |
| Patnagarh         | 50                  | 5          | 55           | 8               | 7          | 15           |
| Thuamularampur    | 20                  | 0          | 20           | 11              | 0          | 11           |
| <b>Total</b>      | <b>96</b>           | <b>5</b>   | <b>263</b>   | <b>256</b>      | <b>7</b>   | <b>263</b>   |
| <b>%</b>          | <b>95.0</b>         | <b>5.0</b> | <b>100.0</b> | <b>97.3</b>     | <b>2.7</b> | <b>100.0</b> |

**Social Expenditure**

Benefit flows from the programs are reflected in the social consumption of items as education and health. Increased expenditure on these items would go along way in improving the quality of life. The average annual households expenditure on education for the project villages ranges from Rs.1790 for ST to Rs. 3158 for SC and 4108 for OBC. The corresponding figures for the non-project villages are Rs.2154, Rs.2892 and Rs.3333. Annual households expenditure on education for all project villages as a whole is averaged at Rs.2582 against Rs.2476 for the non-project villages.

Annual household expenditure on health of sample households in project villages is arrived at Rs.2303 against Rs.2262 of the households in non-project villages. In both the villages the ST are found spending the least on health. The IMR (defined as no. of infant deaths per 1000 live births) for the sample districts as a whole is arrived at 89 compared to the prevailing rate of 71 per 1000 live births in the state of Orissa. The IMR for the project villages is arrived at unbelievable low 64 against a very high rate of 109 for the non-project villages. Neonatal Mortality Rate (infant death with 4 weeks after delivery) is prominent with over 3/4<sup>th</sup> of the infant deaths being in the neonatal period. The pattern of neonatal death is similar between the project and non-project villages.

**Table No –4.3.15: Distribution of Average HH Exp on Health & Education by Caste**

| <b>Non-Project Village</b> | <b>SC</b> | <b>Education</b> | <b>Health</b> |
|----------------------------|-----------|------------------|---------------|
| Project Village            | SC        | 3158             | 2872          |
|                            | ST        | 1790             | 2123          |
|                            | OBC       | 4108             | 2407          |
| <b>Total</b>               |           | <b>2582</b>      | <b>2303</b>   |
| Non-Project Village        | SC        | 2892             | 2835          |
|                            | ST        | 2154             | 2122          |
|                            | OBC       | 3333             | 1805          |
|                            | OC        |                  | 3000          |
| <b>Total</b>               |           | <b>2476</b>      | <b>2262</b>   |

**Table No – 4.3.16: Distribution of IMR by Type of Sample Villages**

| <b>Non-Project</b> | <b>Project</b> | <b>Combined</b> |
|--------------------|----------------|-----------------|
| <b>108.7</b>       | <b>64.3</b>    | <b>89.4</b>     |

**Table No – 4.3.17: Distribution of Infant Deaths in Sample Villages by Age Of Death**

| <b>Age</b>       | <b>Non-Project Village</b> | <b>Project Village</b> | <b>Total</b>       |
|------------------|----------------------------|------------------------|--------------------|
| 0-1 Male         | 31                         | 20                     | 51                 |
| 0-1 Female       | 24                         | 8                      | 32                 |
| <b>Sub Total</b> | <b>55(73.3)</b>            | <b>28(82.35)</b>       | <b>83(76.15)</b>   |
| 1-1 2 Male       | 9                          | 3                      | 12                 |
| 1-12 Female      | 11                         | 3                      | 14                 |
| <b>Sub Total</b> | <b>20(26.6)</b>            | <b>6(17.64)</b>        | <b>26(23.85)</b>   |
| <b>Total</b>     | <b>75(100.00)</b>          | <b>34(100.00)</b>      | <b>109(100.00)</b> |

### **Drudgeries of Women**

Initiatives to address HH related drudgeries for women are evident in respect of water sanitation and cooking. Construction of individual toilets with piped water supply for each household in Th Rampur block of Kalhandi district is an initiative of the FNGO Gram Vikash. Gravity flow water supply structures have been set up in sample villages by using water from the perennial streams. The constructions of toilets and bathrooms for the individual households and construction of water supply through gravity flow system have been completed in some of the project villages namely Phulmunda,

Kendumundi, Chingerband, Debabhuin, Gahirmunda of Patnagarh block, Thikpalli and Larki of Komna block, Kathaghara, Jabang, Pustiguda of Thuamularampur block. In Bartia of Khaparakhhol block, over 100 washing platforms are reported constructed. CPSW, the PIA in Komna block of Nuapada district has distributed pressure cookers and smokeless chullha in the project villages with the objectives of reducing women's drudgeries in cooking. Half a dozen villages both project and non-project have piped water supply through stand posts constructed under RWSS.

### **Community Perception**

During the pre-project period, most of the land in the watershed area was under subsistent cropping, the crops were mainly of traditional varieties with low production for self-consumption. The cropping pattern under the impact of the programs inside the watershed area has changed in favour of commercial crops such as Groundnut, Cotton and Onion. The change in the income of the landowning community in the sample watershed areas is significant due to the implementation of watershed activities.

The SHGs formed in the watershed areas have a direct positive impact on the economic independence of the rural women. It is observed that the SHGs credit system is mainly utilized for their immediate needs such as medical, social, repayment of loans and educational purposes.

Majority of the people in watershed villages feel that landed households have benefited more than the Land Less households in respect of wage employment. Land and water development activities have improved the soil moisture conservation and thereby improving the crop yield in the watersheds. Improvement in ground water condition and increase in crop production are the major impacts of the programme. Land development, creation of irrigation facilities and employment generations are the major benefits of the programs as perceived by the people in the non-project villages

The people in over 3/4<sup>th</sup> of the project village feel that there is an increasing trend in the agricultural system in respect of Kharif cropping (85%), rabi cropping (87.5%), cash cropping (77.5%) and self / wage employment (77.5%). The increasing trend is affirmed by a low 20-22.5% of the project villages. The decline of shifting cultivation and tenancy



cultivation/ cash cropping is reported by over 70% of the project villages against 33% of the non-project villages. The community perceives that there is a reduction in the migration. This is due to the employment generated in the land and water management structures and participatory forest management.

**Table No – 4.3.18: Distribution of Sample Villages by Agricultural trend**

| Trend                                 | Non-Project Village |             |           |            | Project Village |             |             |            |
|---------------------------------------|---------------------|-------------|-----------|------------|-----------------|-------------|-------------|------------|
|                                       | Increasing          | Decreasing  | Stagnant  | Total      | Increasing      | Decreasing  | Stagnant    | Total      |
| Kharif Cultivation                    | 9                   | 17          | 14        | 40         | 34              | 5           | 1           | 40         |
| %                                     | <b>22.5</b>         | <b>42.5</b> | <b>35</b> | <b>100</b> | <b>85</b>       | <b>12.5</b> | <b>2.5</b>  | <b>100</b> |
| Rabi Cultivation                      | 8                   | 20          | 12        | 40         | 35              | 4           | 1           | 40         |
| %                                     | <b>20</b>           | <b>50</b>   | <b>30</b> | <b>100</b> | <b>87.5</b>     | <b>10</b>   | <b>2.5</b>  | <b>100</b> |
| Summer Cultivation                    | 2                   | 0           | 38        | 40         | 12              |             | 28          | 40         |
| %                                     | <b>5</b>            | <b>0</b>    | <b>95</b> | <b>100</b> | <b>30</b>       | <b>0</b>    | <b>70</b>   | <b>100</b> |
| Cash Crop                             | 8                   | 6           | 26        | 40         | 31              | 4           | 5           | 40         |
| %                                     | <b>20</b>           | <b>15</b>   | <b>65</b> | <b>100</b> | <b>77.5</b>     | <b>10</b>   | <b>12.5</b> | <b>100</b> |
| Tenancy Cultivation                   | 9                   | 15          | 26        | 40         | 5               | 29          | 6           | 40         |
| %                                     | <b>22.5</b>         | <b>37.5</b> | <b>65</b> | <b>100</b> | <b>12.5</b>     | <b>72.5</b> | <b>15</b>   | <b>100</b> |
| Shifting cultivation                  | 8                   | 10          | 22        | 40         | 3               | 28          | 9           | 40         |
| %                                     | <b>20</b>           | <b>25</b>   | <b>55</b> | <b>100</b> | <b>7.5</b>      | <b>70</b>   | <b>22.5</b> | <b>100</b> |
| Crop loss due to environment. Hazards | 16                  | 6           | 18        | 40         | 31              | 5           | 4           | 40         |
| %                                     | <b>40</b>           | <b>15</b>   | <b>45</b> | <b>100</b> | <b>77.5</b>     | <b>12.5</b> | <b>10</b>   | <b>100</b> |
| Self /Wage Employment                 | 9                   | 15          | 16        | 40         | 31              | 5           | 4           | 40         |
| %                                     | <b>22.5</b>         | <b>37.5</b> | <b>40</b> | <b>100</b> | <b>77.5</b>     | <b>12.5</b> | <b>10</b>   | <b>100</b> |

### Community Participation

The Programs seek self-reliant and sustainable development by mobilizing the community, building community institutions and strengthening their capacity. The Programs supported PIA/FNGO to empower the community through awareness creation and assist them in micro-planning exercises and in formulation and

implementation of the village level development plans. In the process, various committees/groups like Watershed Association /Watershed Committee, Village Development Committee /Village level Sub Committee, Self-Help Groups and User Groups are found formed and their capacity built. Skill development trainings, behavioral change trainings, awareness campaigns, motivation camps and exposure are reported organized. In program implementation, over 75% of the sample households are found participating in any one of the project activities. Household participation in IGP is quite high as it targets the youth, women and landless. Participation in agriculture related activities are restricted to the landed households only. The people's participation at present is on decline. The VDC/WDC meetings are thinly attended. There has hardly been any convening of Watershed Association meeting as alleged in many villages. The meeting of the Social Audit Sub Committee is found not ever convened in most of the micro watersheds.

To conclude, the increase in income and employment levels reflects the potential of the programs in enhancing the rural livelihoods. Enhanced complimentary assets such as livestock, agricultural implements, water resources indicate the increased stability in livelihoods. Drinking water situation in many watershed villages has improved substantially. Impact on groundwater has also improved, though in a limited way.

# **CHAPTER-V**

## **MAIN FINDINGS AND RECOMMENDATIONS**

Some of the important findings emerged from the data analysis has been summarized here. Based on the findings, the important issues have been identified that need attention of the policy makers as well as of the project functionaries. The emerging issues and the recommendations are presented below.

### **I. MAIN FINDINGS**

#### **MWS profile**

- The 40 sample project villages belong to 28 micro watersheds spread over eight blocks in four districts of Orissa. Of these, 18 micro watersheds are being implemented under WORLP in seven blocks of three districts namely Bolangir, Kalahandi and Nuapada .The remaining ten are being implemented under OTELP in one block of Kalahandi and two blocks of Koraput district.
- Out of the 18 WORLP watersheds, as many as eight have started during 2004-05 followed by four in 2001-02, three in 2003-04, two in 2002-03 and one in 2000-01. However, all the ten OTELP watersheds have started during 2004-05.
- 15 out of 28 watersheds cover two villages each. Three villages are covered by as many as seven watersheds. There are six watersheds that cover one village only. On an average, each micro watershed is found to cover two villages.
- The highest 8 watersheds cover population below 500 each followed by 7 covering population from 500 to 1000 each .As many as 6 watersheds cover population more than 2000 each. The rest 7 watersheds target population 1000-2000 each.

## Profile of the Sample Villages

- Most of the sample villages are either Hilly (58%) or Forested (28%). Over 90% of the villages both project and non-project have household more than 50. About half of the villages have households from 100-250. Only a small percentage (7.5%non-project -17.5% project) of villages have households above 250.
- Both in the project and non-project villages, the SC and ST households together comprise 2/3<sup>rd</sup> of the total households.
- The average village size in terms of households of the project villages is arrived at 143 (ST-78, SC-16, OBC/OC-49) against 156 (ST-77, SC-29, OBC/OC-50) of the non-project villages
- The landless constitute nearly 1/5<sup>th</sup> of the households both in the project and non-project villages. More than half of the households belong to MF category (having land less than 2.5 Acres). The Small Farmer constitutes a significant proportion both in the Project villages (24%) and in the Non-project Villages (20%). The proportion of Big Farmers having land over 5 acres is insignificant in both the categories of villages.
- Of the total population in the sample project villages over 53% belong to ST against 48% in the non-project villages. The SC constitutes more than 12% of the population in the project villages compared to 18.5% in the non-project villages. An equal 34% of the population in both the category of villages belong to OBC/OC category
- The average population size of the project villages is arrived at 669 compared to 707 for the non-project villages. The averages for ST and SC population are 318 and 123 for the project villages against 354 and 87 for the non-project villages
- Agriculture (50%) is the major source of household income in the project villages followed by wage employment (39%), it being 39% and 49% for the non-project villages. A little more than 5% of households report allied agriculture (Forestry, Pisciculture, Animal husbandry etc.) and non-agriculture enterprise as the major source of household income.

## Profile of the Sample Households

- The average family size is arrived at 4.8. About 1/4<sup>th</sup> of the households have a family size at/below of three members. 2/3<sup>rd</sup> of the households have from 4 to 6 members. A small 17% of the households report family size at/above seven members
- Farming (48%) is the major source of household income followed wage labour (44%) as observed in the project villages. To the contrary wage labour (56%) is the predominant source of household income followed by farming (38%) in the non-project villages.
- Among the households in the project villages the highest 48% belong to Marginal Farmers category (having land below 2.5 Acres) compared to 39% in the non-project villages. The proportions of SF and BF in the project villages are 14% and 7% against 12% and 6% respectively in the non-project villages.
- Keeping in line with the occupational category, half of the households in the project villages report having land below 2.5 Acres. Over 16% of the households have land from 2.5 to 5 Acres. Households owning land above 5 Acres is arrived at 4% in the project villages.
- The average land holding size for the project village is arrived at 2.4 acres against 2.6 acres for the non-project villages.
- Of the landed 281 households in the project villages, as many as 54 (19%) households report have irrigated land mostly below one acre. Like wise 35 (15%) out of 229 landed households in the non-project villages own irrigated land mostly below one acre
- 64 households in the project villages and 66 household in non-project villages are found practicing shifting cultivation, all most all of them being STs belonging to Laxmipur and Bandhugaon blocks of Koraput district.

- The sex ratio (female per 1000 male) for the project villages is arrived at 1038, which is higher than the ratio of 1007 of the non-project villages. Irrespective of village status the SC and ST are found to have a higher sex ratio than the OBC and OC.
- Over 2/3<sup>rd</sup> of the persons both in project and non-project villages are found illiterate.
- Over 85% of the households both in the project and non-project villages belong to BPL category.

### **Projects Impacts**

- Increased access to physical assets in project villages is evident. There are 255 sprayers, 112 pump sets and 23 rice/oil mills in the project villages against 120, 102 and 13 respectively in the non-project villages.
- Community ware Houses (11 no.), Community Halls (13 no.), Drying Yards (5 no.) Threshing Yards (3 no.), Village Tanks (15) etc are the various community infrastructures found created in the watershed villages under the projects support.
- One out of every four-project villages has a grain bank against a small 7.5% in the non-project villages.
- The PDS is located in 60% of the Project villages compared to 33% of the non-project villages.
- As many as 265 out of 400 households surveyed in the project villages have livestock against 228 in the non-project villages. The average value of the livestock for the project villages is arrived at Rs. 7743/- against Rs. 7474/- for the non-project villages.
- Under the project support, mechanical measures of soil conservation structures such as Earthen Bonding and Stone Bonding (5600 RMT), Gully Control Structures (310 nos), Continuous Contour Trenches (3500 RMT) and Staggered Contour Trenches (1200 RMT) have been taken up in the sample project villages. Over 150 ha of non-arable land have been transformed into arable land

- There are 174 WHS, 365 dug wells and 327 farm ponds constructed in the project villages compared to 50 WHS, 135 dug wells and 46 farm ponds existing in the non-project villages. Under the programs support about 6,550 RMT of water channels, both earthen and concrete, have been constructed to irrigate the land
- Because of the water resources large areas in the project villages are under irrigation. During kharif over 2700 acres of land in the project villages are found irrigated against 544 acres in the non-project villages. During Rabi 1718 acres of land are irrigated compared to 245 acres in the non-project villages.
- Mixed plantations have been undertaken in 140 acres of community land in project villages against 45 acres in the non-project villages. Larger proportions of land are found allocated to Avenue plantation and Orchard development in the project villages than in the non-project villages
- Various development initiatives such as plantations, water-harvesting tanks, etc. have been undertaken on the common lands under the Programs. Community tanks are being largely used for pisciculture by the SHGs indicating increased access to CPR
- Nearly 2/3<sup>rd</sup> of the households in the project villages reported membership in a self-help group. A higher 261 households in the project villages report savings in the SHGs than 178 in the non-project villages. The no. of households saving in the banks in the project villages(29) is also higher than that of the non-project villages(14). The average savings in the SHG amounts to Rs.1097 against Rs.946 of the banks.
- Internal lending among the members in the SHGs is evident from the fact that from among 145 borrowers in the project villages, as many as 82 households report borrowing from the SHG. The average amount borrowed from the SHG is arrived at Rs.1020. Bank has been an important source of borrowing, 27 households in the project villages report borrowing from the bank against 12 in the non-project villages. As many as 36 households in the project villages report borrowing from the labour contractors, traders etc against 18 in the non-project villages.

- There are 311 SHGs formed in all the 40 project villages against 226 in the non-project villages. The grain banks are found established in 10 out of 40 project villages against 3 in the non-project villages. As many as 22 project villages report having VSS compared to a low 6 of the non project villages.
- Over 44% of the births in the project villages have taken place in hospitals against 29% in the non-project villages
- The predominant source of drinking water has been hand pumps both in the project villages (27) and in the non-project villages (30) as well. Over one fourth (27%) of the households in the project villages report access to tap water against 17% in the non-project
- Paddy, Ragi Groundnut, Cotton, vegetables etc are the major crops grown in the sample villages. Paddy is the main crop that covers about 82% of the cultivated area followed by cotton (9%) and ragi (3%) in the project villages. The shift in the cropping pattern in favour of groundnut, cotton, and vegetables is largely limited to the villages within the watersheds.
- During Ravi, the highest 40% of the cultivated area of the sample households in the project villages has been allocated to paddy followed by onion (19%), vegetable (16%), pulses (14%), sun flower (5%) and Tobacco leaves (5%). However, pulses are the major crop in the non-project villages commanding one third of the land area followed by paddy (28%), cotton (22%), oilseeds (11%) and onion (5%)
- There has been a sharp shift from the less water sensitive crops of minor millets like Ragi, Jowar Suan, Koda, Koshla, Kuri, etc. to fine cereals like rice and wheat in watershed villages. There has also been a shift in favour of non-food and non-grain crops like cotton, Tobacco leaves, Lemon Grass to name a few.
- The food self-provisioning in months of the households in the watershed villages is averaged at 5 months, which is much greater than 3 months in the non-watershed villages.
- Assured irrigation through water management structures as WHS, Check dams, farm ponds, dug wells/ring wells have been able to augment the crop output through the “crop area effect” and the “crop yield effect”. The “crop area effect” in



turn has been influenced by the “land area effect” and the “intensity of cropping effect”. Land development measures enabling cultivation of hitherto fallow lands have increased the land area under plough and thus the crop area. Irrigation has also increased cropped area through additional crops in Rabi season. This crop area effect has been subsumed in the crop intensity effect.

- There has been a step up in crop yield through a move from the traditional low productivity to improved farming system. The rise in yield is the combined effect of several mutually reinforcing factors like the use of irrigation water, the adoption of HYV seeds, the intensification of fertilizer application, the availability of extension services, the use of disease controlling pesticides and the adoption of land development measures.
- Multiple crop raising and higher yield have led to rise in prices of irrigated land. It is more than double than that of un-irrigated land in all the villages. The value of land both irrigated and dry lands has gone up in villages within watershed.
- Assured supplemental irrigation through reducing crop-risk has induced intensive use of farm inputs especially the HYV seeds and chemical fertilizers. The use of fertilizer in irrigated kharif paddy of HYV type is averaged at 95.5% kg Per acre against 43.00 kg. in the non-irrigated paddy.
- The project villages are commonly using the modern farm inputs like the HYV seeds, the chemical fertilizers, bio fertilizer / pesticides .The extent of their use in the non-project villages at present has either been of occasional or casual nature.
- Wage that contributes about 44% to the total household annual income is a major livelihood option of the people cut across social groups in the project area.
- Out of 374-wage employment generated per year per households, 170 man-days (45%) are from the agricultural and 204 man-days from the non-agriculture sources (55%) in the project villages. The non-project villages show a similar pattern with however lower 352 man-days created across the sources
- The wage employment in agriculture for ST shows the highest 178 man-days followed by 166 days for OBC and 152 days for SC. But in non-agricultural wage employment, the SC shows the highest employment of 224 days followed by 204 days for ST and 160 days for OBC.

- The average wage earned per annum per households is arrived at Rs21692 for the project villages against Rs.19168 for the non-project villages. Non-agriculture is the predominant source of wage earning (Rs, 13518) followed by the agriculture (Rs.8174) in the project villages
- The prevailing wage rate is found higher in the project villages than in the control villages. The wage rate above Rs.60 prevails in 40% of the project villages against 5% in the non-project villages. 15% of the project villages show wage rate of Rs.50-Rs.60 against a small 5% of the control villages. Nearly half of the control villages have wage rates betweenRs.30 and Rs.40 against 10% of the project villages.
- Over 3/4<sup>th</sup> of the villages have access to the Revenue/ Village Forest and Reserved Forest. Char is the most common NTFP available in the 44 no. Of villages followed by Mahua (38 no.), Tamarind (38 no.), Sal seeds (23 no.), Kendu Leaves (23 no.), Neem seeds (20no.), Harida/Bahada (14no.) and Anla (15no.). 28% of the households in the project villages are found engaged in the NTFP collection against 22% in the non-project villages.The average household income earned per annum from the NTFP amounts to Rs.1464 in the project villages to Rs.876 in the non-project villages.
- The gross annual income of the sample households in the project villages is averaged at Rs.32364 against Rs.29009 of the households in the non-project villages. The gross annual income for SC, ST, OBC and OC households in the project villages are arrived at Rs.30002, Rs. 31796, Rs.36998 and Rs.53950 against Rs.26003, Rs.28094, Rs.37698, and Rs.40817 respectively of the non-project villages.
- Income from wage is the dominant source of household income both in project (44%)and non-project villages (50%). Wage labour commands the largest source of income for the SC households both in the project and non-project villages. Income from agriculture is the next important sources of household income. The share of agriculture in household income ranges from 32 percent for project villages to 23 percent for non-project villages. About 8% of the households' income of the project villages comes from non-agricultural enterprises against 6% of the

non-project villages. Forestry contributes significantly to the household income (4.5%) of the project villages against 3% of the non-project villages.

- Assured supplemental irrigation has somehow effected the farm stabilization in terms of crop yield, total crop output and farm income. It is evident from the fact that 48% of the non-watershed villages reported crop loss (kharif) to varied extent due to drought in 2008 against 35% of the project villages
- Over 43% of households in the non-project villages and 29% of households of project villages are food insecure with zero month of food self-provisioning. The food self-provisioning for 4-6 months is reported by 42% of the households in the project villages against 29% in the non-project villages. 19% of the households in the project villages and 16% of the households in the non-project villages report food self-provisioning from 1 to 3 months. An equal 11% of the households both in the project and non-project villages report food self-provisioning above 6 months. Over 90% of the Households have access to PDS .
- The extent of migration in five sample blocks namely Patnagarh and Khaprakhol of Bolangir District, Boden and Komna of Nuapada district and Narla of Kalahandi district is phenomenally high with little difference in pattern between the villages within and outside the watersheds. 15% of the sample households in the project villages report migration. Among the migrants, the SC and ST constitute over 86% in the project and non-project villages.
- The average annual households expenditure on education for the project villages ranges from Rs.1790 for ST to Rs. 3158 for SC and 4108 for OBC. The corresponding figures for the non-project villages are Rs.2154, Rs.2892 and Rs.3333. Annual households expenditure on education for all project villages as a whole is averaged at Rs.2582 against Rs.2476 for the non-project villages.
- Annual household expenditure on health of sample households in project villages is arrived at Rs.2303 against Rs.2262 of the households in non-project villages. In both the villages the ST are found spending the least on health
- The IMR for the sample districts as a whole is arrived at 89 compared to the prevailing rate of 71 per 1000 live births in the state of Orissa. The IMR for the project villages is arrived at unbelievable low 64 against a very high rate of 109 for

the non-project villages. Neonatal Mortality Rate is prominent with over 3/4<sup>th</sup> of the infant deaths being in the neonatal period

- CPSW, the PIA in Komna block of Nuapada district has distributed pressure cookers and smokeless chullha in the project villages with the objectives of reducing women's drudgeries in cooking. About one fifth of the project villages have piped water supply constructed by Gram Vikash.
- Over 75% of the households are found participating in any one of the project activities. Household participation in IGP is quite high as it targets the youth, women and landless.
- The watershed development is better implemented in small and homogenous villages compared to the large and heterogeneous ones. A significant proportion of households representing the landless are left out from any direct benefit from the watersheds. About one fourth of the households are not members of any self-help groups promoted by the projects.
- The impact of the programs on the incidence and intensity of poverty in the project area is however not noticeable.
- There is a poor institutional relationship between the LSTs and the WDTs. The staff turnover among the LST/WDT is very high. The difference in the pay structure between the LST and WDT staff is found to be a discouraging factor.
- The project impacts are varied across different watersheds depending on types of activities chosen and management practices adopted by the PIA/FNGO. Although the same institutional structure is available across all watersheds, the spending pattern and community approaches are different which could be attributed to the visions adopted by the PIAs. The role and functioning of CPSW in Komna block of Nuapada district and of Gram Vikash in Thuamul Rampur block of Kalahandi district is noteworthy
- The roles of WDT of govt. PIAs in watersheds are largely confined to technical supervision of watershed works and to limited training and extension services relating to improved crop. The WDT is not that effective in the area of community

organization compared to the FNGOs. The LST has been a dragger on the project for their lack of motivation and skill and also a demoralizing factor for the WDT in view of the wide gap in pay structure.

- The PIAs have been instrumental in effecting involvement of the secondary stakeholders in the project areas.

## **II. RECOMMENDATIONS**

- The Watershed Development Committees/ Village Development Committees formed are not in a position to sustain the project activities and cannot independently handle the development activities when the services of PIAs/FNGOs are withdrawn. They need further capacity building.
- Social and human capital developments in the programs are poor that needs further strengthening.
- The impact of watershed development on livelihoods is a long drawn process. The focus of watershed development should be primarily on strengthening the ecological base such as water resources, wastelands, common property resources, etc., rather than economic impacts such as employment and income. The latter can be immediate and dramatic but not sustainable in the absence of the former. Regeneration of both-private as well as community forests should constitute core of the watershed treatment in the region.
- Market linkages for agricultural and forest produces need to be strengthened through organization of primary producers co-operatives as one onion producers cooperative formed in Komna block. The Primary cooperative should deal with procurement, value addition, collective bargaining etc at the cluster level.
- The Gram Panchayats in the project area are to be capacitated to own, control and manage the procurement and trade of NTFP. Orientation/training for the PRIs on PESA should be organized.

- Forest resources provide a substantial proportion to people's livelihood base. The PIAs/FNGOs should support SHGs to set up different NTFP enterprises for value addition to the collected NTFP.
- The effectiveness of community organization and sustaining the watershed activities depend to a large extent on the participation of all including the landless that are marginally addressed.
- The women SHGs are highly dependent on FNGO support in documentation and group management. Capacity strengthening is required with a view to enabling the groups handle their finances and internal controls independently.
- Many poor households in the programme areas are still out of the SHG fold. In most cases the inability to contribute saving subscriptions is identified as the cause. Efforts should be made to integrate them.
- To enhance employment opportunities for the landless labourer, the project should focus on increasing non-land based activities, income-generating activities, wage employment opportunities and individual or group enterprises. Proportionally greater resources have to be invested in very poor households compared to other households so as to give them a big push to go beyond the poverty limit.
- Skill development training to the very poor landless labourer / marginal farmer and women should be accelerated with provision of extended infrastructure for income generation activities.
- There is positive impact of the watershed programmes on crop production and soil/moisture conservation, however there is no significant reduction in poverty in the project areas, as a large number target groups consisting of landless and women are yet to be provided with suitable development/income alternatives.
- The funds generated under the Watershed Development Fund has to be utilized only for operation and maintenance of the assets created under the project. The efforts for recovery of loan/grant should be accelerated. RF should be linked to the need and performance of the groups and its proper utilization should be followed up.

- Human health should be integrated as an important component of livelihoods security. Knowledge and skills enhancement of the health care providers especially of ASHA, AWW on various health programs like National Malaria Eradication, Reproductive and Child Health, Revised National TB Control would facilitate the community to adopt good health behavior.
- The project should plan a tie up with Rural Water Supply and Sanitation Scheme to address the water and sanitation issues. The high fluoride contamination of the tube-wells of Boden block needs to be addressed.
- The role of WDT in the post project activities is important particularly for resource mobilization through inter-departmental coordination and for technical back up support in production activities and marketing and for recovery of revolving funds given to the SHGs.
- Effective linkages among the secondary stakeholders in the project area are important for successful implementation of the projects. The stakeholders are the Panchayat Raj Institutions, Line Departments as Agriculture, Forest, Fishery, Horticulture, Cottage Industries, etc. To effect involvement of other departments in the project areas, the PIA/FNGO need to play a pro-active proactive role in coordinating the services of the key stakeholders.
- The Projects need to foster external linkages, especially with various government programmes, banks and marketing agencies. The projects should intensify convergence of selective poverty focused programs such as NREGS, BRGF. Initiatives for access to social welfare, child development, and education and health schemes such as pensions for old people, widows and the handicapped should be taken up. Systematic convergence with NREGS is stressed upon.
- Efforts should be intensified to facilitate linkages between the SHG's and the Financial Institutions enabling the women to take-up income generating activities
- The Watershed Guidelines provide for Gram Panchayat to become a PIA. The projects should adopt a pro-active approach to appoint a few Gram Panchayats as PIAs on an experimental basis.

- The Watershed Associations should be effectively linked to the Gram Panchayats, so that the utilization of the development programs could be optimized.
- Number of women CLWs/Volunteers is relatively low in the Programs and hence efforts should be taken to recruit qualified female staff to achieve gender balance
- The existing salary structure of the WDT may be revised with a view to retaining skilled and trained staff. Because of high turnover of staff in the programs, regular capacity building interventions for new LST and PIAs staff is necessary.
- The women should be empowered and facilitated to articulate their needs in village level planning and also to participate pro-actively to monitor project activities and decision-making



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