NRMC

IMPACT ASSESSMENT & LESSONS LEARNT STUDY-OTELP

State Level Sharing Workshop

Design

Story Line

Context

- **OTELP districts were characterised by**
- High concentration of tribal households,
- Poverty (63% as compared to state average of 60.08%)
- Poor or non availability of basic infrastructures (viz. road, water supply, credit, primary health care etc.)
- High child mortality (137)
- Low literacy (female literacy was 11% and overall literacy was 24%),
- Poor access to clean drinking water and sanitation (< 3% households and toilets and nearly 37% had access to safe drinking water)
- High incidenace of landlesness (26.9% of households were landless) and small land holding size (86% of total holdings were small/marginal),
- Very low agricultural productivity
- High dependncy on forest and shifting cultivation and
- Food insecurity (Average food security period was 7.6 months in a year)

Story Line

Project Objectives

- Goal of the project was to ensure sustainable improvement in livelihoods and food security of poor tribal households through a more efficient, equitable, self managed, and sustainable exploitation of natural resources at their disposal and through off farm and on farm enterprise development.

Story Line

Strategy

- Building the capacity of marginal groups, tribal community and grassroot community institutions
- Enhancing tribal people's access to land, forest, water and other natural resources
- Increasing productivity of natural resources
- Facilitating off-farm & on-farm enterprise development as per needs of tribal households
- Strengthening the instutional capacity of line agencies and other stakeholders.
- Encouraging development of pro-tribal policy initiatives
- Promoting participatory processes, fostering self-reliance and respecting the indigenous knowledge and values embedded in tribal cultures
- Adoption of a process-centric, flexible, demand-driven approach to planning and execution and ensuring the relevance of activities to the needs and aspirations of the Tribal
- Forging partnerships with resource institutions, NGOs and goverment departments for promoting innovation, convergence and efficiency

Story Line

Outcome

- **Increased Incomes**: 172% increase in income among the participating households (from Rs 15926/- in 2005 to Rs 43,363/- in 2017). The income of households in project areas is 8% more than that of households from control areas. Income increase is almost equitably shared among all caste groups.
- **Increased Assets:** Participating households have more household assets (5%), agricultural assets (9%), land (1%) and livestocks (0.42% in terms of TLU) than control households. Average land holding size increased from 1.68 in 2005 to 3.62 ha in 2017. The average size of land holding and number of agricultural implements owned are relatively more among the ST beneficiatries.
- **Improved food security:** Percentage of families suffering food insecurity lasting 3 months or more has reduced from 25% in 2012-13 to 17.6% in 2017. 17% of ST HHs and 20% of BPL HHs in project areas have experienced food shortage for more than 3 months in last 12 months against 20% and 22% of control HHs respectively.

Story Line

Outcome

- **Social Security:** All project villages have acces to MGNREGS. 84% of surveyed households in project areas possess job cards against 83% of control households.
- **Access to water and sanitation:** 93% of HHs in project areas have access to clean and safe drinking water, which is more than state average of 89% and national average of 90%; 20% of HHs are presently having access to improved sanitation facilities in OTELP intervention areas against a state average of 29%.
- **Education**: There is a 30% increase in the total number of students enrolled per year in OTELP districts during 2005-2014, at par with state average

Data Analysis

- Data Analysis:

Performance of components, indicators and project management concerns viz. Relevance, Effectiveness, Efficiency, Equity, Gender, Sustainability, Cultural Identity etc.) have been attempted to be presented through a quantitative appreciation.

Scoring matrix has been followed. While scoring, difficulty & challenges of project area has been taken into consideration

Score	4	3	2	1
Rating	Highly Satisfactory	Satisfactory	Moderately Satisfactory	Poor
Description	Component/ Indicator has achieved the envisaged impact. Normative concerns of Equality, Cultural Identity and Sustainability have also almost ensured.	Almost achieved the envisaged impact. Some of Normative Concerns have not been ensured.	Moderate achievement. Most of the Normative Concerns have not been achieved	Poor achievement. Most of the Normative Concerns have not been achieved

Livelihoods Enhancement

Capacity Building for Empowerment

- Results & Impacts:

Village Development Committees (VDC) formed at natural village level all of which hold regular meetings and formulate participatory micro-plans for watershed development (moderately satisfactory)

VDCs were found to be fully functional in 37% of the villages visited and in rest 63% of cases the VDCs were partially functional/non-functional. NRMC survey (2017) highlighted that 40.27 % households had received training on institution building.

A major concern seemed to be the unsustainability of the institutions beyond project period. It was seen during the expert field visit that there was lack of active involvement of the VDCs in 63% locations. Functional VDC with members well aware of the systems and running it efficiently could be seen in only 2 of the 16 villages visited

In 63% villages the village level plans is not available currently. Though in all these cases the resolution books speaks about a micro plan with a “Vulnerability Analysis” and the people recollect the process on being prodded. Expert field visits found that in some villages VDLP were elaborately done. But people’s participation in the plan seemed limited. In certain cases even the NGO staff, could not explain the plan or its details. However there were few instances where the plans were prepared systematically.

A cross check of the benefits received by the poorest people (as laid down in the Vulnerability Analysis in the VDLP) was done in the villages to understand the extent and efficacy of targeting the programme. It was found poor targeting and on an average not more than 2-4 members of the poorest categories (as listed in the Vulnerability Analysis) had received any income generation support from the programme.

Capacity Building for Empowerment

- Results & Impacts:

SHG formed/strengthened of which 75% are well managed, self-reliant and autonomous based on the active participation of all members (Satisfactory)

SHGs existed in all the OTELP villages visited or surveyed. Most of the villages had existing SHGs, some of which got new lease of life during OTELP. Less than half of the HHs (43%) reported regular meetings of the SHGs (NRMC Survey, 2017)

Eight out of sixteen SHGs were defunct after the withdrawal of OTELP as could be seen in the expert visit. However, SHG coverage in project villages was found to be better (66% of the sample households) than control villages (28%) (NRMC Survey, 2017). One of the reasons for SHGs getting defunct was the apprehension to save money in the banks, as the banks did not allow withdrawal of money, and adopted a strategy of adjusting against old loans taken under different government scheme

Following the Exit strategy developed in 2010, OTELP attempted to form federations of SHG at watershed level and apex federations at Cluster (10 Watershed) level to ensure self-help in sustaining them. Accordingly OTELP started formalization of these institutions through registration under Orissa Self Help Cooperative Act, 2001, opening of bank account and transferring fund from VDC to federation and building their capacity. After repealing of this act by GoO in 2013, the process was bottlenecked and with withdrawal support reduced. There is a considerable work required around these higher level institutions to make SHG self-reliant and autonomous on long run and OTELP plus can be an opportunity.

Capacity Building for Empowerment

- Results & Impacts:

1,600 User Groups/sub-committees formed, 60% of which effectively use and maintain assets. (Satisfactory)

Well designed and massive physical infrastructure could be seen in every village, which varied from farm ponds, soil and stone bunds to check erosion, check dams, diversion based irrigation structures, wells for irrigation and drinking water, houses for the poor and homeless

But substantial amount of these structures are not maintained by the community, and have either begun to break down or soon will require major maintenance work. In at least 5 villages, it was found that an elaborate system of water for domestic purposes have been constructed by OTELP, but the water supply systems are currently not working as there is no one to maintain it, with no ownership from the community.

Against the target of 60%, only 25% of households surveyed revealed that the user groups continue to operate and maintain assets and another 10% of the respondents agreed about the existence of user groups. About 40% of respondents stated that the UGs are defunct now.

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Capacity Building for Empowerment

- Results & Impacts:

Women participate effectively in the management of community institutions (SHGs, User Groups, and VDCs) (Moderately satisfactory)

Interestingly 76% women said that they had been a part of the initial planning of the OTELP, even if they had not been VDC members. OPR (2008) has recorded women's participation in community institutions at 49 %.

Sixty two percent of the people interviewed have attended OTELP organized training programmes. Highest participation in training programmes was reported in Gajapati and lowest in Koraput (Annex Ch.3.1 Figure 1).

It can be said, in the area of skill transfer, which has also been extensively done under OTELP, no follow up, has led to most of the partner community not retaining the skills inculcated.

Capacity Building for Empowerment

- Lessons Learnt:

  - ✓ Sustainability of VDCs and SHGs require longer handholding with close implementation and monitoring of an Exit strategy
  - ✓ Women's participation in VDC leadership and decision-making is a matter of concern considering the entrenched patriarchy in society as well as tribal culture. Sensitive and focused handholding is crucial to include women's interests in the micro-planning process and help them influence decisions
  - ✓ Despite adequate efforts by the project to ensure at least one book writer in each village, in most of the cases, bookkeeping is being done by Community Resource Person/NGO staff, making the practice unsustainable. Low level of literacy remains a challenge for the project.
  - ✓ Vulnerability analysis, though was done is available only in 37% villages, making it difficult to monitor the targeting and avoiding elite capture.
  - ✓ Limited participation of people in the process of development of VDLP.

Land and Water Management

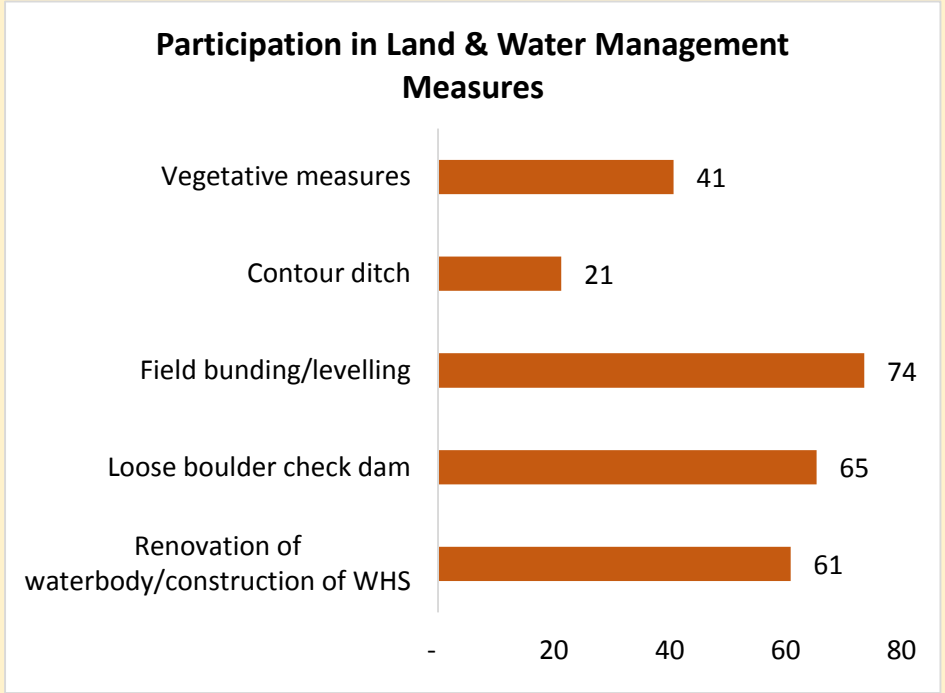
- Results & Impacts:

Status, quality and use of Soil Moisture Conservation and water harvesting/diversion structures (Satisfactory)

The nutrient and organic carbon content of soil in project areas is now comparatively more than that of control areas as per the soil analysis done through NRMC Survey (2017). There has been improvement in vegetation cover in some places, which found to be varied from 20% to 60%. Further, the animal feed shortage has been reduced by almost 50% in the sample villages, as noted during FGDs carried out by experts

Expert visits also noted positive changes in surface and subsurface water resources. This could be possibly because of re-emergence of dried springs and increase in creek flows during dry periods in most of the watersheds.

Nearly 86% of sample households have undertaken or directly benefited from SWC/water harvesting measures through OTELP. Of them, 74% have either constructed contour bunds or performed land leveling followed by 65% of respondents who constructed loose boulder check dams, 61% have renovated water bodies or created new WHS, 41% have undertaken some vegetative measures and 21% have constructed contour ditches (NRMC Survey, 2017).As a result of the



Land and Water Management

- Results & Impacts:

Status, quality and use of Soil Moisture Conservation and water harvesting/diversion structures (Satisfactory) Continued…

Expert visits noted reduced rate of soil erosion, downstream sedimentation, improved soil moisture, increased groundwater recharge, increased surface water availability for a longer duration.

About 40% of surveyed households also reported that there has been improvement in availability of water for agriculture. Agricultural productivity has increased from 6.9 quintal/ha in 2005 to 7.92 quintal/ha in 2017. Around 10% of surveyed households in project areas were found to be growing high value crops like cotton, sugarcane and lemon grass. There has been improvement in agricultural activities and the farmers in the project areas are no more restricted to single cropping and a majority of them (65%) are cultivating two or more crops. There has been a significant increase in the percentage of farmers growing vegetables in the project areas. As against, 36% of control households, 47% of the project households are growing vegetables.

Of the surveyed households, 54% rated the land and water management structures as satisfactory followed by 26% of households rating them as good and 19% rating as poor. Further, 36% of the respondents reported that the structures are intact, 49% reported that the structures are partly damaged, 14% reported as fully damaged and only 1% agreed that these are now silted up and of no use.

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Land and Water Management

- Results & Impacts:

Status, quality and use of Soil Moisture Conservation and water harvesting/diversion structures (Satisfactory) Continued…

A majority of the water resources development structures will however, require repair and maintenance in near future, as per observation of the expert team. The Impact assessment Report (2010) has also reported that some Diversion Based Irrigation (DBI-Piped) structures have deteriorated. The systems that were taken-up for revival had almost gone defunct for want of desilting and repair of damages to channels. Also, poor quality of construction in some cases is another issue with leakages and breaches in lined and unlined channels especially when these are intersecting with natural drainage courses. This also reflects on low levels of motivation of the farmers which thereby sets in a vicious cycle of non-use, no- maintenance and assets getting defunct.

In spite of all these, many villages are now having better access to water resource through OTELP- DBI and gravity flow than control villages. Contribution to Watershed Development Fund (WDF) as per norm was practiced earlier by the communities. About 82% of surveyed households reportedly have contributed to VDF during the project period. However, no fund is being utilized for maintaining the infrastructures

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Land and Water Management

- Lessons Learnt:

  - ✓ Investment on land and water management structures has been maximum. While it has provided options for wage employment and have been able to contribute towards erosion reduction and productivity enhancement benefits, there are issues around their sustainability and equitable sharing of benefits among poor tribal. Strategy of OTELP was to settle land rights before taking up watershed development measures, to ensure passing on benefits to land owners. In absence of that and with the usual ownership patterns in regional watersheds skewed in favour of well off and other caste (who own valley lands), benefits from watershed measures are appropriated more by them. More focus on engineering measures (e.g. earth and stone works and structures), without adequate integration with biological components (viz. trees, shrubs and grasses), while, has provided more employment has affected their sustainability. Moreover the slope, soil type and rainfall pattern in project watersheds, necessitate more focus on biological or biomechanical measures, as the success of such measures demonstrate in Machhkund catchment (viz. grassed water ways, plantations) and reflected in tree-based farming systems (viz. orange and cashew) practiced by tribal communities. Famous Saora terraces also indicate the efficacy and sustainability of incremental approach using local materials, family labour and long gestation period. Such indigenous practices also ensure equity by enabling the poor to maintain control over land ownership, when the land value appreciates slowly with land development, which is otherwise difficult when land develops faster. These hard learnings, though were available, could not be effectively integrated into land and water management activities in OTELP.

  - ✓ Sustainability of structural and engineering measures are incumbent upon institutional support and efforts around maintenance. While community participation was evident and recorded in planning, execution and early stage maintenance, long-term care require more investments in institution building and handholding, which unfortunately got tapered towards end. Pure reliance on engineering measures without biological reinforcement, also calls for more precision and accuracy in design and execution which become difficult to execute with the human resources that are available with field management units..

Agriculture Development

- Results & Impacts:

Increase in incomes from natural resources shared equitably among all socio-economic groups (Moderately Satisfactory)

The project interventions have contributed positively to the increase in income of targeted communities. As per PCR (2016) income excluding the value of family labour, increased from INR 1, 938 to INR 36, 990 at project completion. Farm income of households in project areas has increased from INR 4,756 in 2005 to INR 9,785 in 2017 at a CAGR of 6.2% (NRMC Survey). Farm households in project areas are earning 13% more from farm than households in control areas. The growth of income from off-farm sources (NTFP, livestock etc.) for the same period is 1.7% i.e. from INR 7,677 in 2005 to INR 9,435 in 2017. Similar growth in off-farm income was observed in case of control households.

Among different socio-economic groups, households belonging to Other Backward Castes (OBC) earned more from both farm and off-farm sources than households belonging to Scheduled Castes (SCs) and Scheduled Tribes (STs) (Table 2). Considering the fact that 90% of project beneficiaries are from Scheduled Tribes and Scheduled Castes, it can be said that the project has ensured fair equitable sharing of increased income particularly from farm sources.

Farm and off farm income of all socio-economic groups in 2017

	Farm Income (INR)		Off farm Income (INR)	
	Project	**Control**	**Project**	**Control**
OBC	13,263	12,625	15,000	3,440
SC/Dalit	9,696	7,086	5,250	3,442
ST/Adibasi	9,734	8,638	9,425	9,661
Total	**9,785**	**8,661**	**9,435**	**9,402**

Agriculture Development

- Results & Impacts:

Ownership of agricultural land by poor tribal households increased from X, 000 ha to Y, 000 ha (Moderately Satisfactory)

It was found that the project has undertaken several initiatives to enhance ownership of agricultural land among the poor households. Besides 15,620 homestead and 8,611 FRA titles, 2,006 landless households were provided farmlands on 565.2 ha (average is 0.7 acre) by the project. There has been marginal increase in agriculture land for poor tribal households through such land allocation.

Of the 1,336 surveyed households in project areas, 62 households (4.6%) reported to have received agricultural land from OTELP. Against 70% of control households, 80% of the project households were found to be owning agricultural land and their average size of land holding was 2.28 acre, while in case of control areas, it was 2.11 acre (NRMC Survey, 2017). This indicates the ownership of agriculture land in terms of size and percentage of access is marginally higher in OTELP area.
It was earlier reported that 91% of project beneficiaries own productive land and the average size of land holding was 2.6 Acre (OTELP Top up Document, 2013).

Agriculture Development

- Results & Impacts:

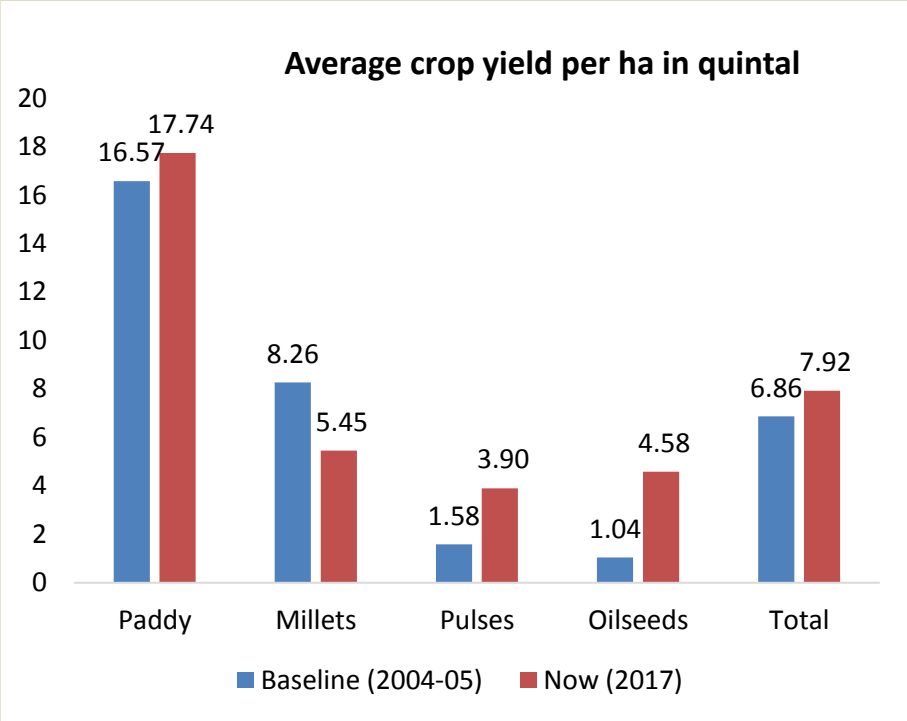
Agricultural productivity/ha sustainably increased at least 50% by EOP (Moderately Satisfactory)

The interventions made by the project were found to positively affect farm productivity. Agricultural productivity has increased from 0.69 t/ha in 2005 to 0.79 t/ha in 2017 in project areas

Highest growth in productivity was observed in case of oilseeds and pulses during 2005 to 2017, whereas, productivity in millets has declined from 8.26 quintals/ha to 5.45 quintals/ha during the same period.

The growth in paddy was only 7% during this period. However, it is nearly 13% more than control villages (1.6 t/ha).

Among the project districts, highest productivity in paddy was reported in Malkanagiri (2.2 t/ha) followed by Koraput (2.1 t/ha), and lowest productivity was found in Kalahandi (0.99 t/ha).



Agriculture Development

- Results & Impacts:

Agricultural productivity/ha sustainably increased at least 50% by EOP (Moderately Satisfactory) Continued…

It was also found that the productivity of vegetables and spices are comparatively higher in project areas. The average yield of vegetables per hectare was 2.5 t in project areas against 2.2 t for control areas. Similarly, the average productivity of spices in project areas was found to be 1.3 t/ha against 0.7 t/ha in control areas.

About 37% of surveyed households reported yield enhancement due to adoption of practices recommended by the project. Increase in agricultural productivity is attributed to use of quality seeds, improved agricultural practices, crop rotation and improved irrigation sources (NRMC Survey, 2017). PCR (2016) attributes productivity enhancements to timely sowing, line-sowing, weeding and use of quality seeds. Average cropping intensity has also increased from 101% at baseline to 118% at completion in rainfed and from 123% to 265% under irrigated condition.

The 15% growth in farm productivity during this period is relatively lower than that of some of the earlier findings and also the expectation of this indicator. OTELP top-Up Document, 2013, had reported 25% increase in farm productivity. Project Completion Report (2016) had reported 78% increase in farm productivity with a qualifier that the increase was because of a very low-baseline. It also reported that on an average, a household's production increased from 532 kg/household to over 1,283 kg of cereals, pulses and oilseeds.

Lack of follow up and discontinuation of handholding support could have contributed to sudden decline in agricultural productivity in project areas post OTELP. Another reason identified was, 9 out of 14 sample blocks were affected by drought in 2015-16.

Agriculture Development

- Results & Impacts:

Increase in area under Irrigated crop production (Satisfactory)

As per PCR (2016), the gross cropped area in project area has increased by 49% (from 52,100 ha at baseline to about 77,470 ha at project completion), irrigated area (potential) increased by 480% (from 3,390 ha to 19,635 ha), area under plantation and fruit crops increased by 367% (from 1,290 ha to 6,020 ha) and the fallow land decreased by 85% (from 13,040 ha to 1,790 ha). It also reports addition of 20,047 ha of irrigated area indicating it as 7.68% increase. Increased availability of irrigation has facilitated cropping in dry season. For example, summer paddy area has increased by 10-25% in Nawarangpur, Koraput, Rayagada and Gajapati. In case of Gajapati most of the farmers are cultivating early varieties of paddy whereas, in Kalahandi late varieties are mostly grown.

PCR, 2016, attributes, two out of three the key drivers of the economy of the project to irrigation. First one being vegetable production for sale with reasonable market access with micro-irrigation and second irrigated agriculture and sale of surplus production. Average area under irrigation has increased from 0.085 ha to 0.5 ha/household during the main crop season with irrigated area cropping intensity increase from 123% at baseline to 265% at Completion. Some 26,720 households had accessed irrigated agriculture in the project. Average household net income from irrigated sub-project was reported as INR 1, 23, 730 (BCR 2.73) against INR 21,495 (BCR 1.77) from rainfed subproject (PCR, 2016).

The cropping patterns now followed by the farmers in the assured irrigation areas include paddy-vegetables and paddy-mustard in Kandhamal, paddy –black gram and vegetable – vegetable in Koraput, paddy-vegetable, paddy-chick pea, maize-black gram and paddy-field pea in Kalahandi and paddy-paddy, paddy-vegetable, paddy-sunflower and maize-black gram in Gajapati (NRMC Survey, 2017).

Over 29, 000 households took up vegetable cultivation using micro-irrigation (PCR, 2016)

Agriculture Development

- Results & Impacts:

New technologies build on tribal people's indigenous technical knowledge (Satisfactory)

While the introduction of new crops, inputs and technologies have largely followed a mainstream and modern approach, focus on promotion of millets, tubers, local crops (niger, pigeon pea, turmeric and vegetables), albeit with improved varieties indicate the blending of modern technology with indigenous ones. The focus and achievements in ragi (a staple food crop for the tribals) in collaboration with MSSRF, tubers with CTCRI and pigeon pea with ICRISAT present good examples of such technology and knowledge convergence through partnerships between farmers and researchers.

Unlike crops, traditional sustainable agricultural practices, however have hardly been blended, but largely attempted to be replaced, like local varieties. However, post-project, few such old practices were noticed to be continued. The practice of paira cropping of field pea/ black gram/ green gram, 15 days before harvest of Kharif paddy under non-irrigated situation was reported in Gajapati, Kalahandi, Koraput and Kandhamal during expert field visits. Similarly, some examples of local seed storage techniques have been observed during field visits and reported under next indicator.

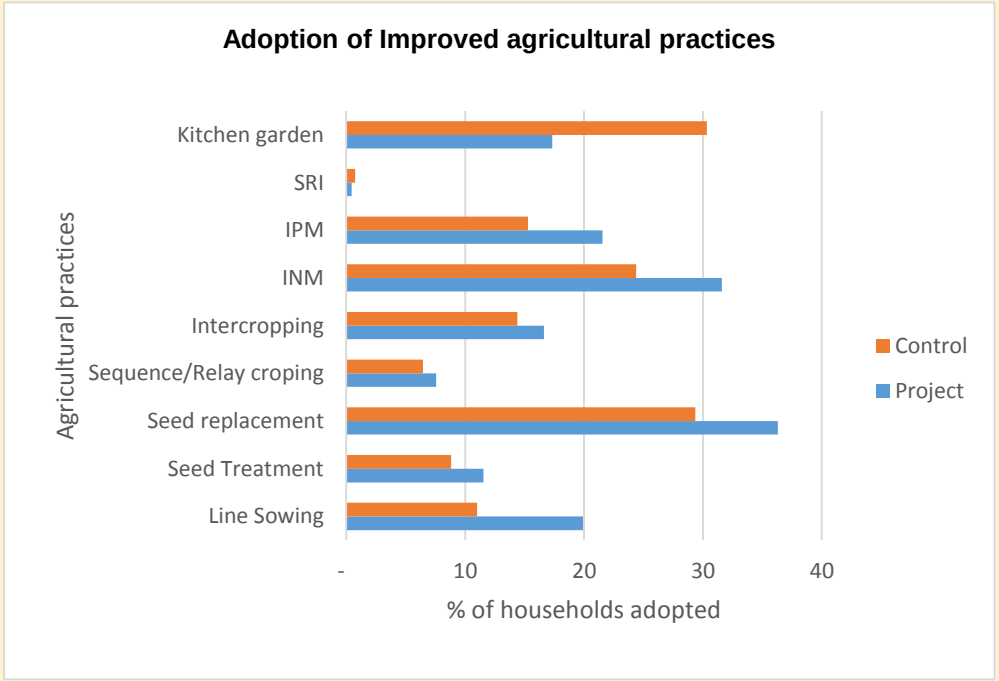
Agriculture Development

- Results & Impacts:

Farmers adopting technology recommended (Satisfactory)

Around 80% of surveyed households are currently using the improved practices like line sowing, sequence cropping, seed treatment etc. promoted by the project. This is slightly more than the values reported in PCR, 2016 (77%) and OTELP top-up document, 2013 (73%).

The reason of non-adoption of practices like SRI was difficulty associated in raising alternate nursery and non-suitability of land for practicing alternate wetting and drying. About 50% of the adopters of new practices have received training on the improved practices, 17% were benefited from demonstration, 14% were provided exposure and 11% were given technical guidance by the project. Reasons for adopting the improved practices were higher production (in 61% of cases), less costs involved with the practices (in 31% of cases), farmer friendly (in 6% of cases) and resilience (in 2% of cases). Almost half (47 %) of respondents stated that farm production has significantly increased due to adoption of improved practices and 12% of the adopters have experienced improvement in quality of produce (NRMC Survey, 2017).



Agriculture Development

- Results & Impacts:

Increase in number of agricultural implements (Satisfactory)

OTELP has distributed a number of different agricultural implements like sprayer, paddy thresher, winnower, weeder, diesel pump set, power tiller, tractor, micro-drip irrigation kit etc. among the beneficiaries to reduce workload and improve farming efficiency. As a result, the average number of agricultural implements owned by a household in project area has increased.

The average number of farm implements per household in project areas now stands at 1.65 against 1.52 for control villages. One fifth (18%) of households reported about receipt of farm implements from OTELP. The households also reported 15-30% increase in yield of major crops and substantial reduction in labour cost due to use of farm implements (NRMC Survey, 2017).

The tractors provided to the SHGs are well operated by them and most of the SHGs have repaid their loans. The household implements are not well maintained by the beneficiaries, as observed in expert visits.

Agriculture Development

- Lessons Learnt:

  - ✓ All the agricultural development activities planned and implemented by the project were aimed at enhancing productivity, augmenting food security and farm income. Through an elaborate process of collaboration with resource institutions, building of local cadre and farmer groups, intensive capacity building programs and strategic extension, OTELP has introduced new crops, varieties and technologies. Despite having such a strategic approach, there is limited technology dissemination and adoption by farmers. Overall coverage of activities and impacts observed are moderately satisfactory. As per PCR (2017), overall coverage of agriculture and horticulture development activities remains modest and crop productivity, as compared to overall potential and as judged from the standing crops and discussions with project beneficiaries during field visits, remains low.

  - ✓ Agricultural activities in OTELP has been premised around promotion of research recommended improved practices with high external inputs. This is based on an assumption that traditional agriculture practices and low external input systems are inefficient. Though participatory practices have been adopted, and some marginal activities around millets, tubers and organic practices are taken up, focus has been to replace local biodiversity and traditional practices. The results in terms of yield increase and technology adoption, however, has not been encouraging. With research providing contradicting evidence in terms of climate-adaptive and nutrition potential of tribal food systems and markets opening up for such crops, a revisit of such strategy is the need of the hour.

  - ✓ Agriculture intensification around irrigation has been the main stay of the OTELP, while there are significant limitation to expansion of irrigation, given the terrain, soil type, land ownership pattern and rainfall distribution. The fact that a farming system approach with more focus on trees, perennials, rainfed crops and varieties and small-ruminants, integrated effectively at household level is locally more stable ecologically, economically and culturally, have not been adequately appreciated.

Rural Financial Services and Enterprise Promotion

- Results & Impacts:

At least 75 percent of SHGs established have fully functional savings and internal lending operations and have provided loans to at least 75 percent of their members (Moderately satisfactory)

Of the 40 SHGs interacted by expert team, internal lending was practiced in 25 percent. Among the project households surveyed, 40% reported to have fully functional savings in comparison to 19% control households.

Of the project households (n=198) who borrowed money in last 12 months, 15% have availed credit from SHGs, while it was 9% for control (n=77). Average amount borrowed has increased from INR 9,130 in 2015 to INR 13,313 in 2017

Among the project households, 64% save regularly as against 27% percent among the control households. In terms of savings and internal lending parameters, project SHG are performing better than control groups (NRMC Survey 2017).

40 percent of SHGs accessed institutional credit for off-farm enterprise development (Highly Satisfactory)

Out of the households, that borrowed money for off-farm enterprise development, 36% have accessed institutional-credit (NRMC Survey, 2017).

According to MIS data (AOS, 2015) 68 % of SHG loans were for off-farm activities and production purposes. As per PCR (2016), 1755 SHGs took up various enterprises and income generating activities using RFS loans. More than 49 % of SHGs have accessed institutional credit to support members for off-farm enterprise development.

Rural Financial Services and Enterprise Promotion

- Results & Impacts:

Indebtedness to moneylenders as a percentage of overall indebtedness declines (Highly Satisfactory)

Of Together, the women SHG members reported to manage a corpus of INR 235 million, including their savings and the funds provided under RFS (PCR, 2016).

Indebtedness to moneylenders as a percentage of overall indebtedness declined from 44 percent (baseline) to 25 percent among the project households, while the control households has 33 percent indebtedness (NRMC Survey, 2017).

As per JRM Report (2016), the dependence on high cost moneylender loans had decreased significantly in the project areas. About 63 % of the members had access to credit (both from SHG Revolving fund and bank linkage) as against the baseline of 15 % (2005) from SHGs (PCR, 2016). As per AOS (2015), 73 percent households reported improved access to credit and 67 percent formal access to credit. For women, however the improved access to credit was 80% (PCR, 2016).

Net incomes from NTFP sustainably increased by at least 50 percent (Satisfactory)

Average income from NTFP was found to be INR 6,147 among project households as compared to baseline average of INR 1,440 and control households average of INR 6,846.

This increase can be attributed to increase in price of NTFP over last few years and expanding market opportunities because of different interventions (collectivization, weighing, storage, value addition, MSP, market linkage etc.) by Government including OTELP and private actors. However, it has led to achievement of the indicator.

Rural Financial Services and Enterprise Promotion

- Results & Impacts:

Off-farm employment and incomes of poor tribal households, including the vulnerable (landless, women-headed households) increased by 50 percent. (Moderately Satisfactory)

The average income from off-farm activities of project households is INR 9,435 as compared to INR 9,402 among control households as against the baseline average of INR 7,677.Thus there has been a general increase in the average income from the baseline both among project as well as control HHs.

Rural Financial Services and Enterprise Promotion

- Lessons Learnt:

  - ✓ It has been observed that a lot of SHGs formed under the project have become or are on the verge of closing over the last few years. The capacity building of members and functionaries was found particularly lacking and is visible in internal lending among the members in the groups, in dealing with outside officials like banking, in utilising various grants and seed money and book keeping. These coupled with the fact that many have become defunct as SHG and many have deserted the IGA taken up halfway indicate the need of long-term and deep handholding. Success of those continuing, indicate the existing tenacity and scope of entrepreneurship, which requires to be sensitively nurtured and incubated, appreciating the strength and limitations of tribal culture. As indicated in PCR (2016), while weaving of linkage with OLM, OTELP Plus, OPELIP etc. are critical, their higher-level collectivization and linkage to professional agencies (viz. RNGO) are required to propel them to next level and also to build an enabling ecosystem.

  - ✓ In the case of income generating activities, the ones where people already had the skills of an enterprise like skill based occupations were doing particularly well while activities like poultry (broiler) where the risks are high (with higher external dependence) have not been successful. This again puts a question mark on the kind of training, 360 degree handholding and ecosystem building (viz. integrating banking and insurance services) that have been extended and shows that more required to be done. Enterprises like goat rearing where the risk levels are low have shown a better promise and should be made sustainable, with learning like reliance on local breeds, maintaining appropriate herd size and ensuring accountability of insurance services. The attitude of financial service providers like banks and risks coverers like insurance companies has not been very positive, cooperative and tribal-sensitive. Bankers for example were not very keen to let people withdraw savings even if it has accumulated a lot and insurers were seen to be interested in collecting the premiums and not so much interested in actually covering the risks. The JRM Report (2016) had rated this sub component as moderately satisfactory.

  - ✓ Lack of a comprehensive MIS to track the activities of SHG and their Federation has compromised a programme-wide

Food Handling and Security

- Results & Impacts:

All tribal households enjoy year-round food security (especially during the lean period from May to August) from PY6. (Satisfactory)

All eligible households or 94% of project households have accessed PDS benefits in 2017.

Of the 1336 project households surveyed, 48% reported improvement in food availability post OTELP implementation.

Little more than half (57%) tribal households reported some food insecurity varying from less than a month to more than 6 months in last 12 months.

This was 60% in case of control areas. About one fourth (23%) of families had faced food shortage during the previous four weeks and 31% had the same in the last 12 months.

May to August is clearly the most difficult period with regard to food access accounting for more than 80 percent of total food shortage cases.

Food Handling and Security

- Results & Impacts:

At least 50% of participating below poverty line households shows increased food security (Satisfactory)

As stated in PCR, 2016, (drawing from AOS summary, 2010-15) 48% of project households were having food shortage in 2010, which became nil in 2015. Further, 20% of the BPL households and 3% of the APL households in project areas have experienced food shortage for more than 3 months against 22% and 13% of households in control areas respectively (NRMC Survey, 2017).

As OTELP has aimed to ensure that at least 50% of BPL households show increased food security, it can be said that, the project with a coverage of 70% of BPL households has contributed to ensuring food security of the beneficiaries in general and BPL households in particular, but external factors have also played considerable roles to strengthen HH's food security.

Among the ethnic groups, SC/ Dalit households are more vulnerable to food insecurity (Table 14). However, only 17% of the tribal households in project areas have experienced food insecurity for a period of more than 3 months as compared to 20% in control areas. Overall, percentage of families suffering food

	% of HHs experienced food shortage in last 12 months		% of HHs experienced food shortage for more than 3 months in last 12 months	
Demography	**Project**	**Control**	**Project**	**Control**
ST/Adibasi	57	60	17	20
SC/Dalit	70	72	35	28
OBC	50	50	17	29
Economic Category				
BPL	62	65	20	22
APL	60	63	3	13

Food Handling and Security

- Results & Impacts:

Increased food consumption and enhanced dietary diversity (Satisfactory)

Around 30% of households in project areas now have kitchen garden against 17% of households in control areas (NRMC Survey, 2017).

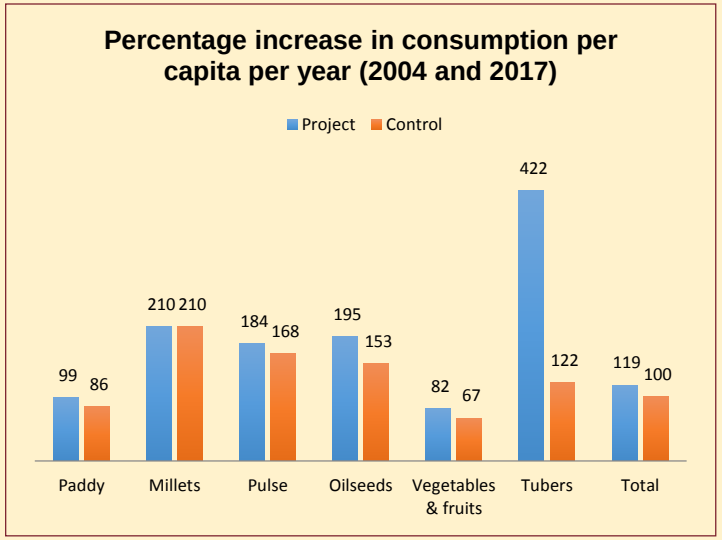
As a result of interventions, 91% surveyed households reported to eating 3 meals a day and 8% families reported to having 2 meals a day. As a result of substantial benefits in the area of water conservation and agriculture, there is an abundance of pulses, and every family was found to be eating pulses

The women were found to be aware of the necessity of good food and nutrition for healthy lives. Almost half (45%) of the women reported to eating along with the families and do not depend upon left over food.

However, the decision of land use for food crops or commercial crops continues to be influenced by patriarchy with only 8% only women member and 21% jointly involved in decision making on land use

Family consumption of food in quintal (per year)

District	Baseline (2004-05)	Now (2017)	
		Project	Control
Paddy	3.8	7.58	7.06
Millets	0.42	1.3	1.3
Pulse	0.19	0.54	0.51
Oilseeds	0.19	0.56	0.48
Vegetables & fruits	0.49	0.89	0.82
Tubers	0.09	0.47	0.2
Total	**5.18**	**11.34**	**10.37**



Food Handling and Security

- Lessons Learnt:

  - ✓ Multipronged strategy of the project to ensure food security through interventions around food production, increase in income, and enhanced access to entitlements along with targeted addressing through food distribution and handling and crop diversification has yielded the result in terms of overall improvement of food and nutrition access among project households. Increase in non –farm income and increased production, has resulted in almost three fold increase in the average of total Income, which has contributed to about 36% increase in expenditure on food. Nutrition garden and crop diversification has led to doubling and trebling of consumption of nutritious crops. Food distribution, when in operation, had addressed about 3 months of security.

  - ✓ The fact that still about half of the households of vulnerable and project target groups like STs and SCs continues to suffer from food insecurity, indicate the challenges in terms of adequate targeting and the usual risk of elite capture. Limited achievements in terms of ensuring land rights over food producing lands and lesser focus on local tribal crops including forest food (through forest rights) could be the reasons, but require more investigation.

  - ✓ Interestingly intra household food security improved with greater access of women to food within their households, while decision making on food production continue to be controlled by male bastion.

  - ✓ The situation depicts enhanced productivity, entitlement and access and fair improvement in gender-equity, however, equity and cultural identity remain partially attended and demand more focused and strategic attention.

  - ✓ The Joint Review Mission (2014) rated this component satisfactory and the same is the impression of the NRMC Survey team.

Community Infrastructure Fund and Development Initiatives Fund

- Results & Impacts :

All tribal households enjoy access to safe drinking water (Satisfactory)

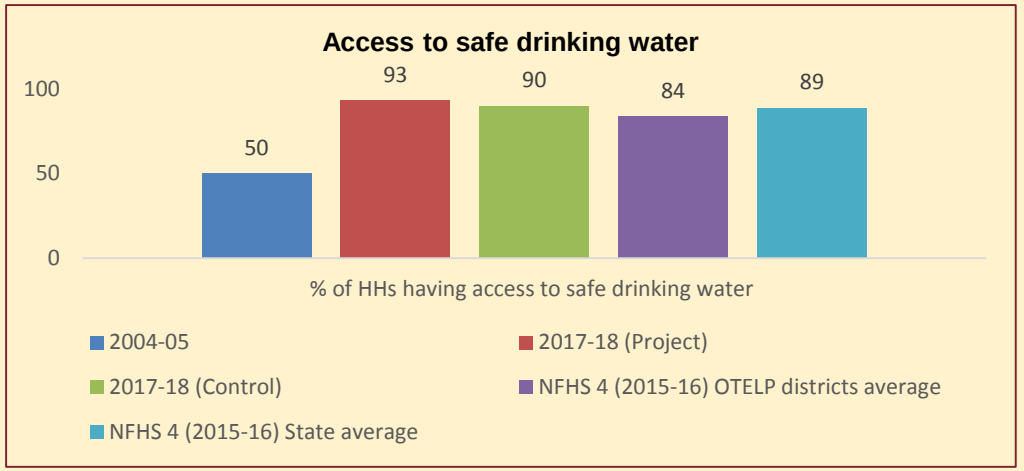
Families access to safe drinking water, which stands revised at 93% now, more than state average of 89% and national average of 90%

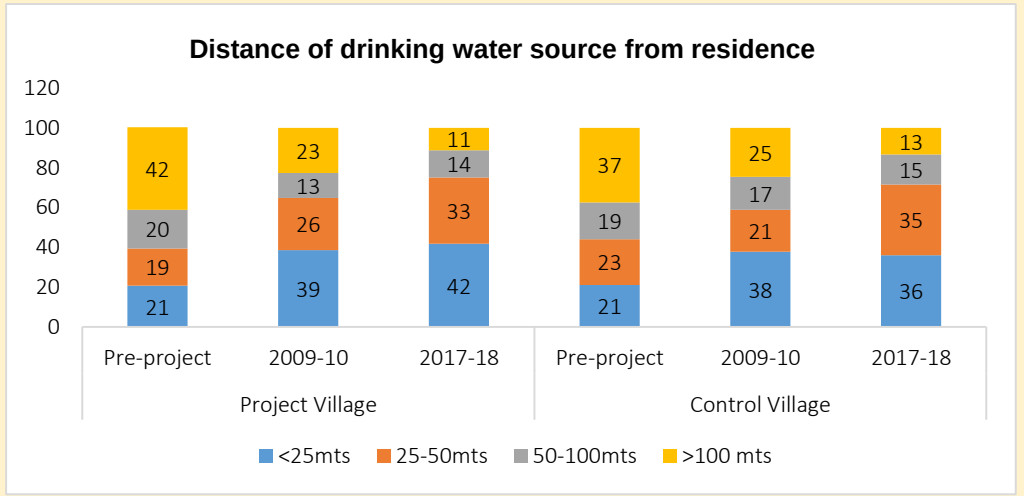
About 65% of households in project areas are sourcing drinking water from tube wells and 35% from taps against 47% and 14% of households in control villages, enhanced availability and improved access to clean and safe drinking water has led to change in the sanitation habits and health of households, particularly among women as observed during expert field visits

Further, the percentage of households collecting drinking water from a distance of 100 metres or more has reduced from 42% in 2005 to 11% in 2017 (Baseline and NRMC Survey, 2017)

It means OTELP has reduced the vulnerability of 31% of households as far as drinking water is concerned

interventions under CIF have resulted in reducing the drudgery of women in collecting drinking water





Community Infrastructure Fund and Development Initiatives Fund

- Results & Impacts :

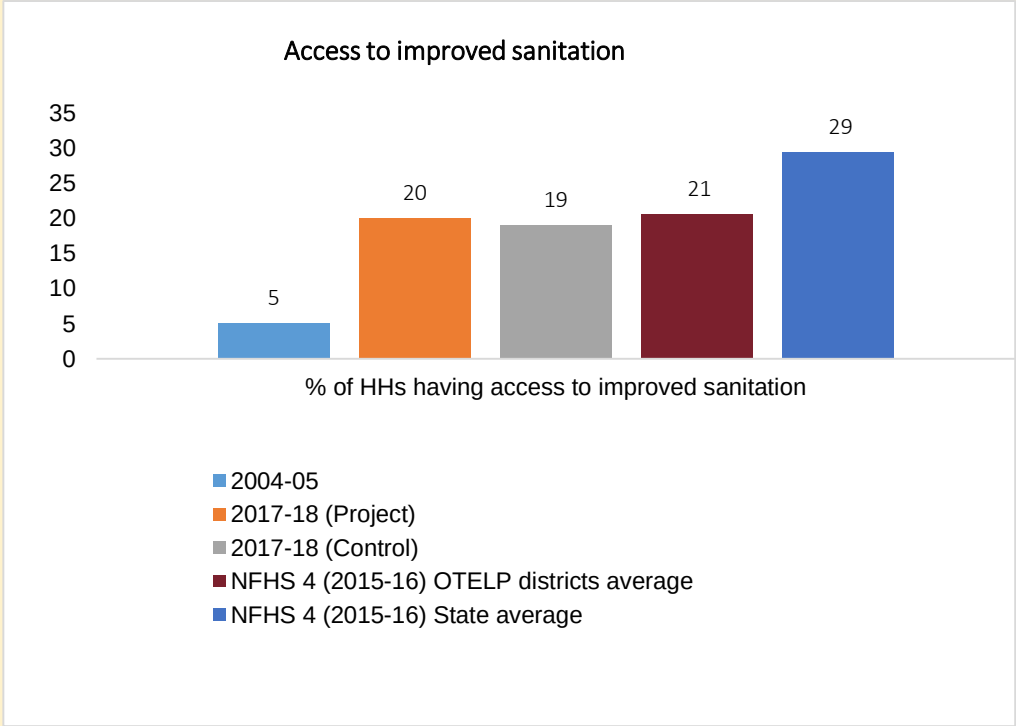
All tribal households enjoy access to basic sanitation and safe hygiene practice (Moderately Satisfactory)

NFHS 4 data indicates, about 21% of HHs are having improved sanitation facilities in OTELP intervention areas in comparison to state average of 29%.

Open defecation has reduced from 95% in 2005 to 80.6% in 2017. 53% of total samples in Project areas reported that the adults in the family wash their hands after defecation. This stands at 51% in case of control villages.

Similarly 43% of children in project areas and 42% in control areas wash their hands after defecation. These indicates a long road ahead in terms of behavioural change, though infrastructural investments galore.

Apart from drinking water and sanitation infrastructures, the common facilities like drying yards and multi-purpose community halls created by the project were found to be productively used by the communities in 70 percent of villages reviewed. However, these infrastructures may need maintenance in near future.



Community Infrastructure Fund and Development Initiatives Fund

- Lessons Learnt:

  - ✓ The community infrastructures created by the project are relevant for these villages. Most of them being community, group or village asset, their use and appropriation required to be monitored to ensure equity.

  - ✓ A major challenge is ensuring the sustainability of these infrastructures particularly water supply structures. In more than 75% of the villages visited by expert team, motors connected to the bore or the tanks are not functional resulting in no supply of water.

  - ✓ While the infrastructures are reportedly handed over to the community institutions and individuals, limited capacity of CBOs, lack of deliberate handing over/withdrawal process with creation of O &M protocol, have left the investments sub-optimally or not utilized. Unless the management of these structures are ably taken over by the communities, through efficient skill building and linkages with existing service providers, there is a danger of all this investment not yielding desired fruit.

  - ✓ The infrastructures built through a community demand driven process usually have an inbuilt sustainability mechanism of norms and community institutions with provision of user fee collection, management and maintenance procedure. In absence of their documentation and tracking through a sensitive MIS, it is difficult to monitor their use, maintenance, impact and sustainability.

Support for Policy Initiatives

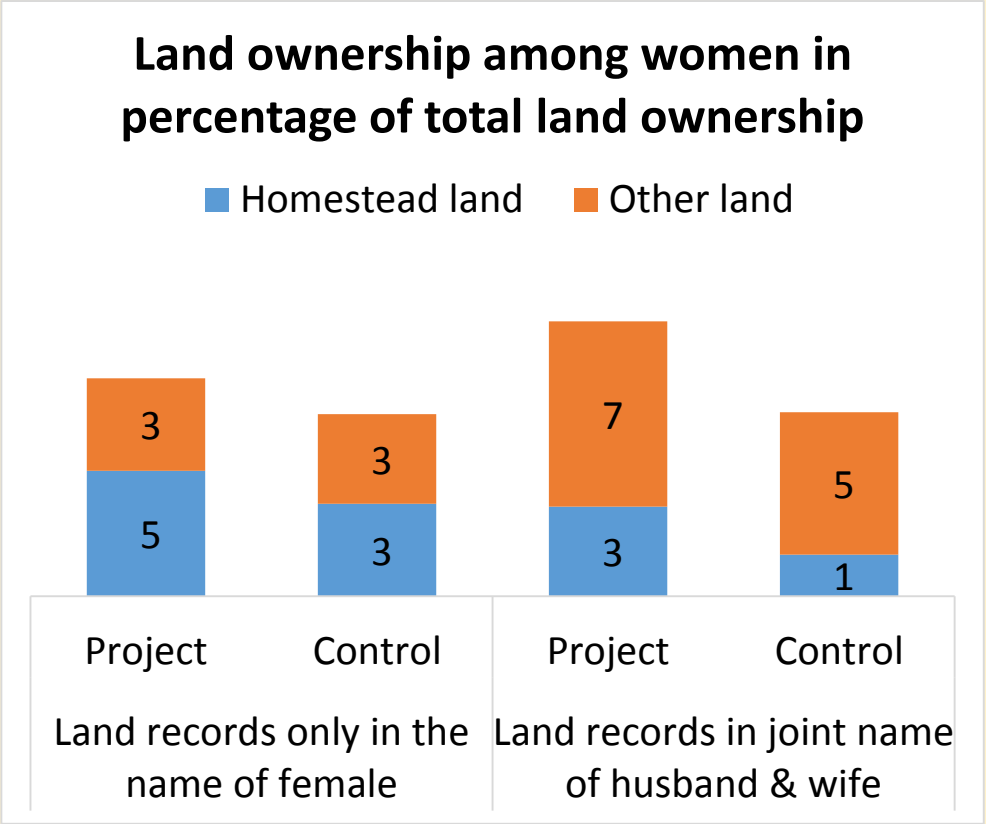
- Results & Impacts :

There has been a 20% reduction in the number of landless households in those villages in which the programme has been operating for more than two years (Satisfactory).

Our analysis of the HH survey data shows 1% percentage of families as landless in the project villages in 2017, against 3% in control areas.

All land titles issued were in the joint name of the husband and wife & enhanced gender sensitive land titling is evident from the fact that there are comparatively higher percentage of women/joint patta holders for both homestead and other lands in the project areas than in the control areas.

Out of the land distributed, 22% of FRA beneficiaries, 14% of homestead land beneficiaries and 13% of agricultural land beneficiaries had not been able to take over the possession of lands allotted to them (NRMC Survey, 2017).



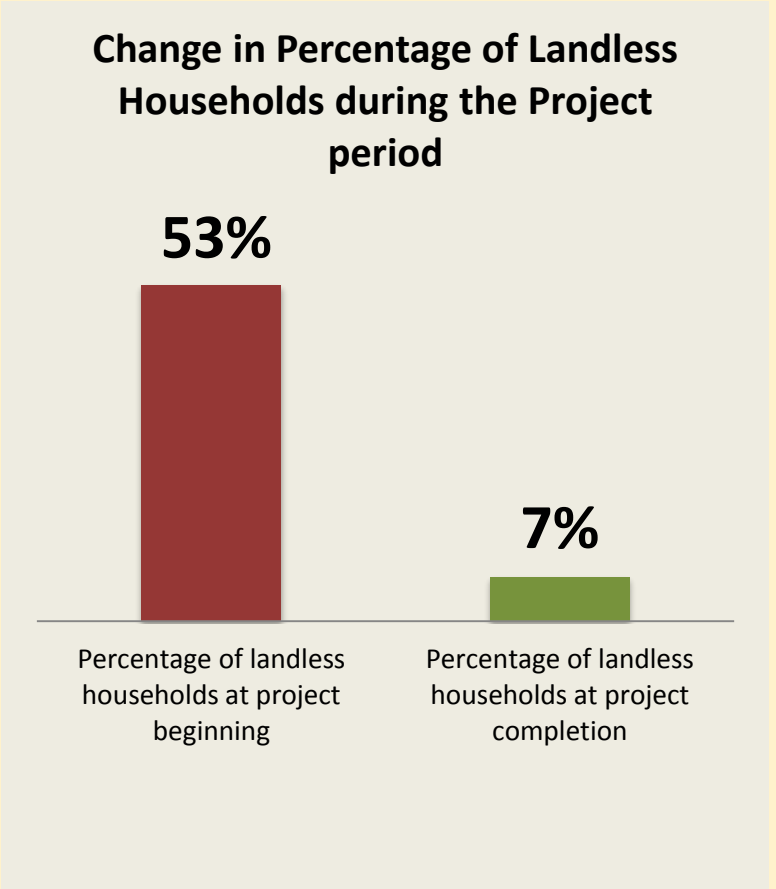
Support for Policy Initiatives

- Results & Impacts :

There has been a 20% reduction in the number of landless households in those villages in which the programme has been operating for more than two years (Satisfactory). Continued…

Out of the land distributed, 22% of FRA beneficiaries, 14% of homestead land beneficiaries and 13% of agricultural land beneficiaries had not been able to take over the possession of lands allotted to them (NRMC Survey, 2017).

It was attributed to issues like lack of identification of boundary/plot and unsuitability of land in case of FRA, lack of boundary demarcation and forceful possession by others in case of homestead and agriculture land. While the project has performed fairly in ensuring land distribution, this has not necessarily translated to secured possession in all cases. A systematic survey as indicated in the project document could have improved the possession.

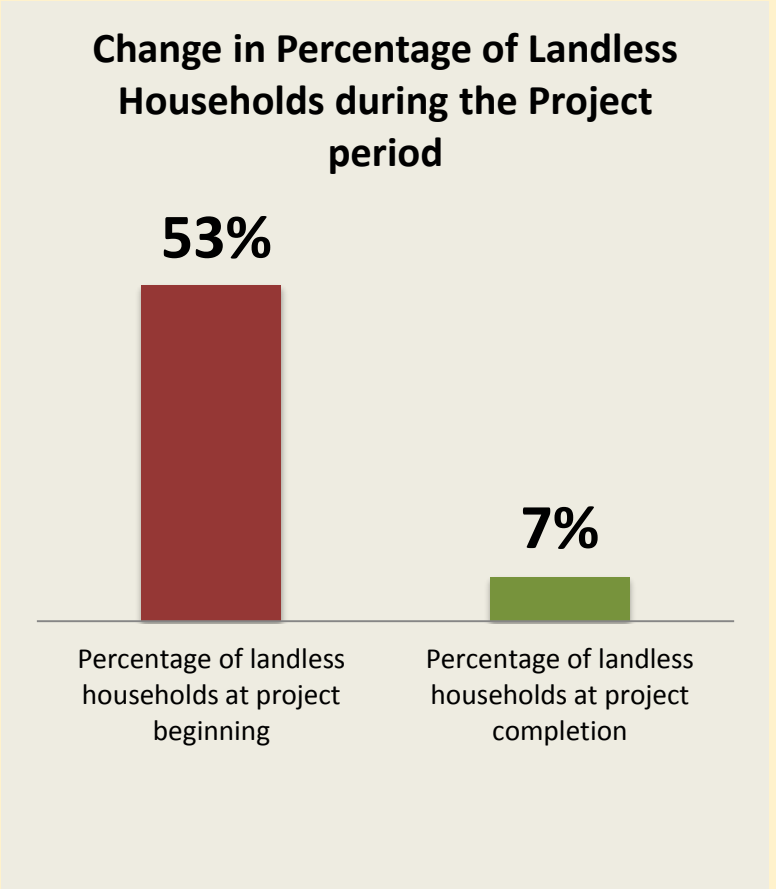


Support for Policy Initiatives

- Results & Impacts :

There has been a 20% reduction in the number of landless households in those villages in which the programme has been operating for more than two years (Satisfactory). Continued….

Among the achievements and outcomes of various policy level interventions, OTELP's role in increasing the income limit for allocation of land titles to landless under GoO's land allocation programmes from INR 24,000 to INR 40, 000 is the most notable one. This was one of the recommendations of Joint Review Mission (2014). The Community Resource Persons Model had also bagged second prize, in the category of Access to Public Entitlements at the Bihar Innovation Forum II in 2015.

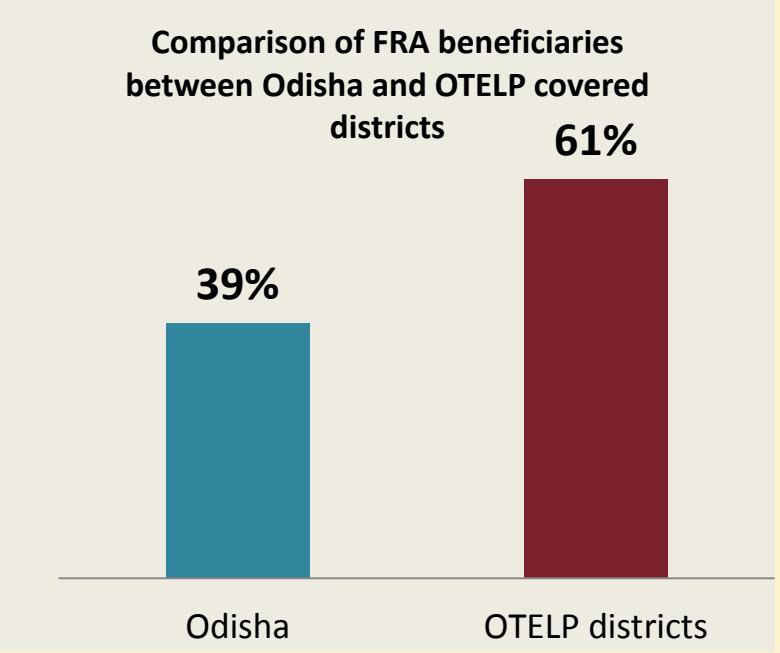


Support for Policy Initiatives

- Results & Impacts :

The Revenue Survey Teams have surveyed the 100 to 300 sloping land in at least 60 percent of villages where the programme has been operating for at least 2 years and the appropriate land titles have been issued in at least 60% of the villages surveyed (Moderately Satisfactory).

In absence of survey taken up between 10^0 to 30^0 sloping land, rights over similar lands recognized through FRA can be taken as a proxy to measure this indicator. OTELP's Tenth Anniversary Report, 2016* found that the percentage of IFR beneficiaries under FRA in the OTELP areas was 61%, which was much better than the state average of 39% .



As per a study conducted by SCSTRI, 90% of IFR claims are recognized in OTELP covered districts as compared to the state average of 76%. About 29% of respondents of primary survey have received IFR.

What is not understandable, that if the FRC has forwarded applications of all the tribal's and other traditional forest dwellers (OTFD) to the SDLC (Sub Divisional level committee) as per the Forest Rights Act 2006, then how it is just a handful of RORs get issued, and the majority of the rights holders get ignored. And what is further surprising is how, without any discussions in the Gram sabha and without the signatures of the President and Secretary of the FRC, the applications get forwarded to the SDLC.

Support for Policy Initiatives

- Results & Impacts :

At least 80% of land alienation cases detected are being processed through the courts within 1 year by the end of PY3 and land ultimately restored to the poor tribal HHs in over 10% of land alienation cases processed (Moderately Satisfactory).

The project had supported a research study by NGO Vasundhara on landlessness and land alienation among tribal people, which was widely publicized to influence creation of various land allocation programmes for tribal people in the state. In absence of direct targeting through provisions of legal defence fund, mobile land-alienation detection squad and policy support fund, project had relied on indirect measures (including state's action such as amendment to OSATIP in 2002 and appointment of Land Restoration Officers at district level) for achievement of this indicator. Annual Outcome Survey, 2012-13, had reported significant reduction in number of land alienation cases. A total of 596 land-alienated cases have been restored in favour of the tribal households under the Regulation 2 of 1956 (PCR, 2016).

Regulations to ensure enhanced incomes from NTFP effectively implemented by Government (Moderately Satisfactory).

OTELP has facilitated the implication of NWFP deregulation regime in project areas covering 37,706 households or 67% of project households to enable fair monetary returns for their efforts in collection, processing, storage, transportation etc. The interventions around collectivization, revolving/grant fund support, market information, research/studies, pilot collaboration etc. helped income from NTFP grown for the collectors, after deregulation of NTFP in 2002. The Mechanism for Marketing of Minor Forest Produces through Minimum Support Price (MSP) and Development of Value Chain has been rolled out in Odisha from 1st July, 2014 with TDCCOL has been nominated for State Procurement Agency. Interventions of TDCC have also been converged in OTELP area, quite effectively. All this has probably contributed to increase in average income from NTFP per household in the project areas from Rs.1440 in 2005 to Rs. 6147/- in 2017 i.e. 327% increase in income (NRMC Survey, 2017).

Support for Policy Initiatives

- Results & Impacts :

Schemes and institutional mechanism, possession and use; post-land right convergence (status of implementation of FRA etc.) (Satisfactory)

A series of surveys conducted by Landesa in 2015 in OTELP districts to monitor post land rights situation reported significant improvements in convergence under various government programmes particularly housing, food entitlements, MGNREGA, credit etc. NRMC Survey team has noted post land rights convergence with the Department of Horticulture and NABARD around WADI programme, convergence with the department of Panchayati Raj for MGNREGS and Soil Conservation department for land development and soil conservation works. However, delayed payment of wages stood out as a major grievance in case of MGNREGS.

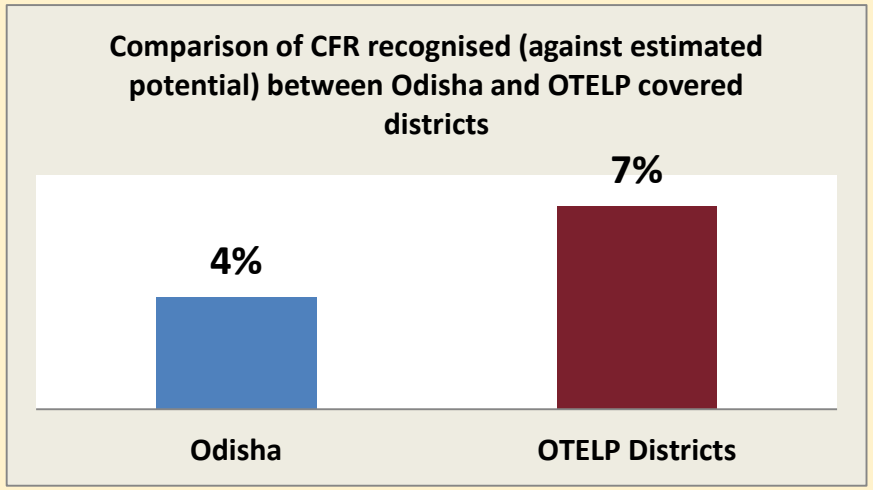
Support for Policy Initiatives

- Results & Impacts :

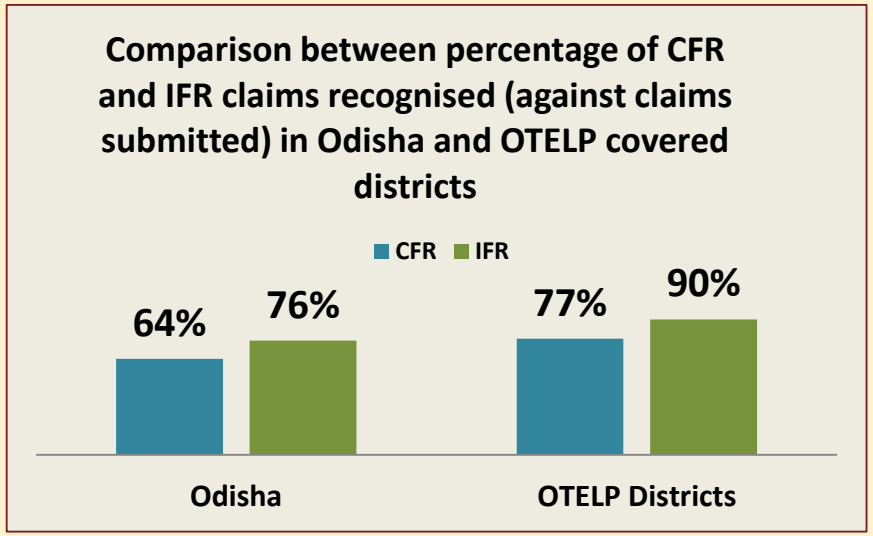
Over 20,000 ha of forest area under effective community management (Moderately Satisfactory)

A total of 317 CFR claims were submitted, of which 82 titles were issued in favour of the communities under Section 3(i) covering 4246 ha of forestland as on March 2016. This report records that the percentage of CFR claims recognized against the number of claims submitted in OTELP programme areas are better than the state average. In comparison to 64% of CFR claims recognized in Odisha, 77% of CFR claims were recognized in OTELP covered districts.

The recognition of CFR against the estimated potential (RRI, 2015) also looks higher in programme areas (7%) as compared to state average (4%).



Source: RRI, 2016



Source: RRI, 2015

Support for Policy Initiatives

- Lessons Learnt:

  - ✓ There are inherent challenges in addressing structural issues by projects. In spite of being one of most relevant and often appreciated component, most of the interventions under policy initiative remained as non-starters (Survey on hill slopes, Legal defence fund, mobile squad etc.) with a low efficiency of 13% expenditure comparing overall 74%.

  - ✓ Implementation of land matters by non-land revenue department like Tribal Department is tricky. Though Tribal department with IFAD, could execute survey on hill slopes in remote Kashipur block, the same could not be made possible, in spite of considerable efforts by OTELP.

  - ✓ Patient and sensitive support and facilitation by people knowledgeable about the applicable government procedures can help poor communities overcome the barriers to their rights.

  - ✓ The presence of good policies and laws can produce better results, when a feedback loop enabled with partnership with civil society (academia and NGOs) is embedded in project governance. It provides independent and third party perspectives of ground situation with suggestions of alternate pathways and solutions, apart from bringing in accountability and transparency. CSO partnership also enables interventions in remote and difficult areas.

Support for Policy Initiatives

- Lessons Learnt: Cont…

  ✓ Appropriate institutional innovations are imperative to enable participation and empowerment critical for tribal development. Trained local youths can help the government to effectively deliver most kind of government services particularly in LWE affected areas. The best practices like ‘CRP model in land allocation’ needs to be reflected in the policies and laws for a wider impact.

  ✓ Tribal land rights need prioritized attention and an enabling environment through complementarity of inputs and services from government, public and private sector actors. Facilitation and enabling of post-land rights activities like possession and convergence are as important as pre-land rights process of survey, identification and application.

Impact Assessment Summary

Impact Assessment Score Card

A project score card in terms of performance of twenty eight indicators based on analysis provided in previous sub-chapters are presented for a summarized appreciation below.

Component Name		Impact Assessment Indicators	1	2	3	4
	1	*Village Development Committees (VDC) formed at natural village level all of which hold regular meetings and formulate participatory micro-plans for watershed development*				
Capacity Building & Community Institutions	2	*SHG formed/strengthened of which 75% are well managed, self-reliant and autonomous based on the active participation of all members*				
	3	*1,600 User Groups/sub-committees formed, 60% of which effectively use and maintain assets.*				
	4	*Women participate effectively in the management of community institutions (SHGs, User Groups, VDCs)*				
		Overall Capacity Building & Community Institutions				
Land Water	1	*Status, quality and use of Soil Moisture Conservation and water harvesting/diversion structures*				
		Overall Land and Water Management				
Agriculture Development	1	*Increase in incomes from natural resources shared equitably among all socio-economic groups*				
	2	*Agricultural productivity/ha sustainably increased at least 50% by EOP*				
	3	*Ownership of agricultural land by poor tribal households increases from X,000 ha to Y,000 ha*				
	4	*Increase in area under irrigated crop production*				
	5	*New technologies build on tribal people's indigenous technical knowledge*				
	6	*Farmers adopting technology recommended*				
	7	*Increase in number of agricultural implements*				
		Overall Agriculture				
RFS and ME	1	*At least 75 percent of SHGs established have fully functional savings and internal lending operations and have provided loans to at least 75percent of their members.*				
	2	*40 percent of SHGs accessed institutional credit for off-farm enterprise development.*				
	3	*Indebtedness to moneylenders as a percentage of overall indebtedness declines*				
	4	*Net incomes from NTFP sustainably increased by at least 50percent.*				
	5	*Off-farm employment and incomes of poor tribal households, including the vulnerable (landless, women-headed households) increased by 50percent.*				
		Overall Rural Financial Services and Enterprise Promotion				
Food handling & Security	1	*All tribal households enjoy year-round food security (especially during the lean period from May to August) from PY6*				
	2	*At least 50% of participating below poverty line households shows increased food security*				
	3	*Increased food consumption and enhanced dietary diversity*				
		Overall Food Handling and Security				
Community Infrastructure Fund & Development Initiative Fund	1	*All tribal HHs enjoy access to safe drinking water (Log frame Indicator)*				
	2	*All tribal HHs enjoy access to basic sanitation and safe hygiene practice (Log frame Indicator)*				
		Overall CIF & DIF				
Support for Policy Initiatives Support for Policy Initiatives	1	*There has been a 20% reduction in the number of landless households in those villages in which the Programme has been operating for more than two years.*				
	2	*The Revenue Survey Teams have surveyed the 100 to 300 sloping land in at least 60 percent of villages where the programme has been operating for at least 2 years and the appropriate land titles have been issued in at least 60% of the villages surveyed.*				
	3	*At least 80% of land alienation cases detected are being processed through the courts within 1 year by the end of PY3 & land ultimately restored to the poor tribal HHs in over 10% of land alienation cases processed.*				
	4	*Regulations to ensure enhanced incomes from NTFP effectively implemented by Government*				
	5	*Schemes and institutional mechanism, possession and use; post-land right convergence (status of implementation of FRA etc.)*				
	6	*Over 20,000 ha of forest area under effective community management*				
		Overall Policy Initiative				

Impact Assessment Summary

Evaluation Questions on Project Management Concerns

- ✓ **Relevance (Highly Satisfactory)**
- ✓ **Effectiveness (Satisfactory)**
- ✓ **Efficiency (Satisfactory)**
- ✓ **Sustainability (Satisfactory)**
  - Institutional Sustainability,
  - Social Sustainability
  - Economic and Technical Sustainability
  - Ecological Sustainability
- ✓ **Equity (Moderately Satisfactory)**
- ✓ **Cultural Identity (Moderately Satisfactory)**

Impact Assessment Summary

Overall Rating

Parameters	PCR	JRM	NRMC Survey
Overall	Satisfactory		Satisfactory
Food Security	Satisfactory	Satisfactory	Satisfactory
Capacity Building for Empowerment	Satisfactory	Moderately Satisfactory	Satisfactory
Livelihood Enhancement	Satisfactory (Natural resource env)	Satisfactory	Satisfactory
RFS	Moderately satisfactory (Market access)	Moderately Satisfactory	Satisfactory
CIF		Moderately satisfactory	Moderately Satisfactory
DIF		Satisfactory	Moderately Satisfactory
Support for Policy Initiatives	Satisfactory	Satisfactory	Moderately Satisfactory
Gender Focus	Satisfactory	Satisfactory	Moderately Satisfactory
Poverty Focus		Satisfactory	Satisfactory
Effectiveness to targeting approach	Highly satisfactory	Satisfactory	Moderately Satisfactory
Impact on Physical & financial assets		Satisfactory	Satisfactory
Impact of climate resilience	Satisfactory	Satisfactory	Satisfactory

Development Indicators
Economic Indicators

- **Cost-benefit analysis:**

  PCR, 2016 has done a systematic economic analysis following a rigorous procedure to suggest BCR and IRR of the project. Instead of duplicating the effort, this study makes an attempt to compare the OTELP scores with other such projects.

- **Savings Credit Ratio:**

  Although there is no significant difference between project and control areas particularly in terms of savings to credit ratio, but one can see from the below table that households in project areas have more savings and are availing more credits, which they are investing in agriculture and other micro enterprises

Project	BCR	Source/Remark	IRR	Source
OTELP	1.37	PCR, 2016	21	PCR, 2016
MPRLP	0.96 to 2.96	Of different interventions[1]		
WOTR	2.3 to 3.8	Maharashtra Watersheds[2]		
SRI	1.78	Odisha		
ICRISAT			15-30	Watershed projects in India[3]
ICRISAT	1.23		14	Different Tamil Nadu Watersheds[4]
Neeranchal			18.8	World Bank Project[5]

Area	Average savings Amount (Rs)	Average credit Amount (Rs)	Savings Credit Ratio
Project Village	8,718	16,718	0.52
Control Village	7,495	14,173	0.53

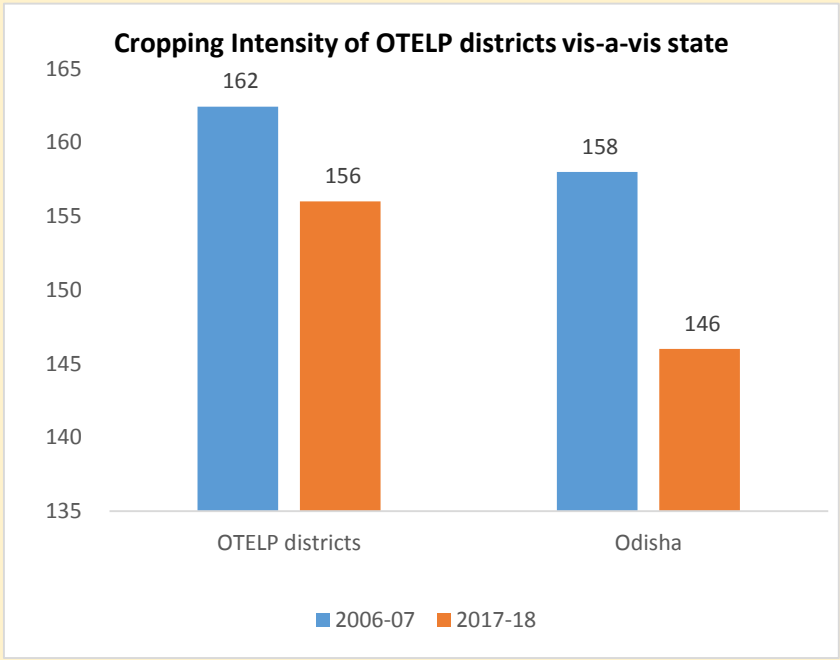
Development Indicators
Ecological Indicators

- Cropping Intensity:

The cropping intensity has decreased by 2.7% during 2006 to 2017 (viz. from 162 in 2006-07 to 156 in 2017-18 in OTELP districts) against 6.4% decrease of the state for the same period (Figure 14).

However, the cropping intensity in project areas (156%) now are higher than that of control areas (149%).

It may be noted that last year was a drought year for most of the blocks surveyed.



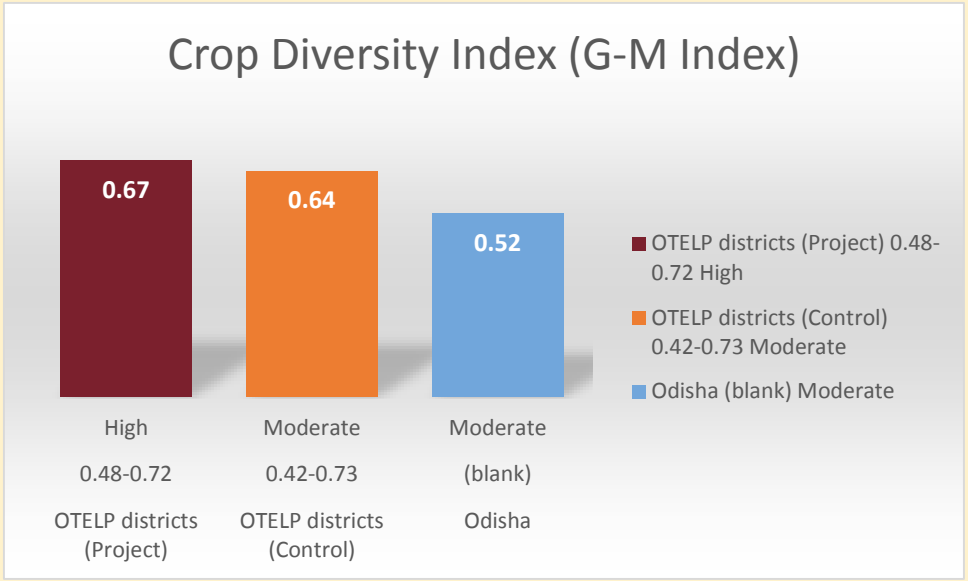
Development Indicators
Ecological Indicators

- Crop Diversification Index (Gibbs & Martin Index) :

The level of crop diversification in OTELP operational areas is comparatively more than control villages and the state average

This shows that the capacity building, technological inputs, infrastructure and other facilities provided by OTELP have resulted in better crop diversification.

Empirical evidences suggest that crop diversification generates employment, increases crop intensity, increases diversification of agricultural production, enhances farm income, thereby alleviating poverty.



Development Indicators
Ecological Indicators

- Land Use Change :

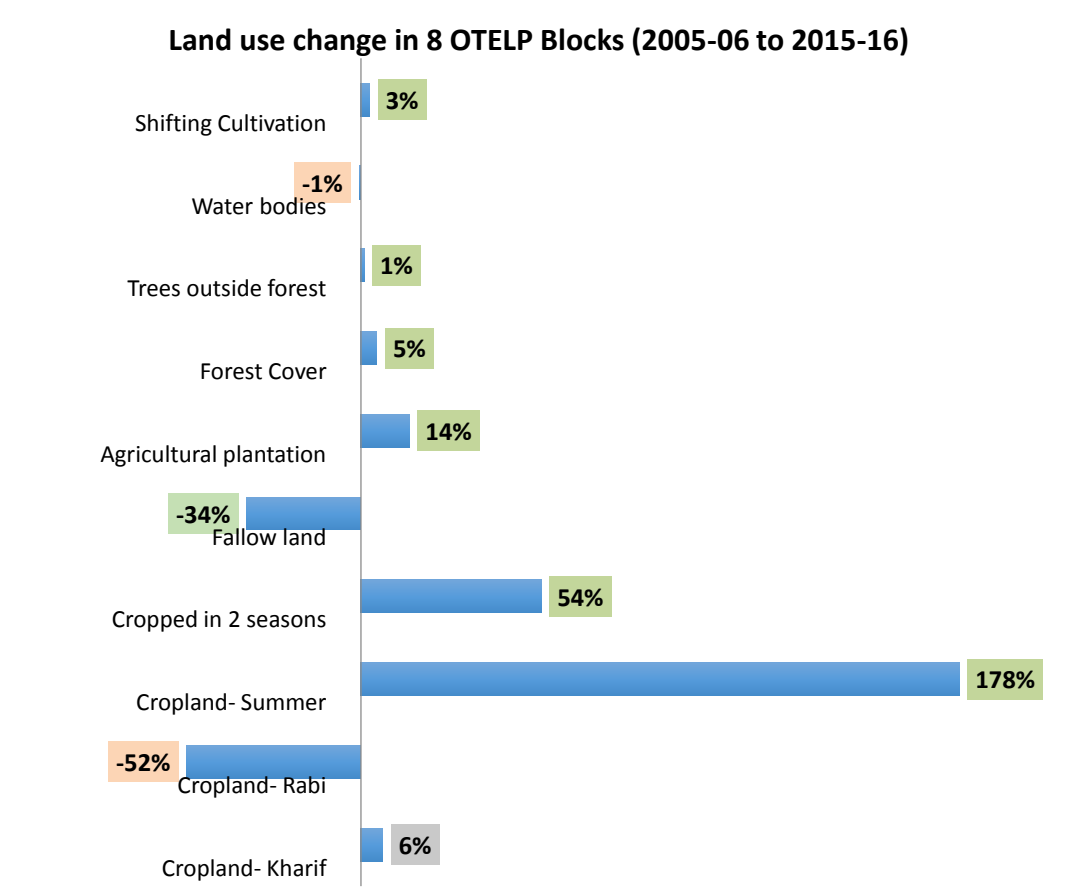
The result indicates positive changes in terms of increase in area under cropping.

Area under double cropping has increased by 50% with summer crop area increasing to almost three times.

Fallow area has also reduced by one third.

There are also positive changes around forest cover (open, close, plantation and scrub together) and tree outside forests.

However there are marginal decrease in area under water bodies and increase in area under shifting cultivation (fallow and active phase together).



Figur15 Land use c

Development Indicators
Ecological Indicators

- Soil Quality :

  Soil sample data collected from 12 farmers' fields randomly (9 project and 3 control) in 5 project districts were analysed in the laboratory of Department of Soil Science at OUAT, Bhubaneswar.

  The result indicate, enhanced soil fertility and organic carbon stocks in project area than control.

  The changes in soil organic carbon stocks significantly influence the atmospheric C concentration or has profound effects on climate mitigation (Sodostrom et al., 2014).

Area	pH (1:2)	EC (dSm^{-1})	OC (%)	Available nutrients (kg/ha)		
				N	P_2O_5	K_2O
Project	5.92	0.12	0.94	114	7	347
Control	6.00	0.09	0.88	104	17	344

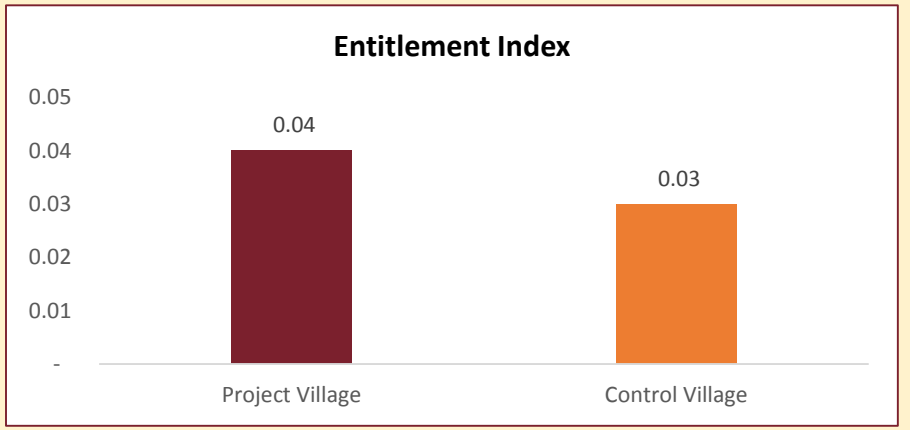
Figur15 Land use c

Development Indicators
Social Indicators

- Entitlement Index:

Analysis using household survey indicates that access to entitlements in terms of number of schemes is 33% higher in project areas than that of control villages.

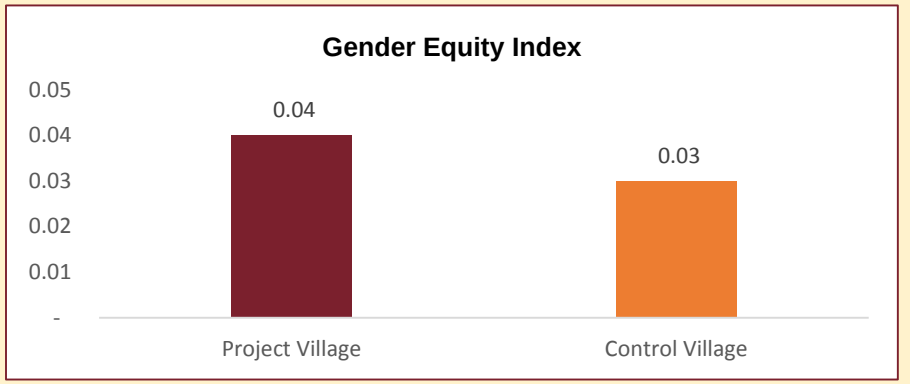
This may be due to increased awareness among the project households about various government schemes, coordination and follow up support from project staff and increased institutional participation of households.



- Gender Equity Index :

Results indicate 33% better gender equity in project areas as compared to the control areas.

This may be because of OTELP's strategic approach to address the gender inequity issues around governance and management of NRM.



Development Indicators

Social Indicators

- Entitlement Index:

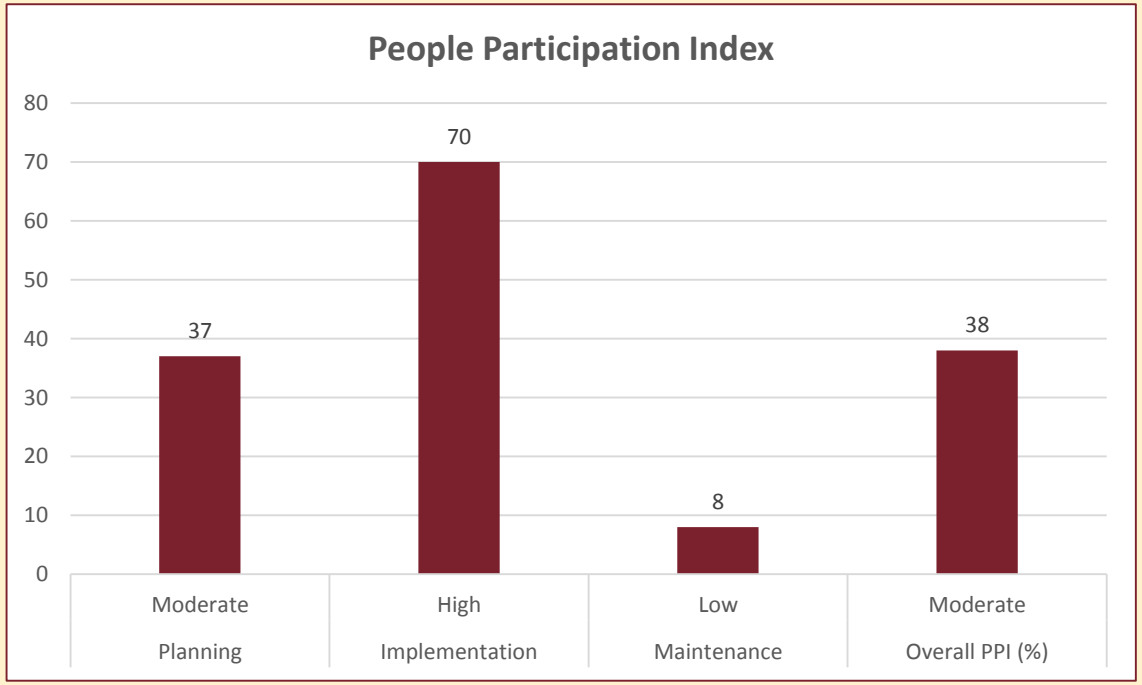
Results indicate in planning was moderate, in implementation high and in maintenance low.

This shows that majority of households contributed labour only towards construction of soil & water conservation structures promoted by the project.

Overall participation of targeted groups in OTELP programme was moderate.

In an evaluation study of watershed programmes in Maharashtra, Bagdi & Kurothe, 2014 found the overall PPI between moderate to high level.

In contrast to our findings, their study reported high participation of people in maintenance of structures.

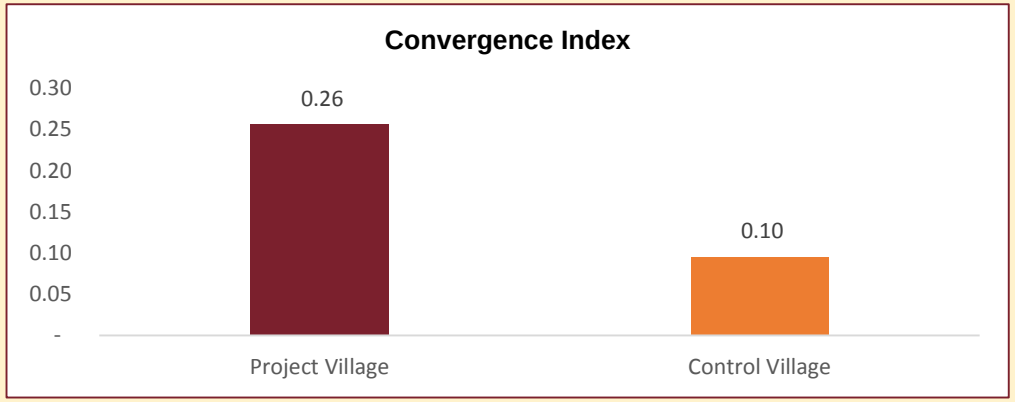


Development Indicators

Social Indicators

- Convergence Index:

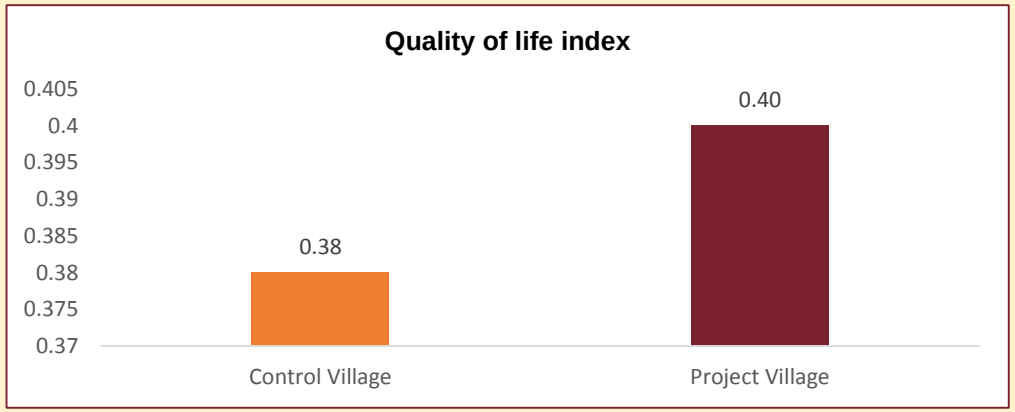
The benefits of government schemes on agricultural livelihoods and availing bank credit for expanding farming and/or micro enterprises is relatively better in project villages than that of control villages.



- Quality of Life Index:

Results shows that the project has improved the quality of life of the households in the project villages.

Marginally (5%) more number of people in project areas are availing the benefits of clean fuel, clean and safe drinking water and improved sanitation etc..



Theory of Change and Causality Attribution

- Comparing the Changes:

A comparison of some key outcome indicators of the project area was compared with the control, based on the data of household survey by using t-test

The result indicates that the change between food shortages was significantly addressed due to project intervention.

However, total income, expenditure on health, farm productivity and paddy production has been at par in both control and project villages. This means that the responses of project intervention and without intervention for these factors were more or less similar.
In general, under project scenarios, the household perceives, that after the project completion, similar activities are not possible to sustain due to variety of reasons including poverty, withdrawal of handholding support etc.

Comparison (Mean and SE) between control and project villages

Parameter	Status	Mean	Std. Error Mean	t-value	Sig (p-value)
Average of Total Income (Non-farm+ Farm & off-farm) in INR	Control	40486	2019.99	-0.58	0.56
	Project	42001	1707.17		
Food shortage period/months during last 12 months (> 3 months)	Control	2.6	0.22	-2.52	0.01
	Project	3.5	0.30		
Average Annual Expenditure on health (INR)	Control	2425	142.14	-0.29	0.76
	Project	2489	164.58		
Farm Productivity (All Crops) (Q/ha)	Control	12.0	0.88	-0.25	0.80
	Project	12.3	.82		
Paddy Productivity (Q/Ha)	Control	16.1	1.33	0.194	0.85
	Project	15.80	1.06		

Theory of Change and Causality Attribution

- Attributing the Changes:

Multiple regression analysis was performed to evaluate the project targeted outcomes such as Income, employment, Food Security with the project factors and contextual or household internal factors.

Farm Productivity
Farm productivity has increased from 6.9 quintal/ha in 2005 to 7.92 quintal/ha in 2017.

The regression outcome indicates that

- ✓ Investment in agriculture, adoption of more number of improved practices, access to bank credit and participation in decisions making process in OTELP are hypothesized to enhance farm productivity.
- ✓ The access and availability of fund for agriculture is important causal agent to modify the existing farm operation therefore better productivity.
- ✓ Decision making attributes facilitates to adopt or utilise improved agriculture practices as deemed fit. It is worth to mention that the farmers has experience based knowledge of cultivation therefore are capable to take appropriate decision for better productivity, provided access of improved agriculture practices/technology is existing.
- ✓ However, farm productivity was found to be negatively associated with membership in UG/VDC.

Theory of Change and Causality Attribution

- Attributing the Changes:

Food Security
there has been a significant reduction in the number of households facing food shortage at least for a month in a year. The households experiencing food shortage for more than 3 months in a year has reduced from 64% in 2010-11 to 31% in 2017.

The regression 1 outcome indicates that

- ✓ Food security is high for the households or communities, who had food entitlement from NFS card and AAY, however, reduces, for communities, who practices kitchen garden.
- ✓ The deprivation role of kitchen garden was mainly because very few households are practising kitchen garden and also those who are practising kitchen garden the size of land is very small, leading to insufficient food production.
- ✓ Moreover, the communities with purchasing power were also food secured, as they are financially sound to cater there household welfare

Theory of Change and Causality Attribution

- Attributing the Changes:

Food Security
there has been a significant reduction in the number of households facing food shortage at least for a month in a year. The households experiencing food shortage for more than 3 months in a year has reduced from 64% in 2010-11 to 31% in 2017.

The regression 2 outcome indicates that

- ✓ There are large numbers of factors significantly affecting food security.
- ✓ Household attributes such as demographic, decision capability (primarily dealing the cultivation experience) and networking with villagers are leading factors contributing for food security within the household attributes.
- ✓ The opportunity for income earning strategies are also facilitating for improving the food security, however outmigration, leading to permanent shift from villages, are detrimental for food security among villagers.
- ✓ Food security is positively and significantly associated with type of family (joint and nuclear family), female land owners, access to food entitlements and household's involvement in shifting cultivation.
- ✓ However, factors contributing to food insecurity include caste (ST/Adibasi), illiteracy, total cropped area, lack of exclusive ownership of land among women, forest dependency, incidence of migration in the family etc.

Theory of Change and Causality Attribution

- Attributing the Changes:

Total Household Income
It was found that the total income of households in project areas has increased from INR 15926/- in 2005 to INR 43,363/- in 2017.

The total income increases with

- ✓ The decision making ability and capability of household i.e. capacity as the head of household and having experience and education
- ✓ Association with UG/VDC (may be due to knowledge sharing and awareness due to discussion among the member, who has access to interact with outside people)
- ✓ Participation avenues in micro-enterprises; more micro-enterprises provides batter opportunity for income earnings.
- ✓ Ownership of Cultivable land

Theory of Change and Causality Attribution

- Attributing the Changes:

Expenditure on health

The average annual expenditure on health per household has increased from Rs. 1119 in 2005 to Rs. 2508/- in 2017.

The model indicates that:

OTELP's focus on increasing household assets viz. awareness assets (TV); communication assets have resulted in better health outcomes. The households having more number of assets are spending less on health.

With increase in household income due to participation in OTELP, households are spending more on health. Among the family types, nuclear families spend more on health. This may be because per person investment in case of nuclear families is 20-30% higher than joint families.

Policy Learning & Recommendation

- Policy summary: Tribal Development in the State:

The project has significant implications for state policies and programmes, particularly in the context of tribal development. OTELP has already influenced the way TSP is spent, carving out of OTDS, launching of OTELP plus and starting of OPELIP.

OTELP's relevant efforts in the direction of enhancing land and forest rights need to be furthered and steered appropriately to a logical end in terms of translation to secured land and forest tenure for tribal communities.

Taking clue from pending PESA rule, these community self-managed institutions should be promoted as sub-committee of Gram Panchayat for natural resource management and governance. In line with decentralized planning process, convergence can be planned and implemented through VDCs. They can also play governance role like planning and monitoring programmes implementation in the villages to ensure participation and transparency.

Equity and gender are too important cross-cutting elements to be less prioritized

The local conventional production system needs strengthening through promotion of practices based on principles of food sovereignty, farmer-first approach and agro ecological principles, maintaining diversification (at species, crop and farm level) and integration (mixed cropping, farming system) with focus on use of local input.

Ensure synergistic convergence and avoid duplication of efforts and resources, particularly where adequate parallel funding and multi-pronged support available for community infrastructure such as water and sanitation measures. In such cases focus should be to converge.

Policy Learning & Recommendation

- Policy summary: Tribal Development in the State:

Flexi-fund mechanism can be prioritized for demand-based activities for which mainstream fund availability is limited and uncertain like value chain infrastructure (e.g. storage, processing equipment), energy solution (e.g. solar lighting, driers) and small/skill-upgrading equipment for vulnerable households.

Developmental support services viz. land rights, enterprise support (viz. vaccination) and access to entitlements can be made more effective, low cost and sustainable through engagement of local trained volunteers as CRP.

Based on the results of the regression model, projects should consider

- More farm investments on farm and through credit, facilitation of joint decision making at household level and exposure to more number of practices for enhancing farm productivity
- Support land ownership, access to PDS and nutritional supplemental program and income to ensure food security.
- Enhancing access to agriculture land and promotion of microenterprises to increase income

Policy Learning & Recommendation

- Specific Policy Summary : OPELIP and Other Tribal Development Projects implemented by the State

A long-term, deeper and 360 degree handholding can be considered, looking at local resource and community context.

Taking precedence of GoO offer to doctors and other such allowances, a provision of project allowance can be considered as a top-up for HR deployed in tribal project geographies.

Post-Project management and maintenance protocol/ guidelines for infrastructures needs be developed from the beginning and adopted in spirit with faith on and involvement of community and their institutions viz. SHG, PRI, traditional institutions, neighborhood.

The CB efforts have set a very positive foundation by making participation a core principal, and not a choice.

OPELIP and OTELP Plus to consider streamlining community mobilization efforts to enhance participation of communities in planning, maintenance and decision making, learning from OTELP experience, where these were low in comparison to implementation.

NRM interventions in these projects can be tuned to follow a design suiting local geo-climate, agro-ecology and socio-cultural practices viz. focusing more on vegetative and bioengineering measures drawing from local traditional practices.

Food governance and handling can be decentralized and local food systems have to be revived and strengthened.

Policy Learning & Recommendation

- Specific Policy Summary : OPELIP and Other Tribal Development Projects implemented by the State

Efforts towards strengthening of community institutions subsidized with the creation of assets both during initial and exit phase of the programme.

SHG fédérations organized at the watershed level and apex institutions at cluster needs to be aligned with the ongoing structures created under NRLM, where federation be rationalized with that of OLM to enable easier convergence.

Future projects may consider additional measures/indicators of ‘wellbeing’ and ‘happiness’ for project achievement in terms of growing global attention and recognition of these terms and their relevance to tribal context.

Policy Learning & Recommendation

- Specific Policy Summary : Recommendations for OTELP Plus

Consider strengthening of HR support of state and ITDA level for desired facilitation, supervision and monitoring of FNGO support.

linkages viz. Government departments, resource agencies including research institutions, consulting firms, NGOs, market agencies, financial institutions should be further facilitated and consolidated by FNGO during OTELP plus for long-term gain.

The achievement made in terms of allotment of homestead land and recognition of forest land rights through IFR is getting blurred with their lack of mapping, limited possession, no RoR integration and sub-optimal post-land rights convergence. This is a low hanging fruit that, OTELP plus must work on to facilitated to help the poor tribal right holders realize livelihoods outcomes.

There is also a need to formalize tenancy, which though about 7% in project area (NRMC Survey, 2017), constitute about 90% of tribal sharecropperThere is also a need to formalize tenancy, which though about 7% in project area (NRMC Survey, 2017), constitute about 90% of tribal sharecropper

NRM and village assets built for community are suffering for want of maintenance with lack fund as well as institutional care. HR available with OTELP are required to develop/refine such asset lists and enable handholding and convergence to salvage them for envisaged gain

Policy Learning & Recommendation

- Specific Policy Summary : Recommendations for OTELP Plus

With available FNGO team and relying on convergence, utilization of irrigation assets and enhanced adoption of technology transferred can be closely followed and monitored through MIS.

SHG federations and apex institution having been formed towards end of the project, most of them are not formally functional with lack of registration, accounts opening and limited capacity building and post-project handholding. There is scope to complete these tasks during the ongoing support of OTELP plus, through FNGO support in convergence with other programmes like OLM, which was also indicated in PCR (2016).

Thanks for the Opportunity