

PLANTING THE SEEDS OF CHANGE

Highlights from the Impact Evaluation Study of 'Provision of
Livelihood and Nutrition Security for Tribal Families'
(PLANT) Project

December 2017 - January 2018



CONTENTS

Preface	4
Context	6
Methodology	8
Geo-socio-economic profile of the project region	9
Analysis as per DAC parameters	10
Insights from the evaluation of the PLANT project	14
- Access to social security entitlements	
- Crop diversification and increase in level of production	
- Access to Nutrition	
- Income to women through off farm activities	
- Participation of community institutions in community development	
Recommendations and Conclusions	27

PREFACE

SCIAF has worked in partnership with IGSSS since the inception of this programme and acknowledge IGSSS's major achievements in this community's development over the last 4 years. A community which at first was hesitant and reluctant to participate in the development efforts but, with the commitment and untiring efforts of the experienced and highly skilled IGSSS staff, a strong trusting relationship was slowly developed. This facilitated and enabled the building blocks to be put in place for an efficient, effective, relevant, impactful and sustainable programme. This person centric programme approach reflects IGSSS strong values and principles to uphold truth, justice, freedom and equity.

The Provision of Livelihood and Nutrition Security in Tribal Areas (PLANT) project highlights how working in partnership with communities, in assessment, design, implementation and monitoring of an integrated community programme, lends to driving forward the development and increased resilience of the Tribal Communities, who now manage and have ownership of their community's development. The challenges facing these most excluded rural poor communities were low family income and periods of hunger due to subsistence farming, small plots and low crop production, shortage of food grains for 3 to 4 months of the year and limited livelihoods options especially for women.

The IGSSS team provided much needed technical expertise and inputs to addressing these identified community needs through four key strategies, 1) Social Security Entitlements: Community awareness raising and education of households on their social security entitlements and access, (the Mahatma Gandhi National Rural Employment Guarantee Act and Pensions) also food social security (the Public Distribution System, Mid-Day Meal Scheme under the Integrated Child Development Services). Establishing and strengthening community groups with the capacity to liaise with the respective government departments, as well as ensuring that institutions lead and mobilised villagers in their community's development was a key focus in this regard.

2) Increasing and Diversifying Crop Production:

focusing on the provision of specific sustainable agricultural inputs (mixed/multi and second cropping, SRI, vermi compost and organic manure, seed priming and treatment, soil testing and systematic farming, seed and grain banks). Providing technical inputs to small and marginal farmers to better harvest and manage individual and common water resources through community water management group and the investments in construction and repair of community water bodies were key strategies here. The supporting Farmer Field Schools, to promote learning and adaption of best practice through demonstration of various farming models and techniques, worked as a multiplier effect as well.

3) Nutrition Education: Educating and supporting families to widen the range and type of food available, to provide five of the main food groups which aids good family nutrition, was the key strategy adopted. Establishing the growing of traditional nutrient rich crops and seeds, facilitating seed preservation and storage by women, and promoting and supporting kitchen gardens were all promoted therein.

4) Off farm income generation: Supporting the formation and strengthening of women's Self Help Groups, trained in income generation and micro enterprises, related to lac cultivation, mushroom farming, piggery and poultry rearing, yielded rich dividends. Particularly, the programme design incorporates interventions and strategies to empower women through access to benefits, start up support for a range of livelihood options and increasing access to savings and micro credit. Women were actively encouraged to participate in community groups, and be involved in the development process.

Overall achievements of the programme are that target families have enough food and income, year round, to sustain and maintain their wellbeing, their agricultural land is fertile and productive and the rights of the community to their entitlements is well realised. The community is more cohesive, confident and proactive in working with various government bodies and institutions in continuing to promote their economic, social and health status.

Together IGSSS and SCIAF, in the PLANT programme, have developed an equitable relationship borne out of mutual respect, strong cooperation and collaboration, built around our shared values, with transparent responsive communications and actions. IGSSS have proved to be a strategic and innovative partner; the staff, from management down to the field level, having strong technical expertise, developing responsive strategies and clear goals, working closely with the community during this programme cycle, being open to learning and replicating from regular reviews. I would like to express my very great appreciation to IGSSS for their hard work, commitment and efforts in the achievement of this programme, which has contributed greatly to SCIAF's sustainable livelihood aim.

It has been a pleasure to work with the IGSSS team during this and other related projects and programmes.

Sadie Scullion

Programme Officer
SCIAF



CONTEXT

Provision of Livelihood and Nutrition Security for Tribal Families (PLANT) project was implemented in 20 villages of Churchu block of Hazaribagh district (Jharkhand) during December 2014 to December, 2017. The objective of this programme was to increase food and income security of 1000 most marginalized families.

Key programme components:

- Increased access to social security entitlements
- Increased and diversified crop production
- Dietary sufficiency and variety in food intake;
- Increase in women's income from off-farm activities
- Enhanced community participation in development activities and improving efficacy of community level institutions.

Envisaged outcomes of the Project:

- 1000 households (60 women-headed) receive full range of social entitlements
- 500 farmers with increased and diversified crop production; they harvest and manage their water resources
- 350 families eat three meals with dietary diversity every day.
- 400 women have increased income and access to support through Self Help Groups

In this context, SCIAF assigned this Impact Evaluation study of the PLANT project to assess the performance of the programme with the following specific objectives:

1. Provide IGSSS and SCIAF with an independent, evidence-based assessment of how the programme has fared in the course of 3 years, as per DAC criteria
2. Provide key observations and recommendations by capturing the best practices and Learning, along with case studies and video documentations, so that it can be replicated in future endeavours
3. Assess the systems, process and programmatic approach of IGSSS and give recommendations for improvement and development of strategies

The areas of assessment included:

RELEVANCE

- How did the project team ensure a fair and equitable selection of beneficiaries and that the beneficiaries selected were bona fide targets, have the most vulnerable groups

- been reached?
- How did the project ensure that programme was relevant to the needs of the target group and continued to be relevant against changing needs of the target group during the project period?
- Are the activities and outputs of the programme consistent with the overall goal and the attainment of its objectives?
- Are the activities and outputs of the programme consistent with the intended impacts and effects

EFFECTIVENESS

- To what extent have outputs (project results) led to the achievement of project outcomes and accomplishment of project purpose?
- To what extent have the outputs been achieved, and to what extent are the intended target group adapting and applying alternative practice and learning?
- What were the major factors influencing the achievement or non-achievement of outputs?
- To what extent has the programme effected and contributed to its wider environment, the long-term social change at the community level?
- Has the project contributed to poverty alleviation of the target beneficiaries?

EFFICIENCY

- Has the project been cost-effective?
- Have project outputs been achieved at reasonable cost or would other approaches have led to the achieving of the same results at more reasonable costs?
- How well have the activities transferred resources into the intended results in terms of quality and timeliness?
- Have financial resources been used as planned?

IMPACTS AND OUTCOME

- What are the most significant changes that our work has brought in, both in terms of specific issues or constituencies?
- Has our project reached out to the most

marginalised in the urban poor contexts worked in?

- To what extent can these significant changes be attributed to the project specifically?
- What has been the specific value add brought in by IGSSS in the project approach?

SUSTAINABILITY

To assess whether the positive outcomes are will be carried out after the programme ends:

- To what extent are the benefits to the target communities sustainable in the longer term and what mechanisms have been put in place by the programme to reduce reliance on external support?
- What is the ability of target communities/ groups to maintain the benefits of the program, specifically with regard to income stabilization/enhancement and food security, collectivization and convergence?
- Financial sustainability – whether communities will continue to organise themselves after the financial support of the donor has ended?
- Replication - to what extent was/is the programme successful in establishing models of interventions which could be used for other areas?

METHODOLOGY

Evaluation of the project was carried during December 2017 and January 2018. The objective was to generate evidence-based assessment including recommendations as to how the programme has fared, capturing the best practices and learning, including the systems, process and programmatic approach on the line of DAC (Development Assistance Committee) criteria (relevance, effectiveness, efficiency, impact and outcome, sustainability)

The methodology factored in the fact that the project was evaluated at the end of the project cycle, and the outputs, outcomes, impacts, challenges - climate and other, might have happened and progressed at different points of time through the project duration.

Sequence and tools used as part of the methodology included the following:

SEQUENCE

- Review of project documents (baseline, micro-plan, log-frame, progress reports,

mid-term evaluations, case study/ documents, etc.)

- Consultation with the project staff and community volunteers focussed on: insight on definition of key terms/expressions used in project documents; the indicators, sources of verifications; sample design and plan for field work as per the ground reality
- During consultation, the field staff and volunteers were asked to suggest 'good cases' as perceived by them; each were to suggest 5 individuals/families and 3 community institutions, exemplary cases from every project village. The names were triangulated against the baseline data and project support to 'shortlist' 70 names of individuals/community institutions representing different strata of the target groups (with assumption that a number of them might not be available on the days of visit). Sample families were not informed prior to visit. Over and above, families and cases were picked up at random during the Focus Group Discussion in the selected villages (15 to cover all type of activities).
- Field level evidence based evaluation was undertaken
- Analysis of findings ; development of the deliverables

TOOLS

- Review of the project data base, documents
- Focus Group Discussion/interview/ physical observation
- Case study
- Visual/audio-visual documentation
- The community level evaluation process was guided by a checklist developed in consultation with the animators and volunteers.

5 video clips were developed:

- Decentralised Irrigation: Resilient Food, Nutrition and Income Security
- Enabled Community: Sustained Impact
- Crop Diversity: Multiple Benefits
- Nutrition Leads to Well-being of the Marginal Families
- Giving Income in Hands of Women

GEOGRAPHICAL AND SOCIO- ECONOMIC PROFILE OF THE PROJECT REGION



- The project cluster aligns with major topographical and climatic features—plateau and predominant dry land (despite 1200+mm average annual rainfall) of the Hazaribagh district and 16 community development blocks
- The PLANT project villages / habitations represent the water stressed plateau land. Most of the project villages have multiple habitations. Project interventions are limited to 30 habitations from project villages. These villages were shortlisted following a process of field appraisal, discussion with community and baseline survey.
- Selection of villages was based on the following criteria:

- number of families living below poverty line
- number of families belonging to socially backward groups ST, SC, OBC
- those with low level of food and income security
- those facing constraints in adequate crop production and income generation due to factors such as poor soil health, lack of irrigation facilities, limited means of income generation, inefficient livelihood practices

- In Churchu block, 58% of the main workers are cultivators and agri-labours and more than 90% of the marginal workers are cultivators/agri-labours. Of the main workers, women constitute 33% of the cultivators, 26% agri-labours; and 50% of the marginal cultivators and 55% of the marginal agri-labours.

Given this profile of the working population of the Churchu block, it was a worthwhile strategic decision to engage in improving the assets and practices related to farming with specific reference to women and youth; to prepare them for informed decisions and skilled participation to improve quality of livelihood in the midst climate variability.

- As per the spread of the project activities, most of the results (harvest, income, and growth) are attributed to one or two seasons.
- As per the Census 2011, the average population of the PLANT project villages is 662. Child population of 0-6 years comprise 17% of the total population with 49.5% male and 50.4% female children. Scheduled Tribes (ST) and Scheduled Castes (SC) comprise 38% and 17% of the population respectively.
- 62% of the population above 0-6 years age group are literate- 75% male and 49% female.
- Total workers constitute 49% of the Population - 54% male and 46% female.

27% of the workers are main workers (74% male, 26% female); 38% of the main workers are cultivators (67% male, 33% female), 20% are agri-labourers (74% male, 26% female)

64% of the workers are marginal workers; 36% of them are marginal cultivators (equal percentage of both sexes), 55% are marginal agri-labourers (45% male, 55% female)

RELEVANCE

The project cluster aligns with major topographical and climatic features – plateau and predominant dry land despite 1200+mm average annual rainfall –of the Hazaribagh district and 16 community development blocks. The PLANT project villages / habitations represent the topographical profile of the region - water stressed plateau / undulated land and narrow valleys.

Going by the profile of the working population of the Churchu block it made sense to engage with women and youth, to capacitate them to take informed decisions and actively participate in processes to make their livelihood climate resilient. The fact that amongst the main workers, women constitute 33% of the cultivators, 26% agri-labourers and 50% of the marginal cultivators and 55% of the marginal agri-labourers, corroborates this choice of the focus group.

Design of suitable project activities/ Interventions was primarily guided by the following objective criteria:

- Well within the skill and capacity of the target group
- Culturally acceptable; linked to and improvisation of existing practices
- Appreciable results within the season/short term
- Directly contributing to improve food and income security; enhance food diversity and nutrition
- Augmenting diversification of livelihood; promoting uptake of allied livelihood activities
- Potential for scalability and replication
- To establish convergence and synergy with on-going government schemes and programmes
- Improvement in family/community assets to increase the productivity of crops and farmers' income in the long run
- Enablement of families/community to make informed choices and decisions

ANALYSIS AS PER DAC PARAMETERS

It is not difficult to enumerate the visible and the community lived experience of impact of PLANT at the formal closing of the project. What matters most at the end of the day are the overarching, long-term and transformative impact trends in a region heavily at odds owing to its topographical features, the exposure and sensitivity of the livelihood practices to nature services and not so effective capacity of the community to address the adverse impact of the changing climate. In the light of the insight gained from the evaluation process, it is also important to see the impacts of the project in perspective of the earlier interventions in the area.

The project activities and outputs have largely been consistent with the intended impacts and effects. Most strategic ones in terms of effectiveness and sustainability include the following:

- The System of Rice Intensification (SRI) is a methodology aimed at increasing the yield of rice produced in farming. It is a low water, labour-intensive, method that uses younger seedlings singly spaced and typically hand weeded with special tools. System of Rice Intensification (SRI) has helped the marginal families (with landholding size 0.5 to 1 acre) to become food secure in one season. Families claim to have harvested 1.5 to 2 times the conventional produce- at least 8 to 12 quintals more than the conventional 10 to 18 quintals per acre). Many families have been consistently doing so over the last two years with expansion in area under the SRI.
- Cultivation of wheat as a second crop post rainy season supported by the existing open wells and newly created water sources through the project.
- Introduction of improved breed of goats and pigs with mentoring and financial support by Women Self Help Groups (WSHG) has led to sizeable and assured income within a short period of time. These breeds are resilient and easily fit into the peripheral environment of farming and food systems. This strategy of introducing the improved breed into livestock rearing through WSHG has had positive impacts. It is quite promising in the long run as it is easily replicable and sustainable. For instance, the male goat is revolved among the members of the WSHG as well as non-members. Each member keeps the improved 'male goat' for about a month with the existing herd for procreation before passing it on to the next member. This practice helps spread the improved breed while also binding the group members and keeping the group alive.
- The nuance of growing backyard vegetable and greens through the model of 'circular garden' to grow varieties of vegetables at any given time with waste water (where irrigation is not possible) has found acceptance

amongst women and there is increase in backyard vegetable cultivation for family consumption. Replacement of chemical fertilizers with organic manure (vermin compost/ farmyard compost) in farming has been incorporated successfully through the 'Nutrition and diversity of food items' component of the project.

- Number of cases of translation of orientation/training imparted through the project into action was observed: for example line sowing/planting, spacing, irrigation, mixed cropping.
- Though the community institutions facilitated through project are at varying stages of gaining strength but the process has revived number of inactive WSHGs and helped the stakeholders especially youth, to evolve as articulate leaders taking interest and initiatives in group activities, community development, accessing entitlements, and utilizing opportunities of convergence with government social security/welfare schemes.
- Mobilisation of community institutions has led to sizeable increase in availing social security entitlements including food and food supplements at primary school and ICDS centres, pension, rural housing, road construction, farm pond development, follow up of toilet construction, etc.



Spread of soft and hard activities throughout the project period :

- Training and orientation of the members of the community institutions were followed up throughout the project duration and capped with 'Project End Meet'.
- Support for crop diversification, nutrition was mostly facilitated during 2014 -15 and 2015-16.
- Women focused income generation activities were mostly facilitated during 2015-16.
- School nutrition/kitchen garden/ sanitation-hygiene campaign was facilitated during 2015-16 and model of circular nutrition garden was introduced in 2016-17.
- Construction and commissioning of irrigation structures - 44% were completed during 2014-15, 36% during 2015-16 and 19% during 2016-17.
- Improved technology (drip, lift and greenhouse) - 79% were facilitated mostly during 2015-16; 18% during 2014-15 and 3 % during 2016-17.
- Livestock rearing as income generation activity was introduced in the last quarter of 2016 (partly spilled over to 2017).

Going by the spread of the project activities most of the results (harvest, income, and growth) are attributed to one or two seasons/less than one year to two years.

Two of the technically and socially challenging interventions (owing to acceptance and group dynamics issues) seem to have been implemented too early (drip irrigation) and too late (lift irrigation) limiting time for community mobilization which manifested in yielding limited results during the project period.

EFFECTIVENESS

Overall, the project is guided by the targeted outcome of attaining food, nutrition and income security. The strategy (of accessing entitlements from government provisions and schemes; improvising traditional practices in agriculture, better variety of seeds, emphasis on using organic manure, introduction of

Water Harvesting Structures which were akin to the conventional types, transfer of technical knowledge and skills etc.) has been well assimilated by the target communities and produced tangible results. Hence, the strategy has been very effective.

The activities that have not succeeded in generating the envisaged impact include: physical interventions such as micro irrigation, lift irrigation, check dams due to number of factors; for example, not allowing adequate time to pilot and demystify new technology (drip), not having sufficient time for follow up (lift irrigation), unimaginative choice of income generating activity (jelly).

All children are availing Mid Day Meal (MDM) at schools and ICDS centers and students have become regular at school (73% attendance in school on any given day)

408 individuals availed old age pension, 57 disability pension, 50 widow pension

650 availed job under MGNREGA 83% have improved food security by 6 to 9+ months

Information from the sample families and observation of the community institutions indicate about 20% target families do either SRI or wheat or both in 0.25 to 0.5 acre of land (at least 5 to 8 quintals increase in good grain production)

EFFICIENCY

Cost effective: Most activities, except drip irrigation, lift irrigation and check dams, in context of the project community and project objectives, appear to be cost effective. The activities recover capital in one season or in a short term of one or two years.

Potential activities for learning and adaptation: WADI project strategy, result oriented micro-watershed treatment, availing matching support for poultry facilitated by the block office of the Welfare Department etc.

IMPACTS AND OUTCOME

Most significant changes include:

- Improvement in nutritional intake of the focus community owing to dietary diversity, income security as a result of combinations of processes working in tandem- almost all the eligible families availing social society entitlements; reported increase in food production due to System of rice intensification (SRI) and wheat as a second food crop (some farmers doing it as System of Wheat Intensification, inspired by SRI); significant increase in marketable crops and vegetables and significant increase in home-grown vegetables.
- While the creation of alternative irrigation sources have helped in partially reducing the vulnerability due to climate fluctuation (partially because the sources are location specific and they too are dependent on rainfall), the off farm income generation through rearing of improved breed of goat, pig (and poultry) are emerging as robust dependable source of income to absorb the shock.
- Introduction of techniques like SRI, backyard nutrition, improved variety of livestock, vermi-compost, organic manure etc. is delivering tangible results in a short span of time which indicates good chances of long term uptake by the community.
- One more effective strategy has been positioning women in forefront of



- development—by transferring new skills to them (SRI, organic farming, off farm income) through the SHG. Women became visibly confident, enjoyed the process and the new introductions kept the group dynamics alive.
- The process of project management evolved with the project- number of mid-course corrections and improvements were brought in; for example adding new hamlets; more inclusive Village Development Council (VDC), consolidation of farmers field school; new models to help consolidate the community interest such as ‘circular nutrition garden’, etc.

SUSTAINABILITY

The number of farmers doing SRI and cultivation of wheat and marketable vegetables has increased considerably. The use and production of organic compost, crop planning, off farm income generation, use of improved breed of livestock; involvement of community and leadership- all these factors have helped further the impact.

Replicable and scalable components: Women’s SHGs as hub for food-income-nutrition- alternative skills for sustainable agriculture; diversification of livelihood and crops for quick income and food security, circular nutrition garden model, decentralised water harvesting and irrigation, rearing of improved breed of livestock and strategy of focussing on women and youth showed positive results and potential for replication.

INSIGHTS FROM THE EVALUATION PROCESS/ FINDINGS OF THE STUDY

India already has in place social protection as a component of food security.

There has been significant increase in access to social security entitlements: 408 persons avail old age pension, 86 persons get disability pension, 57 persons get widow pension; 878 families have job cards and 650 have availed jobs under MGNREGA. Statistics pertaining to convergence with government social security schemes is available at the end of the report.

As per baseline, only 20% family availed food supplement entitlement; post project all eligible children are availing Mid Day Meal (MDM) at schools and ICDS centers as they have become regular.

Significant improvement in food security and dietary spread due to increase in crop diversity and increase in production. In place of only paddy families cultivate wheat, pulses, oilseeds, and vegetables in the nutrition garden. Adoption of improved methods (SRI) has substantially increased food grain production. Due to increased income through social entitlements and diversification of means of livelihood, families freely buy food items as required.

Access to social security entitlements: Ensuring target families access food, welfare and income entitlement.

Food security primarily has the three objectives-- of ensuring production of adequate food supplies, maximizing stability in the flow of supplies and securing access to available supplies by those who need them.

Access to food has two defined components to it. One, interventions aimed at boosting agricultural productivity and the second, adopting strategies to promote employment, social protection measures and Public Distribution System to improve access to available food by the poor.

NO. OF FAMILIES HAVING 2 MEALS A DAY		
NO. OF MONTHS	PRE	POST
	PROJECT STATUS	PROJECT STATUS
LESS THAN 3 MONTHS IN A YEAR	303	11
6-9 MONTHS IN A YEAR	115	540
MORE THAN 9 MONTHS IN A YEAR	293	

Going by the information from the sample families and observation of the community institutions, about 20% of target families do either SRI or wheat or both in 0.25 to 0.5 acre of land which has led to at least 5 to 8 quintals increase in production.

MID DAY MEAL (MDM)

The Evaluation process followed MDM programme at 3 primary schools with average students of 51 per school (minimum 18 to maximum 76 in strength with 56% girls and 44% boys).

Following are observations by the faculty:

- Children upto 4-5 years of age go to the Integrated Child Development Services Centre.
- There are no school drop-out children; Churchu block reported as 'no drop-out' block. Teachers visit the habitations to look out in case of absenteeism. The Village Development Committee assists in this drive.
- Average attendance is 80% and more, except during the paddy cutting season owing to supportive work in the farm.
- All the schools follow standard menu for the MDM programme:
 - Monday: Rice, pulses and seasonal fruit / egg
 - Tuesday: Rice, pulses and vegetable curry
 - Wednesday: Rice, egg curry and seasonal fruit
 - Thursday: Rice, pulses and egg/seasonal fruit
 - Friday: Rice, pulses and egg/seasonal fruit
 - Saturday: Plain khichdi/palakkhichdi (mixture of grains and vegetables)

- Teachers find it difficult to provide egg and seasonal fruit due to ever increasing cost but always give whatever possible within stipulated budget (INR 4 per child)





Factors other than availing social security entitlements that contributed to food and income security:

- Irrigation, technology transfer, awareness generation facilitated land based activities for 86% of families
- Increased production due to improved practices (such as SRI) and reduction in cost of agricultural input (due to increased use of organic manure, vermi-compost etc.) 59% farmers reported using a combination of organic and chemical fertilizers whereas 11% farmers exclusively use organic inputs.
- Switch over to hybrid seeds- almost all the families cultivate paddy and vegetables, though they continue to use a combination of traditional and improved seeds. Almost all sample farming families claimed that food security improved after switching over from traditional paddy to the hybrid variety.
- Water harvesting structures benefit 350 families (post rain crops)
- Building capacity of families (income from social security, jobs under Mahatma Gandhi National Rural Employment Guarantee Scheme, marketable vegetable, off farm activities) help families to have cash to buy required food items.
- From the sample households, 70 families do market some amount of farm produces.

Crop diversification and increase in level of production

The country is likely to be water stressed in the coming years. Therefore, hand in hand with technologies for water harvesting and storage, technologies for precision water application (like drip irrigation, sprinkler, lift etc.) methods need to be adopted. Water is crucial to farm activities.

The following has contributed to crop diversification and increase in production:

- Decentralised water harvesting structures and management by community groups
- Training induced exemplary practices by the lead farmers in every project villages
- Informally, following the skill training the Farmers Group, Water Users' Group, Farmers Field School members worked as a hub for dissemination of skill and handholding
- Support of new and improved variety of seeds
- Convergence from government schemes availed by the community institutions for water harvesting, improved agricultural tools, etc.
- Farm development using water harvesting structures like contour trenches
- Alternative use of water stressed up-land (horticulture, vegetable growing)
- Introduction of New marketable crops like water melon
- Farmers adopting improved method like mixed cropping and improved variety of seeds
- Demonstration farms acted as a primer for mixed cropping
- Family level production of vermi-compost
- Crop residue and farm by-products were used as fodder for rearing small ruminants
- Increase in water table and duration of moisture availability due to decentralised water harvesting structures (WHS)
- Additional source of income through fish cultivation in WHS such as farm ponds

WATER FACTS

Due to strategic site selection many of the Dovas (farm ponds) access spring sources of water and yield water throughout the year

43% of the water harvesting structures yield water perennially and the rest for more than 7 months

Water harvesting structures benefit around 350 families

Water harvesting structures have increased resilience to climate variability



H- Wall check dam (Purnadihi) filled with silt load after first rainy season needs to be cleaned up by the Water User Group for proper functioning next year



Group-Drips did not succeed in finding acceptance; most not used after the first time; should have been facilitated with slow pace starting with 'successful pilot' (Jordag)

The changes brought in by the project interventions include the following :

- Variety of food grain, pulses and vegetables are grown
- New methods and techniques employed in crop growing practice
- Increased use of organic inputs (vermi compost/compost)
- Regulated grazing of domestic animals to facilitate growing post rain crops
- Judicious crop selection (as per availability of water), economy in water use
- Increase in farm based cash income
- Triggered farmers interest in land development
- Increase in internal wage opportunity
- Significant improvement in food diversity

INSPIRED SELF INITIATIVE-EXEMPLARY USE OF UP-SLOPE LAND:



This is a case of translating inspiration into action and making a point that with little land development it is possible to make low productive slope land very useful.

Raju Marandi, 23, of Lothe village got inspired with the idea of growing off-season marketable vegetables after listening to his elder brother sharing his learnings from the training and ex-

posure organised by PLANT at Krishi Vigyan Kendra (KVK) at Hazaribagh. In consultation with his elder brother Raju, decided to develop their 1 acre slope land at the outskirts of the village.

They had one sparingly used open well. Raju terraced the slope land and planted 10,000 cabbages and few hundred plants of green chilli.

However, irrigation was not adequate. The open well of 35 feet depth holds about 10 feet of water, gets exhausted with two hours of pumping and requires 2-3 days to replenish. On top of that kerosene is not easily available to run the pump when crops needed irrigation. As taught in the training, Raju bought about 1 quintal of vermi compost from Hazaribagh and applied during planting and at the time of first weeding 3 weeks later.

“Despite inadequate irrigation, the plants are doing well owing to vermi-compost”, he observed. He did not use chemical fertilisers at all. If he sells the produce at Churchu market, he expects a net profit of INR. 20,000 in the current season. Raju is pursuing graduation and lives with his elder brother’s family. The family of 9 depends on farming on 5 acres of land including slope land. Raju plans to deepen the openwell, change the kerosene pump and continue with cultivation of marketable vegetables in an organised manner. His farm along the roadside is quite eye-catching. Raju’s initiative is a case in point for the farmers having openwells at up-slope land. Many farmers do have wells but do not use it optimally.

MULTIPLE LAYERS IN DEVELOPMENT:

During assessment of the PLANT project, a brief interaction with Sandeep and Sunil Marandi of Bando Tola, Gondwar village provided valuable insight into their growth story. System of Rice Intensification (SRI) was revived during the PLANT project. 8 marginal farmers, with landholding size of 0.5 to 1 acre, of the Bando Tola used the SRI technique. In the rainy season tomato was revived again after a gap of 3-4 years, through seeds provided under the PLANT project in 2016. However, in the season the rates fell due to surplus production of tomatoes. "Nevertheless, farmers could make a net profit of INR 8000 each", observed Sandeep.

"This piece of slope land was remaining fallow two years ago. The 15-acre cluster was developed with a ridge through the PLANT project. It has helped recharging water in the open wells and ponds. This has made water available right up to June and is greatly helping irrigation", shared Sunil. "Last year 10 farmers had cultivated red gram (Arhar) and produced about 60 kilograms each. In the current year they have grown black gram" added Sandeep.

Their village development committee (VDC) has two savings groups. They save INR 20 per member per week. "Group members mostly take loans for seeds and other agricultural inputs. Two farmers have chosen to continue with vermi-compost as introduced by the PLANT project. Farmers have not stopped the use of DAP/urea fertilisers, but the quantity has reduced. Farmers now buy vermi-compost from the market, which is a recent practice", they observed. "Farmers are improving with every intervention. The earlier interventions introduced new techniques to the farmers.

Now the focus is on regularised saving by the groups. We have 15 acres of developed land and improved irrigation" they summarised the benefits from the PLANT project.



Access to Nutrition round the year

Apart from the food supplement for children through Mid-Day Meal (MDM) programme at schools and through ICDS centers, at least 70% of sample families grow their own vegetables through rains and winter and 50% also in summer using available water. This has significantly increased the dietary intake. “We make about two items from seasonal vegetables and greens with meals”, observed most women.

The following project interventions contributed to the change:

- Multi-pronged approach of training, demonstration of models, awareness generation through regular discussions at women self-help groups (WSHGs), support of seeds etc.
- Demonstration of linking backyard kitchen garden to use of domestic waste water.
- Induction of the model ‘circular garden’ seems to have caught the imagination of women and they have tried to grow vegetables as per the seasonal cycle to get vegetables for domestic consumption all-round the year.
- Significant improvement in accessing the food and social security entitlements
- School nutrition garden and campaign was tried though it did not survive long due to inadequate fencing against wandering animals and infrequent watering. However, through the students it created a demand at the family level
- Most women interviewed preserved seeds to maintain continuity

Papaya is planted in the middle of the circle.

Next in the radials are planted chillies, brinjal, okra/ lady’s fingers, tomatoes etc. i.e. plants of medium height. In the outer circle are planted coriander, radish, spinach and other greens which are of small height. In the water pathways ridge gourd, bottler gourd, bitter gourd, yard bean, French bean, cluster bean etc are planted.



Some women have tried the ‘circular garden model’ to continue the chain of production of vegetable greens round the year with help of waste water from domestic use. Almost all the families planted vegetables in their backyard even post rains and retained seeds from the monsoon vegetables.

In picture: Ground plan of a typical nutrition garden model facilitated by the Project.

Income to women through off farm activities

The following observations were shared by the community members who engaged in off farm income generation activities:

- Improved breed of pigs and goats were extended as support through the PLANT project.
- Improved breed of male goat was rotated amongst the members of the WSHGs for procreation with existing herd. Most groups have completed one round each. The offspring goat kids are comparatively bigger in size. They are stall fed with green leaves collected from the forest.
- Most of the improved variety of piglets have reproduced and given birth to 7 to 9 piglets at a time. 80% of offspring piglets have survived. Most mortality reported is during the transition from summer to rainy season. Stall fed piglets grow fast and attain about 50 kilograms weight in 6 months and give birth to piglets by 7 months.
- Rotation of male goats/ group pig rearing help keep the WSHGs active.
- Expanding improved breed through WSHG proved to be transformative model.
- The above activities have led to robust resilience building against crop failure due to climate variability. However, some activities did catch up with the WSHGs. 5 WSHGs tried mushroom cultivation but did not continue due to unavailability of straw and destruction of the spawn and mushrooms by mice.

“We will not let the chain break, some vegetables will always be available round the year”,

remarks Kiran Tudu of Bali village.



Leaves collected from forest are the main fodder for stall fed goats. Absence of alternative fodder may emerge as a stress factor for the forest as preference for goat rearing in on increase at present.

Livestock rearing status:

PIGGERY

- 60 households received 1 male and 1 female piglet. Each WSHG was given 3 female and 1 male piglets.
- Through sharing and convergence, at present 40% households rear improved pigs

Pre-project only 24% households engaged in piggery

GOAT KEEPING

- 30 SHGs received 1 male goat of improved breed for rotating amongst members
- For group farming, each WSHG was given 3 female and 1 male goat
- Through sharing and convergence, at present 66% households keep goats

Pre-project, only 58% households engaged in goat keeping

POULTRY

- 43% households started poultry farming post project

Pre- project- only 27% of households did poultry farming

In Tasnalo village, the WSHG of 12 members was supported for piggery. Pig shed, along with 3 female and 1 male pigs, was provided under the project. The piglets received were 2.5 months old. Two members from the group take turns to clean the shed and feed the pigs. Broken rice, chaff, grass etc. is given as feed. The piglets weigh above 50 kilograms and would sell for INR 150 per kilogram of body weight. After birth of piglets the group plans to sell out two grown-up pigs. Makarsankranti and Holi festivals in January and March months respectively are the best time to sell owing to festival demand.



MULTIPLE RELIABLE SOURCES AND GOOD PRACTICES LEAD TO NUTRITION AND FOOD SECURITY

Binoti Tigga, 47 years old, lives in Upper Tola of Dhaman Saria village with her family of 4. Binoti received no education, and has been a widow since more than a decade.

Pre-project, her family lived out of 2 acres of land; her widow pension (INR 7200), rice from the Public Distribution System and few heads of goats and poultry to supplement cash income. Their food security took a good turn when they switched from traditional paddy to hybrid paddy and started cultivating wheat post rains.

They are at present food, income and nutrition secure, thanks to the interventions of the project.

The family cultivates organic SRI in 1 acre of land and get around 22 quintals, which is 10 quintals greater than the usual production. Informed and inspired by the inputs received through the project Binoti only uses vermi-compost. She has produced 2 quintals in two batches from the unit supported through the Project. “I only used 2 kilograms of DAP fertiliser in a small plot of rice paddy for comparison”, she shared. She also uses vermi-compost for growing vegetables for self-consumption. She has ‘literally’ followed the tips she received for vegetable cultivation-line and space and organic manure and is well aware of the benefits.

Binoti was supported with 2 piglets. The pigs were stall fed with rice residue, paddy or wheat chaff, grass mixed with Mahua (*Madhuca Longifolia*) left over, etc. They multiplied in time and she plans to sell them off when they gain good weight. “Greater availability

of feed owing to better crop production, has made stall fed pig rearing easily manageable and a dependable source of income”, observed Binoti.

She and her son have attended number of trainings; she recalled agriculture, fish farming, and poultry farming. Binoti is a member of the Women Self Help Group (WSHG) established in 2011, revived and strengthened during PLANT. There are 10 members, saving INR 10 per week, and meet weekly once. They wish to avail a government loan of INR 50,000 for business.

She sometimes attends Village Development Council meetings. Recently, they have decided in favour of controlled grazing on a part of land, so that families can grow post rainy season crops including wheat.



COMMUNITY INSTITUTIONS	POST PROJECT STATUS	PRE-PROJECT STATUS
WOMEN SHG (WSHG)	WOMEN SHGs ARE FUNCTIONAL IN 20 VILLAGES WITH 1-4 SHGs PER VILLAGE. THERE ARE A TOTAL OF 43 SHGs WITH MEMBERSHIP FROM 739 FAMILIES	WOMEN SHGs WERE THE ONLY VISIBLE COMMUNITY BASED ORGANIZATIONS WITH MEMBERS FROM 518 FAMILIES
VILLAGE DEVELOPMENT COMMITTEE (VDC)	IN 20 VILLAGES, 719 HOUSEHOLDS ARE MEMBERS OF VDC	
FARMERS FIELD SCHOOL (FFS)/ FARMERS' GROUP (FG)	FFS AND FGs ARE FOUND IN 20 VILLAGES	
WATER USERS GROUP (WUG)	WUG IS FOUND IN 15 VILLAGES	

Participation of community institutions in community development

Facilitated community institutions include: Village Development Committee (VDC), Farmers Group (FG), Farmers Field School (FFS), Water Users Group (WUG) and Women Self Help Group (WSHG).

Interaction with members from the above groups revealed their proactive engagement in the following:

- Selection of target group, selection of sites for different interventions
- Follow up of convergence and entitlements from the government social security schemes
- Follow up of attendance in school, Mid Day Meal and Food supplements in the ICDS Center
- Follow up of recent constructions of toilets, housing, village road etc.



SUMMARY OF ACTIVITIES FACILITATED BY IGSSS AND CONVERGENCE AVAILED BY COMMUNITY (THROUGH THE PLANT PROJECT) IN INR

INPUT COMPONENT	IGSSS CONTRIBUTION (INR)	CONVERGENCE FROM GOVERNMENT SOCIAL SECURITY SCHEMES AVAILED BY COMMUNITY (INR)
WATER SECURITY	2550000	11201000
AGRICULTURE	2206000	4193900
LIVESTOCK	1422500	4571000
HOUSING SCHEMES	0	16685000
TOILET CONSTRUCTION	0	11844000
TOTAL	6178500	48494900

Village Development Council (VDC) rotates the leader every year.

All eligible families access Public Distribution System entitlements.

8 families are doing SRI regularly.

VDC has introduced grazing regulation and encourages farmers to do post rain cultivation in clusters.

Recently VDC has mobilised housing under the Prime Minister Housing Programme.

Youth in the village have interest in sports and play football.

VILLAGE DEVELOPMENT CENTRE

- Village Development Committees in 14 villages save INR 40 per member per month
- Village Development Committees meet on fixed date of every month (the groups met had at least one meeting in last 2months)
- Because of the project process, at least 10 articulate leaders have emerged in every village
- Visits to the block office and district offices have increased in frequency to avail entitlements
- Village Development Committee members actively participated in facilitating demonstration farms, organic farming, line sowing, mixed farming
- Most Village Development Committees have introduced controlled grazing to encourage post rainy season crop cultivation.
- Village Development Committees mobilized labour contribution for activities
- As per estimate by PLANT the monetised value of convergence available by VDC during the project period is INR 4, 84, 94,900.

**SOCIAL SECURITY ENTITLEMENT / CONVERGENCE ACCESSED BY
THE PLANT PROJECT COMMUNITY DURING
2014 – 2017**

SOCIAL SECURITY		FOOD SECURITY		HOUSING & SANITATION		LIVESTOCK REARING		AGRI-SUPPORT		WATER HARVESTING	
OLD AGE PENSION	408	PDS	909	PMAY	648	Cow SHED	23	AGRICULTURAL EQUIPMENTS	21	WELL	24
WIDOW PENSION	50	ICDS	440	IAY	71	PIG FARM	17	POLY NURSERY	1	DOVA	35
DISABILITY PENSION	57	MDM	686	Low COST TOILET	987	POULTRY FARM	20	FRUIT PLANTATION	2	POND	11
JOB CARD	878					VERMI PIT	280	POLY NURSERY	1	TUBE WELL	24
MGNREGA	650										

RECOMMENDATIONS AND CONCLUSION

What should have been done differently

- Strategy of mobilisation of most backward communities like the Birhor, could have been customized due to their poor level of acceptance of new ideas, lack of unity and mobility
- Emphasis on behaviour change in capacity building
- Spacing challenging activities at the beginning of the project to have more time for mobilization and follow up (for example- lift irrigation)
- The overriding object of the project being food, nutrition and income security, 'localised soil, conservation check dam' in isolation could have been avoided in favour of more decentralised options.
- Water Harvesting Structures having limitation of localised impact, should have been supplemented by decentralised in-situ, soil and water conservation methods.
- Baseline data-collection could have been more disaggregated (information on education, skill level, livelihood practices, opportunities of focus group could help develop the strategy more appropriately)

Areas of improvement - Baseline data collection and use in Project design

Village profile (along with family level data) with segregated information on land (type and use including crops), water resources, forest- type, resources, use and other common resources.

Profile of previous interventions - both by government and NGOs and their analysis.

Segregated landholding data is missing. It could help identify the most vulnerable families and customize interventions as per type of land holding.

Climate and livelihood analysis of opportunities and threats. Both the ground and surface water bodies are reportedly rain dependent and mentioned as a

limitation in annual progress reports.

Profile of trees, including horticulture, is missing in the base line. Planning of long duration crops in combination with short duration ones can strengthen resilience and sustainability.

Strategy should reckon local sources of livelihood (for example integration of Mahua (*Madhuca Longifolia*), a local fruit as food or income source is not adequately focused, despite it being a major source of income.

The baseline identified number of other problems such as scarcity of fodder, threat of wild animals to poultry etc. could be strategized in project design (as small ruminants were promoted as major source of income)

The baseline also reveals constraints in acceptance of new ideas by a chunk of the target population and to some interventions like drip irrigation, which needs to be factored into project design.



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