



CARE INDIA
SOLUTIONS
FOR
SUSTAINABLE
DEVELOPMENT

IMPACT EVALUATION OF CLIMATE
CHANGE ADAPTATION FOR RESILIENT
SMALL SCALE TEA PRODUCTION
PROJECT

SECTION 1 TITLE, EXECUTIVE SUMMARY, CONTENTS, ABBREVIATION

EXECUTIVE SUMMARY

The objective of the proposed study is to assess the impact of the climate change adaptation for resilient small scale tea production project with respect to set indicators for improved tea production and make recommendations.

The study had covered 30percentage of the impact population covered under the project for data collection. 150 tribal tea farming households out of 500 tea farmers and 33 hamlets out of 76 hamlets were covered. The desk review of project reports, documents, IEC materials and in depth interview with project staff involved in project development and implementation, physical verification of farms for adoption of best practices using a check list and taking photographs, in-Depth interview with key stakeholders like UPASI, Tea board members and other government line departments involved in the project, structured Interview with the tribal farmer, household members who are members of VLG, received trainings, participated in the programs like demonstration plots, adopted best practices, focused group discussion with VLG male and female members separately to identify challenges faced in adopting the best practices were done as part of the study

Major Findings

Most of the sampled respondents live in village panchayats and were above 50 years of age, do not have children and no formal education. Their children study in government schools which indicate their affordability status. They are mostly Hindus and belong to Paniya tribes.

Thirty-nine VLG and nine VSHG's were formed. The VSHG were renewed and are in a position to access entitlements from government schemes. The respondents had membership with tea board and most of them had joined in 2011. The group meetings were conducted once in a month with the support of CTRD staff. It should be noted that last group meeting was conducted in Dec 2014. In spite of 62percentage of the respondents receiving benefits like inputs from tea board and other government agencies, only a small percentage of participants could relate their affiliation with Tea board and other government agencies related activities schemes. On an average input support has been provided to percentage of beneficiaries and among the beneficiaries ---- percentage of beneficiaries had received input support from various agencies.

Trainings on five different topics had been provided during the project period. More than 50 percentages of the target families had been covered under pruning and quality tea plucking, soil and water management trainings, vermicomposting demonstrations. One third of the beneficiaries had been covered under organic tea cultivation and kitchen garden training.

Fifty percentages of respondents had increased awareness of soil testing. Before four years, fifty percentage of respondents did not follow any practice to conserve soil .However 90 percentage of respondents had participated in the training and almost all participants had adopted at least one soil management practice like avoiding chemical fertilizer application to farm pond preparation, making irrigation channels, dolomite application, intercropping, shade planting and soil testing . 60 percentage of the sample respondents who had attended training learnt to make u shaped irrigation channels from the training program. 38 percentage of the respondents practiced application of dolomite after the training. Dolomite was supplied to 22 percent of the target families by the project.

Fifty eight percent of the respondents had attended organic tea cultivation training and 85percentage of these training participants learnt about panchakavya preparation and few learnt about organic tea cultivation. 50percentage of the respondents attended vermicomposting demonstrations and learnt about it. None of the sampled respondents had knowledge about panchakavya before four years. The trend is 75percentage of the respondents who had applied panchakavya have attended training. The application of organic manure has increased from 12 percentages before four years to 30 percentages now. Among the respondents who had been applying organic manure, 34percentage of them had started applying organic manure prepared in pits and also have increased the frequency of application from one time in a year to twice or thrice in year after attending the training program.

More than 70percentage of the respondents had attended the training. 16percentage of the respondents had shifted from hand pruning to machine pruning. Majority of them have changed their mindset to practice pruning once in 3 years to 5 years after the training program. The number of respondents who were involved in knife picking has decreased from 38 percentage to 18percentage after the training program .However significant practices like silvertip cultivation, twice in a month picking etc. , two leaf picking etc.

Almost 25percentage of the respondents who attended the training have started adopting intercultivation operations like mulching, gap filling, and intercropping, triangular planting to manage weeds. The numbers of farmers who depend on chemicals for weed management have reduced from 7percentage to 1percentage after the training program.

50 percentages of the respondents had attended the training and learnt about nutritious value of vegetables. 10percentage of the respondents have started maintaining kitchen garden in their farms. 15 percentage of the respondents had learn about ridges& furrows, planting systems, spacing, bed formation, bar planting and pan dhal formation .

70percentage of the sampled respondents have participated in the exposure visit. However only three fourth of the respondents share their learning experience from the visit. Half of the respondents learnt about technical aspects of tea cultivation. However one fourth of them were able to adopt some technologies learnt from exposure visit like intercropping, green tea, herbal garden, tea powder making, pruning methods, silvertip, mushroom cultivation, silver oak planting, soil testing, and vegetable cultivation. Vermicomposting preparation and tea board related activities.

85percentage of the participants had attended stakeholder level meetings and learnt about government schemes. 30 percentage developed new contacts, learnt about new technology, government schemes and linkages for welfare schemes.

Almost 35 percentages of the tribal tea farmers had shifted their dependence on inputs from private agencies to CTRD. However not many of them could directly link themselves with government agencies like Tea board

Regarding decision making in their family on sales of tea leaves, negotiation with buyers and procurement of inputs r tea cultivation, one third of families decisions are taken by husband ,one third families t decisions are taken by wife and remaining one third families both husband and wife take decisions. On further probe it was identified that in those families where decisions are taken by wife, it was mostly women headed households. In majority of the households, decisions regarding family issues, cultivation practices, buying assets and selling assets are taken by both husband and wife .In the women headed families and families with gender sensitive men decisions are taken by, women .Most of the households covered in the survey ,had more men with savings bank account compared to women. 27 women headed families and widows had savings account in their name. It is very critical that 31percentage of the respondents did not have access to any kind of bank loans. It is also interesting to note that those families that have joint account in the bank had also taken loan jointly. With regards to awareness on their rights and benefits at work place like minimum hours of work, minimum wages and other benefits , it was found that two third of the respondents had awareness Only 22percentage of the women members also hold patta in their name. It might be due to the intervention made by the project .One percent of respondents hold joint patta. It was identified that respondents who travel outside for work and earn relatively higher income had awareness about all the above aspects had taken joint decisions , opened joint account , provide education to their children in private schools . In contrast people who stay in a confined area and involve in occupations, irrespective of their formal education status do not have awareness on all the above aspects.

The respondents felt that that unity, cooperation and coordination among the members is essential for strengthening the society. Good leadership is important for developing a society. Periodical change in leadership is very important. The society should work towards implementing government schemes. The current scheme of CARE and CTRD should be continued .The society should formulate scheme to increase their income and work towards accessing inputs. Also many respondents felt that the society should focus on acquiring patta for their members. The respondents are not confident enough to access inputs from various government agencies. Most of the respondents expect their VSHG to work on Land rights and advocacy on priority basis followed by housing and basic needs. Less than 20percentage of the respondents wanted their society to provide technical advice, loans, implements, seedlings and fertilizers needed for tea cultivation and other crop cultivation. Hence this is a good insight and the society needs to relook on their plans further. More than half of the respondents feel that the project activities had been implemented in an efficient way. However 23percentage of the respondents do not agree to the above statement. The management and staff are of opinion that the project activities should have benefitted 60percentage of the target farmers. The project activities and VSHG has helped reduce the financial burden of tea cultivation at least among half of the respondents. However one fourth of the respondents do not feel that their financial burden has reduced. It may be due to the fact

that they have not received any tangible benefits like seedlings, fertilizers provided during the project activities.

A detailed data analysis revealed that 31percentage of the sampled respondents had attended the four trainings provided on topics like soil and water management, organic tea cultivation, vermicomposting preparation and kitchen garden .25percentage of the sampled respondents had attended three of the above trainings.26percentage of the sampled respondents have attended two trainings and 18percentage of the respondents had attended one training .One percent of the respondents had not attended any of the above trainings.

Four of the demonstration plots had been visited by the lead researcher. The demonstration plots had followed practices like pruning with financial support of the project, gap filling with saplings supplied through the project, irrigation channels had been made and half mound channels had been made for pepper saplings, silver oak saplings had been planted for shade, application of dolomite and bio fertilizer could be seen, vermin compost pits had been constructed in all these places and practiced by the beneficiaries. They have taken active part in the trainings organized at all places and in their own farms. The impact of all these practices could not be assessed during the visit as it is very early to assess the results as the inputs were supplied in the last three to six months period. The visible impact is the increased knowledge level among these farmers maintaining demonstration plants

Although the project has been designed to build the capacity of the farmers, it has not formulated specific training modules for each selected topics and used adult trainers for training the tribal farmers. Adults could not be trained in lecture method or one way communication. Most of the trainings had been handled by scientists and designated officials at much higher posts .The delivery of trainings had been in an instructional mode and do not have scope for involving the participants as active learners. Case studies, games and interactive sessions had not been designed for this project. Tribal farmers coupled with illiteracy would already distance them from the higher officials in terms of the power relations exhibited between them. This is quite evident from the fact that demonstrations on Panchakavya and vermicompost had reached most of the participants. This reveals the facts active learning should be facilitated among the adult learner like the tribal farmers. Discussion with project staff and document review revealed that considerable amount of resources had been spent in leveraging various support services for the target population. However the delivery of training should have been done with the support of adult trainers with defined set of modules developed for their situation.

LIFE project has been implemented in this location since 2011. However the capacity building project to mitigate climate change has been implemented in the recent one year period. The project has got systems, policies, procedures and resources to reach the target audience and produce results. This could be seen from the 18 demonstration plots set up during the last one year. The demonstration plots meet the standards as per its design and provide benefits to the farmers owning it. However it is difficult to measure the impact it has created among the households as most of the inputs in terms of financial support, sapling, fertilizers, technical support has been provided very recently. The increase in

productivity and quality of leaves, healthy tea plants, soil fertility would be visible after a couple of years. On the other hand rest of the beneficiaries (482) had been aggregated in groups and provided training on various topics and taken for exposure visits and stakeholder visits for developing linkages. The groups or societies have been registered and some of them had undergone renewal annually with the support of the NGO staff. These registered societies could not function independently and need the support of the staff for their day to day activities like conducting the meeting, managing the renewal and other linkages. These societies had not conducted their monthly meeting after the project got completed in December 2014. The members revealed during the group discussion that it is very difficult to mobilize the members for their monthly meeting. This shows that the members do not voluntarily and actively participate in the activities of the societies. Also the society comprises members from two to three hamlets, due to mobility; it is very difficult to attend the meetings for the members. It was also identified during the meetings that 30 percentage of the members are active in these societies and rest of them is reluctant to share their views and opinions. Under these circumstances, the training participation reveals that 30 percentage of the target population had attended almost all the trainings and programs organized during the past one year due to various reasons. Hence it is difficult to assess the real impact of the programme in this short period. The project should revisit the shortcomings and reformulate its strategy to reach the rest of the participants.

The project should focus on strengthening the VSHG, identify active leaders, develop leadership skills to conduct their meetings, facilitate decision making, accept and delegate responsibilities, develop linkages with government agencies and plan strategies for marketing and value addition of tea along with their group members. The project should develop a road map in order to transfer each of the above responsibilities to the VSHG members in a phased manner. As mentioned by the higher officials, they do not have outreach members to reach the right beneficiaries. Hence community level volunteers should be motivated to take up technical aspects lead small initiatives like silver tip, organic tea, and handmade tea and coordinate with agencies. The project in the long run should look for market linkages with initiatives like Fair Trade as the fair trade premium help them in fulfilling their basic facilities as addressed by most of the respondents. Hence facilitating market linkages along with technical aspects would help them in mitigating climate change.

ABBREVIATIONS

CISSD	-	Care India solutions for Sustainable development
LIFE	-	Livelihood improvement for economic security
IEC	-	Information education communication materials
UPASI	-	United Planters Association of South India
M&E	-	Monitoring and evaluation
VLG	-	Village level Group
VSHG	-	Village level Self-help group
KVK	-	Krishi Vigyan Kendra
NGO	-	Non Government Organisation
SHG	-	Self-help Group
CSWCR&TI	-	Central Soil & water Conservation Research and Training Institute
TNAU	-	Tamil Nadu Agricultural University
CTRD	-	Centre for Tribal's and Rural Development Trust
HADP	-	Hill Area development Programme
NABARD	-	National Bank for Agriculture And Rural Development
TNAU	-	Tamil Nadu Agriculture University

Table of Contents

SECTION 1 TITLE, EXECUTIVE SUMMARY, CONTENTS, ABBREVIATION.....	1
EXECUTIVE SUMMARY	1
ABBREVIATIONS	6
SECTION 2 INTRODUCTION (BACKGROUND).....	8
SECTION 3 OBJECTIVES, SCOPE, APPROACH AND METHODOLOGY	9
OBJECTIVES	9
GEOGRAPHICAL SCOPE	9
APPROACH AND METHODOLOGY.....	9
SECTION 4: FINDINGS.....	12
4.1 SOCIO ECONOMIC PROFILE OF THE BENEFICIARIES IN THE PROJECT	12
4.2 STRENGTHENING OF PEOPLES INSTITUTION:.....	14
4.3 TRAINING , LEARNING AND IMPACT AMONG THE BENEFICIARIES	18
4.3.1 Soil and Water Management Practices	19
4.3.2 Training on Organic Tea Cultivation.....	23
4.3.3 Training on Pruning and Quality Leaf Plucking.....	26
4.3.4 Impact of Kitchen Garden Training.....	29
4.3.5 Exposure Visits:.....	31
4.3.6 Stakeholder Level Meeting.....	33
4.3.7 Impact of Access to Inputs by the tribal tea farmers	34
4.3.8 Impact on Agencies contacted for Technical support by the Tribal Tea farmers.....	35
SECTION 5 DISCUSSIONS ON TRAINING PROGRAMME EFFECTIVENESS	35
SECTION 6 GENDER TRANSFORMATIONS.....	37
SECTION 7. SUGGESTIONS AND RECOMMENDATIONS	40
SECTION 8.CHALLENGES OF THE STUDY AND WAY FORWARD	43
SECTION 9 HUMAN INTEREST STORIES	44
SECTION 10 : TESTIMONIES BY KEY STAKEHOLDERS	45
ANNEX I – QUANTITATIVE QUESTIONNAIRE	46
ANNEX II – DISCUSSIONS WITH KEY STAKE HOLDERS	46

SECTION 2 INTRODUCTION (BACKGROUND)

The climatic conditions and soil are conducive for tea cultivation in Nilgiri hills. Tea board encourages small scale tea farming in the hills. Agencies like Tea Board support the small scale tea growers by providing technical and financial assistance. However the conditions of the small scale tribal tea farmers has not improved due to inadequate technical knowledge for cost effective tea production, lack of institutional support for financials and technical support, lack of mobilization of farming communities for collective bargaining power.

THE PROJECT

The **'Climate Change Adaptation for Resilient Small scale Tea Production' Project** is implemented by CARE India Solutions for Sustainable Development (CISSD) in collaboration with the UPS Foundation since February 2014. CISSD layered this project over an initiative called **'Livelihoods Improvement for Economic Security (LIFE)'** and complimented the on-going efforts in the project. CTRD trust through its Livelihoods improvement for economic security demonstrated that small scale tea producing growers in Gudalur, and hilly regions in general, could be made resilient through climate change adaptation. LIFE project developed a comprehensive network of 500 tribal tea farmers across 76 hamlets of Gudalur block, of Nilgiris districts in Tamil Nadu, India.

Broad objectives of the project:

- To enhance the knowledge and skills of at least 500 small and marginal tea farmers.
- To introduce improved soil and water management practices in order that the soil health and water availability for tea cultivation enhances to make tea cultivation more resilient to climate change aberrations. Farmers would adopt at least three best practices each in soil and water management.
- To introduce agronomic practices, pest, disease and nutrient management practices that help promote climate change adaptation. Farmers would adopt at least two best practices each in fertilizer, pest, disease and nutrient management.
- To strengthen mechanisms for enhanced access to inputs and services in order that the small and marginal tribal framers possess augmented coping capacities to overcome climate change risks.

Project Activities

Different activities were carried out as part of the project that includes community mobilizing, aggregating and realigning tribal farmers into groups (collectivization and institutionalization), facilitating and advocating with government line departments to leverage supports and services, capacity building and imparting skills through different technical training programs (35 in total covering five different topics) were organized, establishment of demo / model plots (18 plots) and developing IEC material on project activities. As part of the project, exposure visits (3 numbers), stakeholders meeting were organized to facilitate adoption of best practice learned through the training programs and projects. The evaluation study would help to understand the impact of the project at project participant's level and at community level.

SECTION 3 OBJECTIVES, SCOPE, APPROACH AND METHODOLOGY

OBJECTIVES

Main objective of the proposed study is to assess the overall impact of the CISSD projects implemented for the small scale tea producers in the Gudalur block of Nilgiris district over the last four year period.

GEOGRAPHICAL SCOPE

As specified in the Terms of Reference the study had covered 30percent of the impact population covered under the project for data collection. 150 tribal tea farming households out of 500 tea farmers and 33 hamlets out of 76 hamlets were covered.

APPROACH AND METHODOLOGY

Research Task I - Desk review of project reports, documents, IEC materials and in depth interview with project staff involved in project development and implementation.

The consultant had discussed with project official to assess the project development and implementation. The project documents, and log frame, outcome indicators designed for the project, selection criteria followed for selection of villages and farmers and type of baseline information collected during initiation of the project were collected. Information on communication strategy, IEC materials developed for the programme and information on monitoring and evaluation designed and M& E data / reports collected on various indicators to assess the performance.

Research Task II – Physical verification of farms for adoption of best practices using a check list and taking photographs.

Adoption of best practices in sampled tribal farmer households had been physically verified by the team of researchers during the structured interview. Lead researcher had verified four of the eighteen demonstration plots during the visit. A separate tool had been developed to capture information on physical verification of the best practices. Photographs had been taken to substantiate information captured during the process. For example (practices like vermicomposting pits, planting of silver oak trees, gap fillings, growing of one of the vegetable seed in the home garden, pruning of one fourth of the tea plant in the last five years, trenching practice) had been verified during this task.

Research Task III - In-Depth interview with key stakeholders like UPASI, Tea board members and other government line departments involved in the project.

In depth discussion with key stakeholders and government line departments involved in the project to assess their level of involvement in the project, awareness on the programme and objectives, progress made by the target population in adopting best practices, perception on the impact of the programme. Problems faced by the farmers in adopting best practices and recommendations for further improvement had been collected

Research Task IV - Structured Interview with the tribal farmer Household members who are members of VLG, received trainings, Participated in the programmes like demonstration plots, adopted best practices.

Structured discussion had been conducted with the tribal farmer household members who are part of the VLG and participated in the project activities. In-depth interviews with 150 selected farmers had been done. A group of experienced interviewers had conducted this discussion. Following Information had been collected from the farmers who have participated in the project activities

- Profile, socio-economic status
- Overall awareness on climate change adaptation project
- Reason for being part of the project ,
- Overall experience of being part of the project
- Level of knowledge and skills acquired.
- Adoption of best practices
- Support provided by the project unit for adopting best practices
- Benefits of best practices
- Financial outcome of best practice
- Environmental outcome of best practice
- Social outcome of best practice
- Overall experience of satisfaction in the project
- Challenges faced in implementing best practice
- Overcoming the challenges
- Recommendation for improvement

Research Task V - Focused group discussion with VLG male and female members separately to identify challenges faced in adopting the best practices

The researcher has conducted focus group discussion in four villages with village level group members (male and female members separately) each of the selected villages to understand about their VSHG activities and problems faced in the past

COVERAGE Done

Table 1- Coverage of respondents

Total no of villages	Random sampling from 33 out of 76 hamlets
Task 1 – In Depth Interview	CEO and Project staff of CTRD
Task 2 – Physical verification of farms for adoption of best practices using a check list and taking photographs	4 farms had been be verified by senior researcher.
Task 3 – In-Depth interview with key stakeholders like UPASI, Tea board members and other government line departments involved in the project	<ol style="list-style-type: none"> 1. Dr. Ramamurthy, , Head, KVK, Conoor, 2. Dr. Shanmugam, Subject matter Specialist, KVK,Conoor 3. Mrs. Vijay Lakshmi, (Subject matter specialist- Nutrition), KVK ,Conoor, 4.. Mr. Ambalavanan, IAS

	<p>Executive Director - Tea Board, Conoor, 5. Dr. Rajendran, Assistant Professor , Horticulture Research station, TNAU, Ooty 6. Dr. O.P. Khosla , Principal scientist and Head 7. Dr. Kannan, Senior Scientist Central Soil and Water Conservation 8. Research and Training Institute, Ooty were interviewed</p>
<p>Task4-Structured Interview with the tribal farmer household members who are members of VLG, received trainings, participated in the programmes like demonstration plots, adopted best practices Quantitative discussion</p>	<p>150 tribal farmer household members had been interviewed by team of researchers.</p>
<p>Task 5 -Focused group discussion with VLG male and female members separately to identify challenges faced in adopting the best practices</p>	<p>Two focused group discussion in each VLG one with male members and one with female members. Total 4 had been completed.</p>

Table 1; Sampling distribution in the target population

Details	No of farmers in Municipality	No of farmers in Town panchayat	Number of farmers residing in Village Panchayat	Number of Paniya Farmers	Number of Kurumba Farmers	Number of Kattunayaka farmers	Number of Male farmers	Number of female farmers
Actual number	86 (17.2%)	100 (20%)	314 (62.8%)	362 (72.4%)	74 (14.8%)	54 (10.8%)	340 (68%)	160 (32%)
Total number of Sample	9	41	100	107	26	13	93	59
percent of the sampled households	6	28	66	71	17	9	62	48

SECTION 4: FINDINGS

4.1 SOCIO ECONOMIC PROFILE OF THE BENEFICIARIES IN THE PROJECT

This project area has been confined to 76 hamlets spread across one town panchayats, one municipality and two village Panchayats of Gudalur block in Nilgiris district. It covers 500 farmers from Paniyas, Kattunayakas and Kurumba tribal groups. The below table provides an overview of the geographic coverage of the farmers in this project

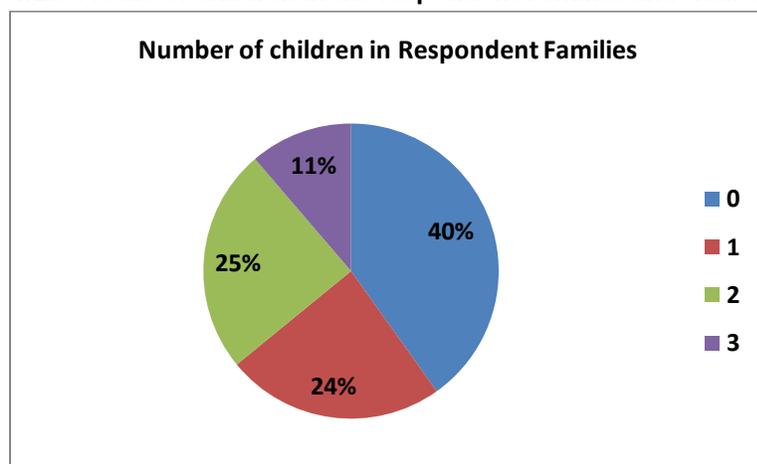
4.1.1 Distribution of respondents

67% of the respondents are spread across village panchayat .The remaining proportion of the respondents live in town panchayats and village panchayats .

4.1.2 Family Size of Respondents

30 % of the respondent families had two family members.

4.1.3 Profile of Children in the respondent Families and their education status



From the above chart it could be inferred that vast majority of the families did not have children. A quarter of the respondents had two children.

4.1.4 Respondents' Children and Affiliated Educational Institutions

Type of institution	Percentage of children in different educational institutions
Private School	4
Government School	46
Residential School	2
School completed / yet to join	48

Total	100
N	150

From the data it could be inferred that a negligible proportion of the respondents could afford to send their children to private schools .It may be due to their residence in urban areas and access to private schools.

4.1.5 Age of Respondents

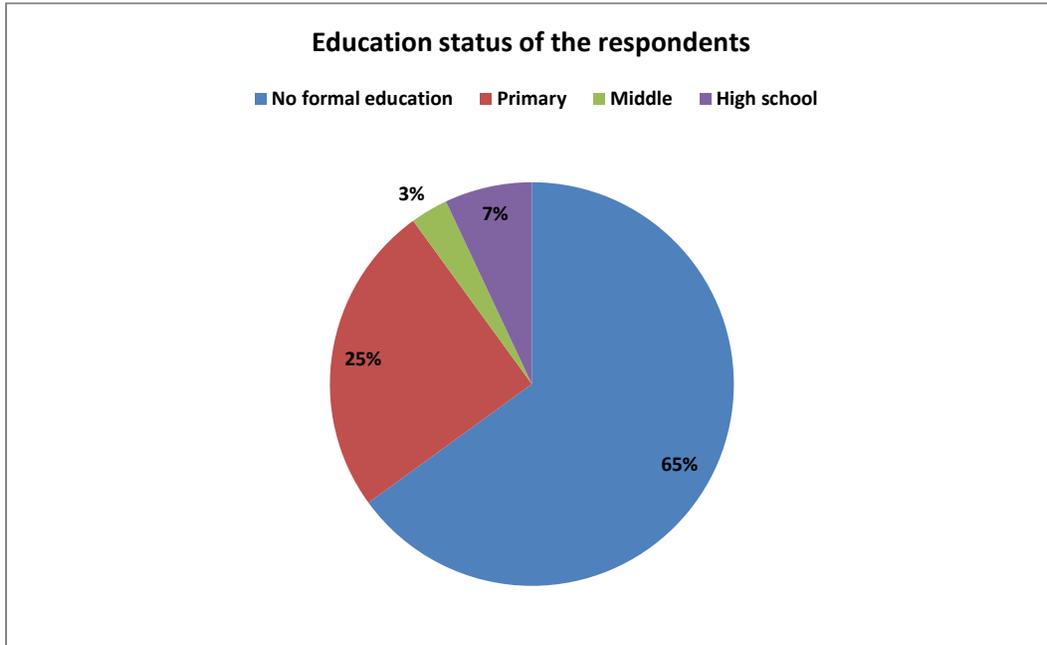
Age (in years)	Percentage of age of respondents
20-25	1
26-30	3
31-35	6
36-40	14
41-45	13
46-50	13
51-55	13
56-60	18
61-65	13
66-70	2
Total	100
N	150

From the above table it could be inferred that more than half of the respondents were above 50 years of age. This data could be used for the effective participation of this age group in trainings and adoption of practices.

4.1.6 Religion of Respondents

Majority of the respondents are Hindus. A small proportion belongs to Christians and Muslims

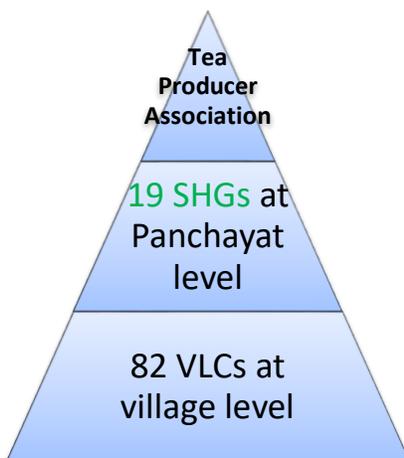
4.1.7 Education status of the Respondents



The above diagram clearly indicates that 65 percent of the respondents did not have formal education.

4.2 STRENGTHENING OF PEOPLES INSTITUTION:

CISSD aggregated the scattered tribal growers into groups at various levels. At village level, Village Level Committees (VLG) was formed. These VLGs had 10-15 members and had bank accounts. Further, beneficiaries are federated into village self-help groups (VSHGs), which have 45-50 members. These VSHGs also have bank accounts and are registered under Societies act of Tamil Nadu. At block level these VSHGs were federated into tea producer association. As VSHGs are registered societies audit and membership renewal needs to be done for the financial years. Totally 39 VLGs and nine VSHGs were formed and legally registered under the 'Societies Registration Act' of Tamil Nadu were supported with the renewal of their registration by the project team.



Due to their legal status, these VSHGs are now in a better position to access their entitlements, which in turn has resulted in increasing the confidence level of these institutions. These group members were provided with capacity building training on various skills like conducting group meetings, streamlining savings, accounting and book keeping, skills identification and nurturing, Gender and equality. All the nine VSHGs were renewed annually and strengthened towards self-reliability and sustainability. The

strengthening of Institutions is continuous process and will be implemented as an add-on component with all training programmes related to pruning & quality plucking, Soil & water management, vermin compost, Organic tea cultivation and Kitchen garden.

4.2.1 (A) Membership in Tea Board and VSHG

The data analysis confirms the membership of all the respondents in Tea board and VSHG.

4.2.1 (B) Respondents - Period of joining the Group

Year	Percentage of Respondents Year of joining the group
2011	73
2012	15
2010	6
2014	6
2013	0
Total	100
Number	150

The above table very clearly indicates that majority of the respondents have been affiliated to the group since 2011.

4.2.1 (c) Role of Respondents in the group/ society/ village

Particulars	Percentage of respondents in different roles in VLG/Society
Head	5
Member	87
Secretary	5
Others	3
Total	100
N	150

The above table depicts the role of the respondents in the VLG/VSHG/ this information could provide insights in the difference between involvement of leaders and members in the programme.

4.2.1 (D) Frequency of Group meetings

Frequency of Group meetings	Percentage of respondents attending group meetings
-----------------------------	--

Monthly once	66
Monthly twice	31
3 times in 15 days	3
Total	100
N	150

The above table clearly indicates that majority of the group meetings are conducted once in a month.

4.2. 1 (E) Persons Conducting the Meeting

Particulars	Persons conducting the group meetings according to the Respondents in percent
CTRD	84
VSHG staff	13
Don't know	3
Total	100
N	150

The table clearly indicates that the respondents depend on CTRD staff for conducting the meeting and are not empowered to organize and conduct the meeting on their own. As inferred from focus group discussion, the society / VSHG is not yet strengthened and mobilization of the members is difficult and active participation is limited to 30 percent of the members

4.2.1 (F) Time Period of Last meeting

The data very clearly indicates that the respondents had not attended the meeting in the month of Jan which informs that after the project completion in Dec 2014, the community could not manage its group activities on its own and conduct their monthly or weekly meetings

4.2.1 (G) Topics discussed in the meetings

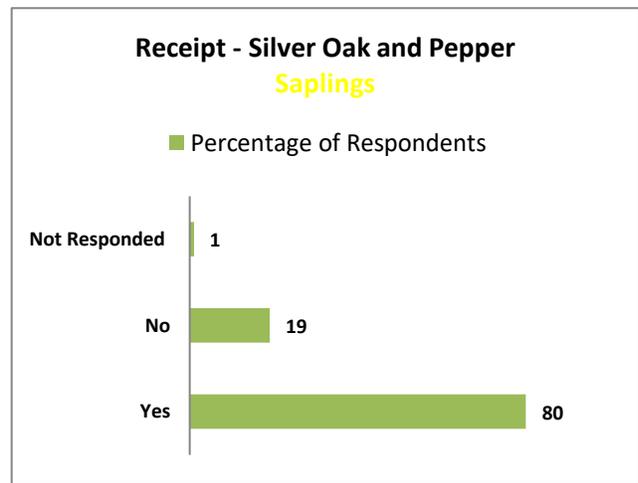
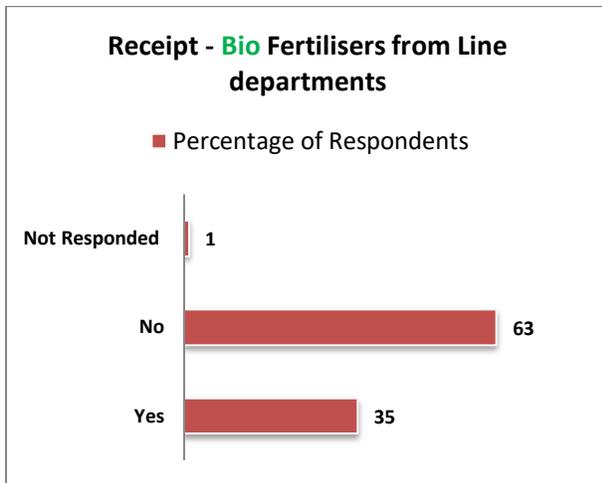
60 percentage of the respondents discussed about agriculture, child education , hygienic environment, common problem, building a house , community certificate, savings, price for tea, improving the income ,improving savings, accessing loans from government schemes , demo plot, adoption of new technology for tea cultivation, improving yield in tea cultivation, purchase fertilizer and tea sapling, improving coordination and cooperation in their society, about VSHG, VLG and Tea board Almost 22 percent of the respondents discussed about different ways to improve their group / society. From all the above information, it could be concluded that the handholding support provided by CTRD in terms of

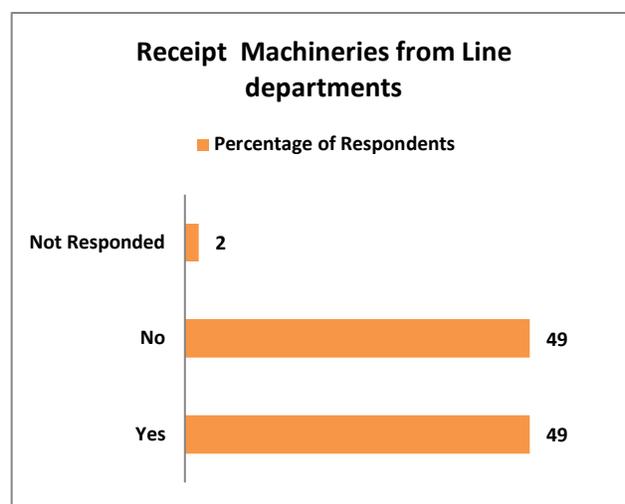
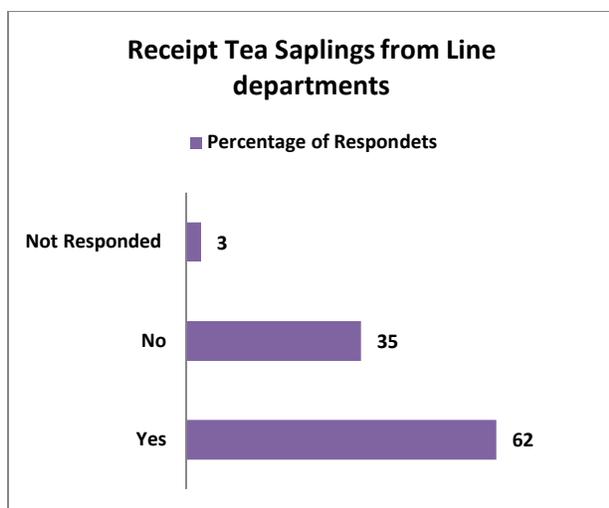
strengthening the groups by conducting the meetings periodically should be extended till the community takes ownership of the group activities

4.2.1 (H) Benefits accessed by the Respondents by Group membership. The benefits acquired by the group members in terms of their group membership and active participation in group meetings and activities would be discussed. Almost 70 percent of the respondents could relate to benefits ranging from access to agriculture schemes, chance for visiting Conoor, exposure visit, preparation of panchakavya, farming skill. Received loan, new seedlings, tea and pepper saplings and subsidy, developed external contacts, house, land survey, knowledge on kitchen garden, tea board registration, learnt about loan and savings, dolomite application, soil testing about Swami Nathan research foundation Only 15 percent of the respondents could relate their group activities to tea board related schemes like registration, land survey etc. This clearly tells that the fact the community could not relate themselves to affiliation with institutions like Tea board.

4.2.2 Receipt of Inputs through Project Activities

The below chart confirms the inputs received through the project activities as described in table 3,4& 5. 35percent of the respondents had received Bio fertilisers, 62percent of the respondents had received tea saplings, 80percent of the respondents had received pepper and silver oak saplings, 50percent of respondents had utilised services from machineries provided through project activities. The impact of these inputs would be discussed in the later part of the study.





4.3 TRAINING , LEARNING AND IMPACT AMONG THE BENEFICIARIES

4.3.0 (a) Details of training provided through the Project

Sl.no.	Type of Training	No. of Training	Benefiting Households (Direct)	Total number of Households benefitted
1	Pruning & quality plucking	9	30	(279)
2	Soil & water management	9	30	270
3	Vermi compost	7	30	(211)
4	Organic tea cultivation	5	30	(143)
5	Kitchen garden	5	30	(147)

4.3.0(b) .Respondents Participation inProject Training

It has been identified during the study that almost all respondents had participated in at least one training organised by CTRD/ CISSD

4.3.1 Soil and Water Management Practices

4.3.1 (a) Respondents status of Soil Testing

Status of Soil Testing	Percentage of Respondents who did Soil Testing Before four years	Percentage of Respondents who did Soil Testing in the current period
Yes	11	60
No	87	25
Total	100	100
N	150	150

The above table clearly indicates that no of respondents who have done soil testing has increased from 11percent to 60percent . It is noteworthy that 50 percent of the respondents have taken initiative to test their soil and understand the current status of their soil .

4.3.1(b) Learning Experience from Soil and Water management trainings

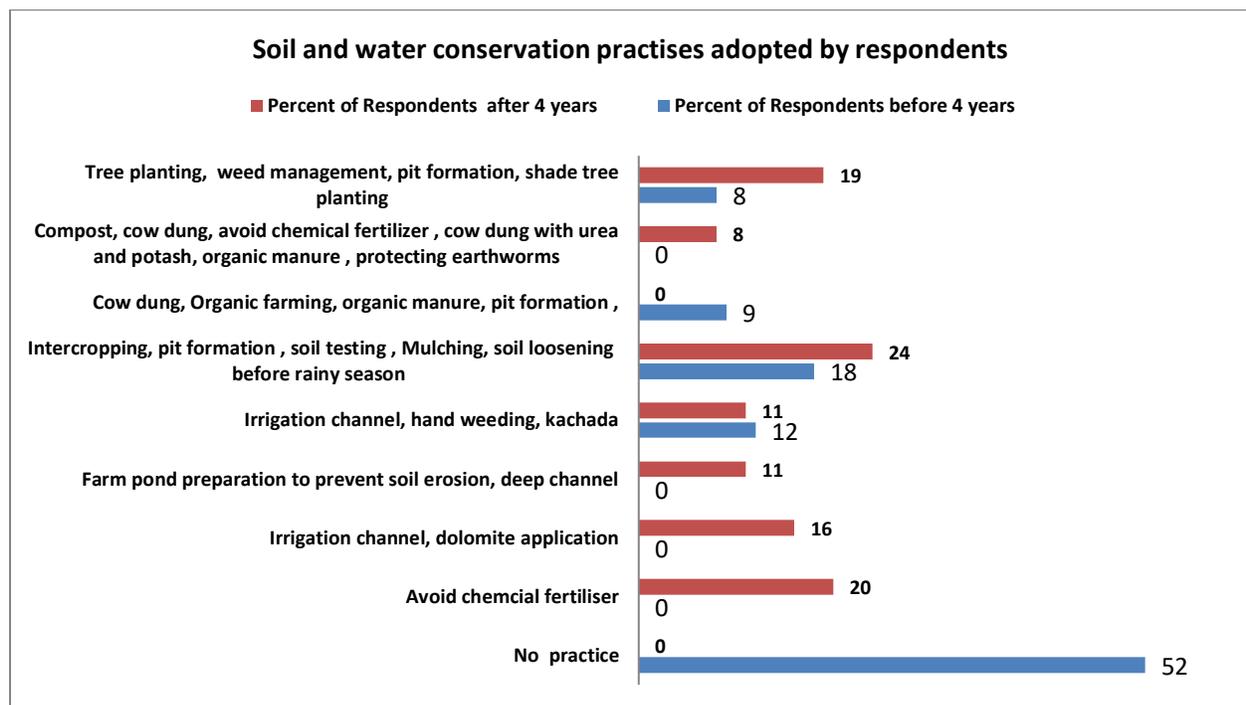
Seven soil and water management trainings had been organised by the project at different villages namely Elamanna, Koovamoola, Karakapalli, Pothakolli, Nellimadu. The Resource persons were mainly from central soil water research institute Ooty . Most of them were scientists. The training methodology was mostly lecture with demonstration at few places . almost all the trainings had covered similar topics like importance of soil and water conservation, drought management practises, methods and procedures to conserve soil like making irrigation channels , application of micro nutrient , use of bio fertiliser, application of dolomite pruning practises , importance of soil testing . One or two of the above topics may not be covered in each of these sessions. The demonstration of application of panchakvya, planting pepper, half mound channel in pepper and soil testing has been done in few places

Participation in Soil water management training and techniques learned	Percentage of Respondents who shared their learning's from Training programme
Irrigation (semi-circle) channel	18
Conservation of water and soil	14
Shade tree planting	10
Mulching to prevent soil erosion	10
Soil test,	9
Organic farming	8

Know about soil nutrients	5
Dolomite application	4
Tree planting and pit preparation, Triangular planting , urea and potash spraying	3
More than two of the above topics	10
Not participated	9
Total	100
N	150

It is good to note that almost all of the respondents had attended the training on soil and water management. When asked about their learning experience from this training, 14 percentages of the respondents replied that they have learnt semi-circle irrigation channels would conserve water. On further data analysis it was revealed that 50percent of those respondents who learnt semicircle irrigation channel have received formal education at least for two years. Also respondents who have replied that they have learnt at least two of the above topics also had some level of formal education. Almost all the respondents who did not participate in the training programme did not have formal education and most of them were above 40 years. The participants who learnt about the importance of soil testing had good level of formal education

4.3.1 (c) Soil Management practises followed by Respondent before 4 Years and after 4 years



From the a chart it is very clear that half of the respondents did not adopt any practise to conserve their soil. Very few respondents were involved in making irrigation channels, intercropping, soiltesting and shade tree planting practises . On further analysis about these 50percent respondnets, it was identified that ¾ th of these respondents did not have formal educations and must have limited their exposure to technical aspects of soil management .

The above list of practices adopted by the participants for soil and management clearly indicates that the participants had gained good level of technical knowledge in the last four years. The trainings provided to the farmers have resulted in improving their scientific knowledge regarding soil and water management. On further data analysis, it was identified that majority of the respondents who did not attend this training programme limited themselves to use of only organic manure or cow dung for soil management or did not follow any of the practices. This brings out the fact that the training programme has added value to the existing traditional knowledge of the tea cultivators.

Majority of the farmers understood that they should avoid chemical fertilizers to conserve soil followed by farm pond preparation, intercropping, mulching and shade planting practices

4.3.1(d) Water Management Practices

Before 4 Years

Practices adopted by Respondents	Percent Of Respondents
Irrigation channel	55
Loosening of soil, Kachada Spraying	19
Artificial water pit using plastic, water pit/pit preparation	10
Farm pond	4
Shade tree planting silver oak planting , casuarina /jack tree planting	8
FYM, Mulching	4
Total	100
Number	77

From the above table it is evident that 49 percent of the respondents did not adopt any practice for water management. On further data analysis it was identified a vast majority of this group of respondents did not have formal education and did not have exposure on water management practices.

It could be noted that quarter of the respondents had adopted irrigation channels and loosening of soil for efficient water conservation. 10 percentages of the respondents had awareness about new and latest water management technologies like drip irrigation, artificial water pit preparation and making farm ponds. These respondents had some level of formal education and are exposed to these technologies. From Focused group discussion conducted with the project staff and participants, respondents who had knowledge, interest in various activities, involvement in project activities were selected for these trainings

4.3.1(e) Current Water management practices followed by Respondents

Practices adopted by Respondents	Percent of respondents Adopting different practices
Irrigation channel along with mulching , Tree planting, Intercropping, Gap filling	76
Shade tree planting, shade for irrigation channel, Mulching,	11
Semi-circle channel	5
Water Pit(Trenching), Avoid Evaporation , Soil Erosion, Water Saving, Earthing Up, Spraying of Urea and Potash	8
Percentage	100
N	138

It is quite interesting to note that (46/70) of the respondents who have made irrigation channels in their tea farms have attended soil and water management Training and had learned the practice from the training. Before four years these 50 percent respondents did not adopt any water management practice. Hence it is very clear that the training has proved to be very effective for these illiterate farmers. In the same tea farmers who have adopted half-moon circle), mulching, water pit, intercropping has also learned this practice through the trainings. They did not have awareness about these practices before four years.

4.3.1(f) Application of Dolomite

Status of Dolomite application	Percent of Respondents applied dolomite before 4 years	Percent of Respondents applied dolomite in the current year
No application	97	57
Application of Dolomite	3	41
Total	100	100
N	150	150

The above two tables reveal the fact that application of dolomite has increased from 3 percentage to 41percent in the last four years .During the project period dolomite has been supplied to 119 farmers (

23.8percent) of the target population . The supply of dolomite by the project coupled with soil and water management training has helped them to implement dolomite application in the farms.

Need for dolomite application

Application of dolomitic lime is recommended for maintaining the soil PH level between 4.5 to 5.5 and for better growth and yield in Tea.

4.3.2 Training on Organic Tea Cultivation

Organic Tea cultivation Training was provided to 150 tribal tea farmers in 5 batches of 30 each. Resource person from Horticulture Research Station (HRS)/ Tamil Nadu Agriculture University (TNAU) - Ooty supported these trainings. Total participants of these trainings was 143 out which 62 males and 81 females. Some of the topics covered during the training programme were organic procedures to initiates bud in tea plants, to avoid blister blight in tea plants , application of organic manure , silver tip cultivation, aggregation of producer group to get certification and market organic tea , loans and subsidies that could be availed from state government departments for organic tea cultivation , effects of chemical fertilizers and preparation of organic manure, demonstration of panchakavya preparation at almost all places, green tea preparation , demonstration of making irrigation channels, half mound , application of panchakavya .After this training, the tribal farmers prepared Panchakavya in 5 villages and sprayed Panchakavya in tea and pepper plants. In the 5 villages, 18 farmers including (11 males and 7 females) sprayed panchakavya in their tea land

4.3.2(a) Learning Experience from Training

Learning experience from Organic tea cultivation	Percentage of respondents
About Panchakavya – Awareness , preparation ,application and usage	85
Organic farming, organic tea, organic manure, good quality seeds, certification for organic, marketing	10
Vermicomposting preparation, FYM manure application, disease control	5
Total	100
Number	87

58 percent of the respondents had attended this training. It is quite good that almost all of the trainees understood about panchakavya and its importance. A small proportion could recall about organic tea, certification requirements and marketing for organic tea and vermicompost and farm yard manure. This small proportion of respondents holds leadership positions in the society. Most of the leaders could recall about Panchakavya preparation.

4.3.2(b) Demonstration of Vermi Compost.

7 units of vermin compost were constructed as models in demonstration plots. 7 demonstration trainings were provided to the tribal farmers. On a total 211 farmers (96 males and 115 females) participated in the training. The resource persons for these training programmes were from State horticulture department. And Swami Nathan research foundation. Resource persons from state agriculture department demonstrated about selection of land for vermicompost preparation need for shade and water facility. Measurement for tank, method of mixing cow dung and preparing vermicompost .Resource persons from Dr. MS.Swaminathan research foundation, Kerala demonstrated that about the prerequisites for construction of tank for vermicompost preparation, collection of vermiwash, varieties of earth worms, formation of layers , process, marketing of compost, minimum requirement of earth worms, cost of inputs, rate quality and quantity, measurements to be followed, precautions to protect the tank against infection by animals and birds etc.

More than half of the respondents had attended vermicompost training conducted by the project 71percent of the respondents who had attended the training had learnt about the vermicompost. Small proportion of respondents had learnt about benefits, cost reductions, inputs required for vermi compost. However some of them could not practice as they did not own a cow for preparing the organic manure.

Topics Learnt	Percentage of Respondents
Vermi compost preparation	71
Knowledge on inputs for vermi compost preparation	7
Usage of vermi compost	3
Benefits of vermi compost	7
Low cost , high yield by vermi compost	9
Vermi compost as organic manure / mulching	3
Total	100
N	89

4.3.2 (c) Panchakavya (Before Four Years) and after four years

It should be noted that none of the respondents had awareness about Panchkavya before four years
Panchakavya Application after 4 years

Practices	Percent of Respondents who applied Panchakavya after four years
Applied	75
Training only	7
Didn't spray/ did not get	7
Dung, Milk, Ghee (Panchkavya preparation)	3
Knowledge on Panchakavya about controlling yellowing disease, soil and water conservation, planning to spray, apply	8
Total	100
Number	87

From the above tables it is revealed that application of panchakavya has increased drastically from nil percentage to 75 percentages in the last four years. Three fourth of the respondents who had attended the organic tea cultivation training organized by CTRD/ CISSDCISSD had applied panchakavya. 50 percent of the population who had applied panchakavya in the field did not have formal education. This implies the fact the demonstration of preparation of panchakavya has reached even the illiterate people and they have adopted the technology in the field. A small proportion of the participants could only understand about the preparation of panchakavya, ingredients used for preparation and uses of panchakavya. Almost 40 percent of the respondents did not provide any response regarding Panchakavya application. This may be due to the fact they have not attended the training and did not have knowledge about Panchakavya .Hence this information help us to conclude that the training provided to the participants have proved to be effective in transfer of technology.

4.3.2(d) Application of Organic Manure

In the past only 12percent of the respondents had been applying organic manure in the form of cow dung, goat manure, farmyard manure.30 percent of the respondents had started application of organic manure in the current period. However in the current scenario 34 of the respondents had started applying organic manure prepared in pits, along with urea and potash, cow dung, goat manure. Half of the respondents who have started applying organic manure have also increased the frequency of application to one time in a year during the past to twice or thrice in a year. However a small proportion of participants did not apply although they knew about organic manure. These respondents expressed

that they do not manage cattle at home. Hence their organic manure usage is limited this learning's has been achieved from trainings like organic tea cultivation training, participation in demonstration of panchakavya and vermicompost preparations.

Application of Organic manure before 4 years	Percent Of Respondents	Application of Organic Manure in the current period	Percent of Respondents
If cow available/ cow dung	50	3 times in a year /Once in 6 months/ one year/ 2 years	55
Goat manure	28	Cow dung/ organic manure / pit preparation/ apply with urea and potash/ available / goat manure	34
Once in a year/ two years	17	No cow / did not apply	11
Banana Ginger turmeric	5	Total	100
Total	100	N	44
N	18		

4.3.3 Training on Pruning and Quality Leaf Plucking

The technical training on Pruning and quality leaf plucking was provided to nine tribal tea farming society members to enhance their knowledge and skills to increase the quality and quantity of tea production. This pruning training included demonstration by using the pruning machine. The resource people were from UPASI- KVK- Conoor and Tea Board of India- Gudalur. The topics covered were method of pruning, different kinds of pruning like top, basal pruning, time for application of fertilizer and pruning, appropriate months for pruning, time interval for pruning, protective measures to be followed using machines for pruning Plucking of tea, Silver tip (Tea bud) the best method is hand picking, best time interval in a month for plucking tea, (minimum three times) and effects of machine plucking. One trainings was organized for each society covering all 9 societies and 279 tea farmers which included 118 males and 161 females. Impact of the Pruning and Quality Tea Production Training was that 40 farmers (29 Males and 11 Females) practiced pruning in their tea farms after attending the pruning training and they also started quality tea leaf plucking

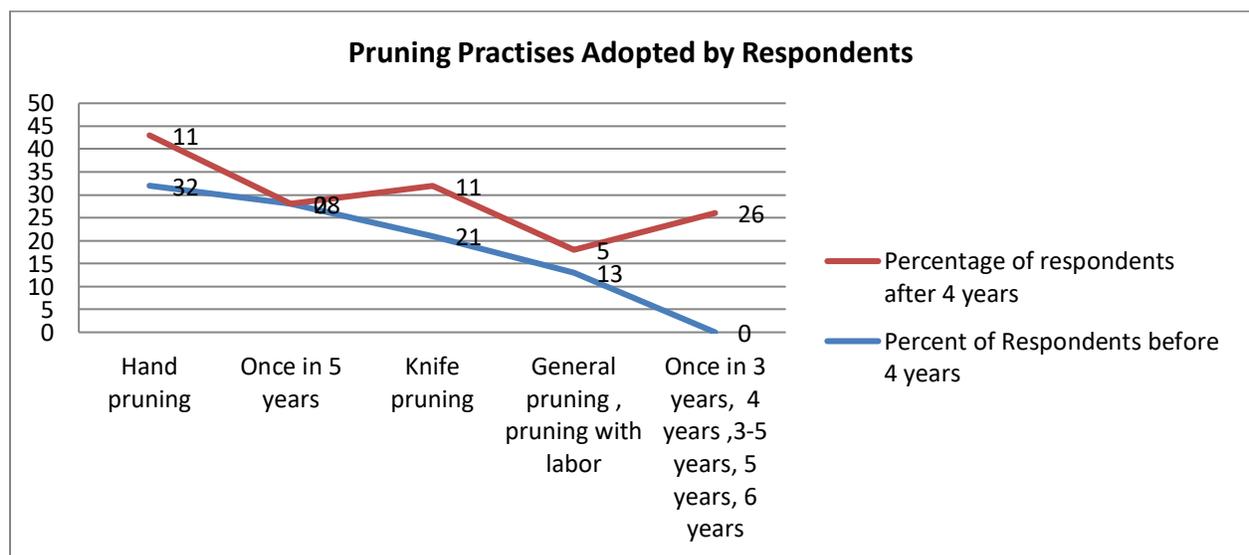
4.3.3(a) Learning Experience from Training

Learning's from the Training	Percentage of respondents
Triangular planting , close planting, planting method, planting new seedling, planting system, planting of tea , maintenance of seedlings	20
Application of micronutrients at drought, after pruning,	5
Cultivation of tea , scientific cultivation, seasonal cultivation, higher yield ,	21

maintenance of field , spraying chemicals after picking, harvesting and manuring,, intercrop, nutrient management, irrigation channel	
Disease and drought management	3
Quality of tea – benefits of quality tea production, high price for good quality tea nutrient content of tea	12
Organic manure , organic farming and climate change	8
Pruning practices – how to prune, once in 3 years pruning, once in 4 years, pruning and fertilizer application, pruning & micro nutrient application, pruning & picking	14
Silver tea, green tea, organic tea	2
Picking methods – 2 leaf 1 bud picking , use fertilizer after picking, hand picking, picking once in 10 days, quality leaf picking, picking once in 15 days,	15
Total	100
N	130

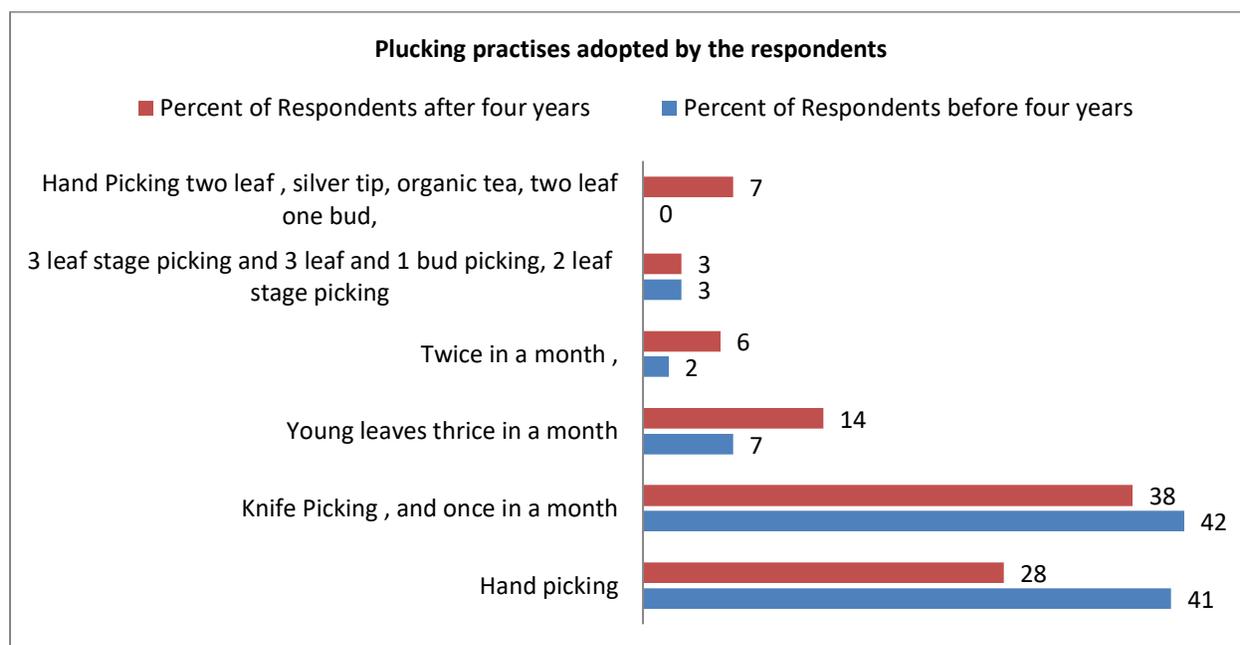
From the above table it is very clear that majority of the respondents have learnt about the different planting methods. On further data analysis it was revealed that 80 percent of the respondents who learnt different planting methods; pruning techniques from the trainings were illiterate farmers and mostly above 50 years of age. However it was quite interesting to note that 80 percent of the farmers who learnt about the quality of tea and different picking methods were within 40 years and mostly had some level of formal education. From these observations we could make decisions regarding selecting right people for training technical aspects for other members and marketing activities for the society in the long run.

4.3.3(b) Impact of Training on Pruning practices



From the above table it is very clear that one fourth of the respondents were practicing hand pruning followed by knife pruning. The respondents used to practice pruning once in 5 years. In the current scenario, it could be noticed that 16 percent of the respondents had opted for machine pruning from hand and knife pruning after the training program. And small proportions of them are indulged in hand pruning. They have changed their mindset from doing pruning once in 5 years to 3 years after the training program. Also this change is possible with 3 pruning machines provided by the project to support the societies. This implies the fact that training and support in the form of inputs could help the farmers adhere to new practices.

4.3.3(c) Impact of Training on Plucking of Tea



From the table it could be inferred that the percentage of respondents engaged in knife picking has reduced from 37 percent before 4 years to 18 percent in the current period. Almost half of knife pickers had changed after attending the training program. It could be noted that almost 14 percent of the respondents have opted for young mother leaf picking. Also the no of respondents who changed their picking twice in a month has increased from 2percent to 6percent. The number of silvertip tea cultivators also has increased from 1 percent to 7. All the above information implies the fact the training provided to the respondents has brought gradual change among the respondents

4.3.3(d) Impact of Training on Weed Management Practices

Practices adopted by Participants	Percent of Respondents before 4 years	Percent of Respondents after 4 years
Hand weeding	4	2

Weeding using implements	58	43
Weeding chemical application	7	1
Inter cultivation operations like mulching gap filling , intercropping , triangular planting	7	31
Hand and chemical weeding	3	3
Kachada spraying	6	7
Combination of hand, implements and chemicals	8	8
No response / Not relevant	4	3
Total	100	100
N	150	150

Before 4 years, the respondents were predominantly practicing weed management with use of implements like hand, spade, knife and chemicals. They were not aware of inter cultivation practices like intercropping, gap filling, mulching. In current year it could be noted application of chemicals for weed management has drastically reduced from 7 percent to 1 percent. These 6 percent framers have shifted from chemical weed management to intercropping, gap filling mulching and other mechanical way of removing weeds. This displays a positive change among the attitude of the farmers. Almost 32 percent of the respondents had switched to scientific weed management practices like intercultural operations, mulching, intercropping, gap filling, close and triangular planting methods. Intercropping is very well understood by farmers who had some level of formal education. Gap filling, triangular planting close planting is adopted by farmers who did not have formal education. Kachada spraying is also adopted mostly by Illiterate farmers in the current period.

4.3.4 Impact of Kitchen Garden Training

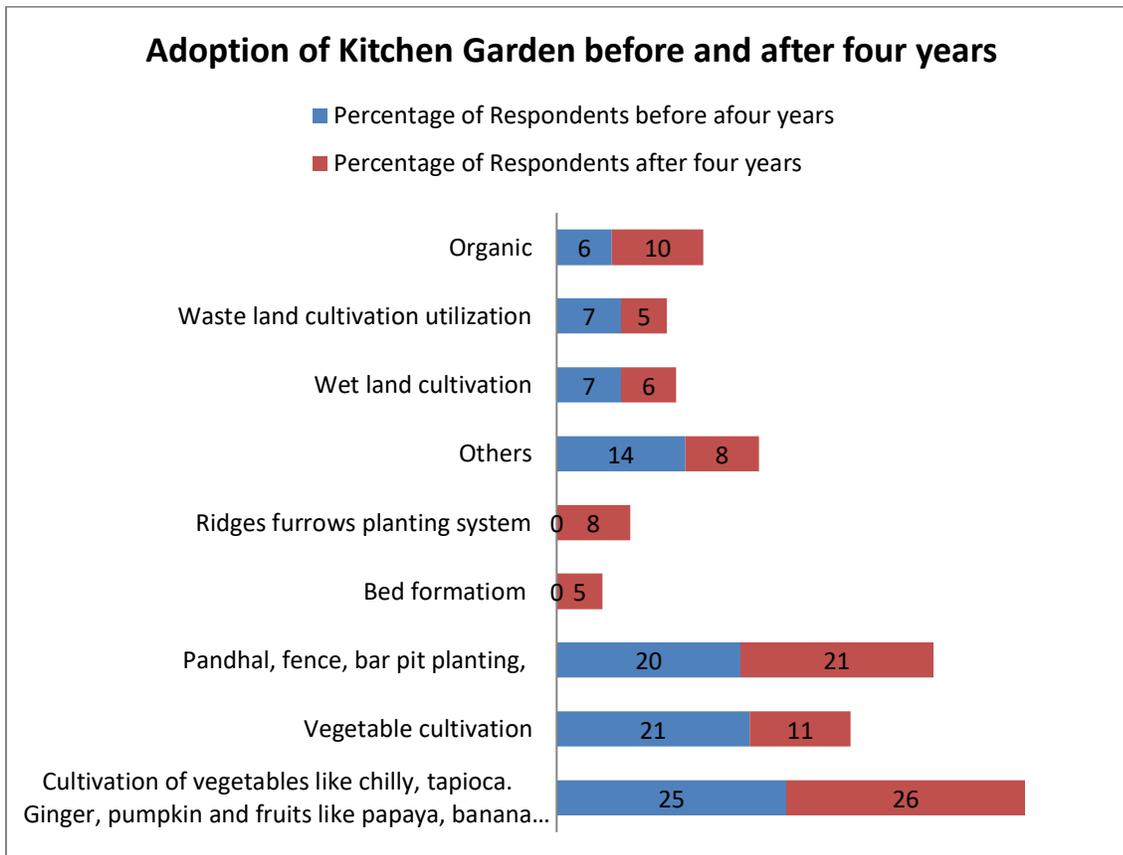
The aim of the Demonstration of Kitchen Garden is to improve the health condition of women and children among the Tribal community. The income level is very low due to seasonal job and low productivity of tea farms community. As per the proposal five batches of kitchen garden trainings were conducted and 7 varieties of vegetable seeds were provided to each participant. Total participants of these 5 batches was 147 out which 56 males and 91 females. The resource persons were from KVK , agriculture department and health department .The specific topic covered during the training programme were importance of kitchen garden, use of leafy vegetables , importance of balanced diet and nutritive value of vegetables, seed treatment for vegetable seeds, spacing to be followed for vegetables, deep pit planting and bed preparation and planting methods. Demonstration for planting beetroots, bitter guard, beans and tomato were demonstrated. The resource person from health department has spoken about personal hygiene, ante natal care, diabetes care during these trainings. All the trainings had been conducted in a lecture and demonstration methods

4.3.4 (a) Respondents learning experience from Kitchen Garden Training

From the sample taken for study from the target population , 52 percent of the respondents had attended the training and 48 percent had not attended the demonstration training .Majority of the participants had learnt about kitchen garden and nutritive value of vegetables .

Topics	Percentage of Respondents
About nutritive value of vegetables	49
Kitchen garden	28
Vermi compost	4
O organic farming not relevant answers importance of kitchen garden, no need to go to market	19
Total	100
N	52

4.3.4(b) Adoption of Kitchen garden before four years and during the current period.

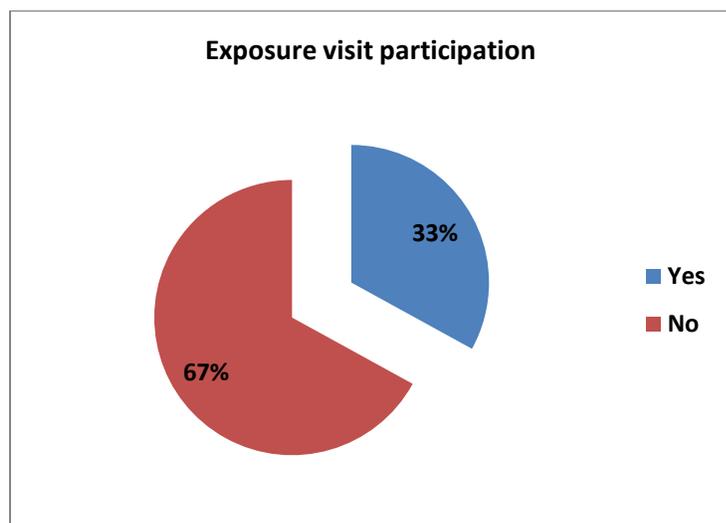


From the above table it is very clear that most of the respondents who have attended demonstrations on Kitchen garden have adopted the above mentioned practices in their kitchen garden. It is quite

interesting to note that those participants who have said that they understood the nutritive value of vegetables have set up Kitchen garden in the farms and some of them have planted leafy vegetables and beans variety in those gardens. The sample populations who have not attended the training have not set up kitchen garden and have cited many reasons like lack of seed, water availability and other resources as reasons for not setting up Kitchen garden. Also it should be noted that most of the participants have learnt that planting systems or designs from Kitchen garden demonstrations like bed formations, fencing and bar planting in those training programs

4.3.5 Exposure Visits:

The aim of the Exposure visit was to improve their tea cultivation practices. The respondents were taken to Central Soil and Water Conservation Research and training institute (CSWCRTI), Ooty, Dr. M.S. Swami Nathan Research Foundation, Kalpetta (Kerala), UPASI-KVK, Conoor and HRS/ TNAU, Ooty. Three batches of tribal farmers had been taken to these places during the project period. Total participants 91 out which 48 males and 43 females. The exposure visit helped the participations to learn more details about tea cultivation, Vermi Compost making, Green tea processing, Silver tips making, Handmade tea preparation, agronomic practices in tea cultivation, mushroom cultivation, soil and water management in tea cultivation, Livelihood activities, Income Generation activities of Self Help Group, kitchen garden, medicinal plants cultivation etc.



From the sample of 150 respondents taken for study, almost 70 percent of the respondents have taken part in the exposure visit.

4.3.5(a) Learning experience from Exposure visit

When asked the respondents about their learning's from the exposure visit, unfortunately 74 percent of the respondents did not responded to the query. Remaining participants have listed as the key learning's from the exposure visit

1. Agriculture new technology/crop production techniques intercropping, laying out irrigation channels, crop rotation, planting in slope land, tea cultivation, pruning.
2. Green tea planting method and machinery Drought management in Tea, silver tip , factory visit , Green tea and handmade tea production
3. Kitchen garden and Mushroom cultivation Preparation of vermicomposting
4. Prevention of soil erosion, soil and water conservation

From the above table , it could be noted that although 67 percent of the respondents had participated in the exposure visit, only 26 percent of the respondents had listed the above learning's .Almost half of the participants learning's are confined to different new practices in tea cultivation .One fourth of them learnt about green tea production , handmade tea production . A small percentage of them learnt about soil conservation, vermi compost preparation, green tea production, kitchen garden and mushroom cultivation. Remaining 60percent of the exposure visit participants did not respond to their learning's from the exposure visit

Adoption of technology I	Percentage of Respondents	Adoption of technology II	Percentage of Respondents	Adoption of technology III	Percentage of Respondents
Crop production, crop planted, application of fertilizers , Intercropping	13	About machinery	11	chemical spraying	11
Fodder	4	Embroidery	11	dolomite application	11
Green tea planting	4	Green tea	14	Gardening	11
Herbal garden, vermicompost	4	Irrigation channel	14	Herbal plants	11
Tea production, pruning irrigation channel, mulching, pruning. Vermicompost , weed management	29			intercropping	11
learned about silver tip	4	Mulching	14	Mulching	11
Preparation of tea powder	4	Preparation of tea powder	11	Rose Cultivation	11

Rose garden, Mushroom cultivation, mulching	8	soil testing	11	Tea cultivation	11
Silver oak	4	tea board registration	14	Vegetable cultivation	11
Soil test, water and soil protection	4	Total	100	Total	100
Vegetable cultivation. Vermicompost. Kitchen garden	18	N	14	N	9
Works of tea board	4				
Total	100				
N	38				

It could be revealed from the above table that only one third of the participants who had participated in the exposure visit had adopted some learning's from the exposure visit in their farms. Majority of them adopted vermicompost preparation, kitchen garden and vegetable cultivation, mulching, pruning and irrigation channel formation from the exposure visit.

4.3.6 Stakeholder Level Meeting

The stakeholder meet was organized to create awareness about the different e- line departments of TEA Board, Central Soil & Water Conservation Research and Training Institute (CSWCRTI), Horticulture Research Station, UPASI- KVK, HADP, NABARD, Banks and their schemes related to tribal farmers among the target population. Two meeting were conducted in Gudalur These two meeting helped in strengthening the relationship between the farmers and other stakeholders.

4.3.6(a) Sample Respondents Participation in Stakeholders meetings

It is good note that 85percent of the respondents had participated in the Stakeholders meeting conducted during the project period

4.3.6(b) Benefits of Attending the Meeting

Benefits of attending the meeting	Percentage of Respondents
-----------------------------------	---------------------------

Know about Govt. Scheme, New contacts, New technology for tea cultivation	57
New technology for tea cultivation	33
Got new contacts	9
Chance for stage participation	1
Total	100
N	128

Almost one third of the participants who had attended the training learnt about government schemes. 15 percentages of the participants learnt about new technologies. Another one third of respondents were able to gather new contacts, learn about schemes and new technology in tea cultivation. So it could be concluded that stakeholder consultation proved to be very effective for the participants in creating linkages for tea production and accessing various welfare schemes promoted through government programmes.

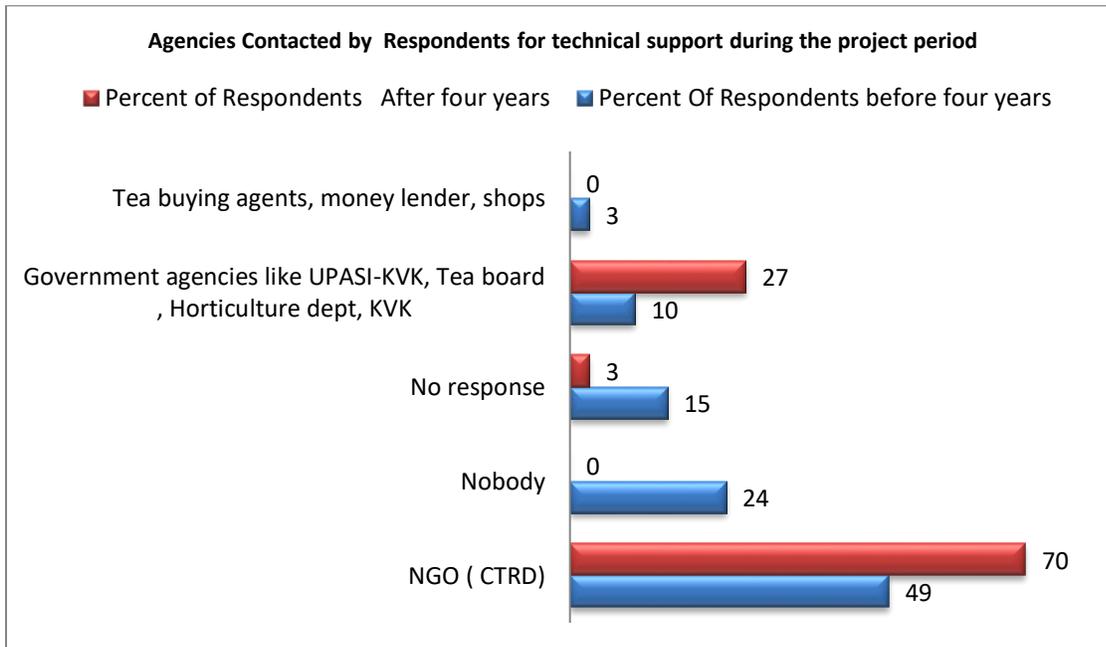
4.3.7 Impact of Access to Inputs by the tribal tea farmers

Agencies contacted by Respondents before 4 years for Input support	Percent of Respondents before four years	Percent of Respondents after four years
Private Input dealers like pesticide and seed sellers. Agents who buy tea leaves	31	9
CTRD	28	66
GOVT Agencies like UPASI	9	8
No response	17	11
No Purchase, Panchakavya application. No crop, knife and hand usage for weeding, free inputs	15	6
Total	100	100
N	150	150

It is very clear from the above table, that institution building efforts put forth by the project has yielded good results. The dependency of the farmers with private agencies has reduced from 31 percent to 6 percent. A vast majority of the respondents depend on CTRD and CISSD for their input support. This indicates that the VSHG has not been strengthened yet or do not have the capacity to provide input support for its members.

4.3.8 Impact on Agencies contacted for Technical support by the Tribal Tea farmers

Before 4 years, majority of the respondents used to depend only on CTRD for technical advice. It is interesting to see that the transition from NGO advice to linkage with different government agencies in the last four years. Exposure visits to different agencies, participation in stakeholder consultations and various training programmes might have facilitated this transition among these respondents. However, majority of the respondents could not differentiate between CISSD, CTRD and government agencies. On the first hand the respondents trust CTRD and CISSD and later depend on government agencies



SECTION 5 DISCUSSIONS ON TRAINING PROGRAMME EFFECTIVENESS

Andragogy is the art and science of helping adults learns; the term defines an alternative to pedagogy and refers to learner-focused education for people of all ages. Adult Education' as an intervention into the ordinary business of life; an intervention whose immediate goal is change in knowledge or in competence. As understood from the above definition, the target population comprising mostly illiterate tribal tea farmers need to be intervened in the way to bring a change in their knowledge and competence. The key principles to be followed in training adults includes

- Involves simulations through team learning, case studies, role playing etc.
- Requires the interpretation, practice, adaptation, and integration into the (interests of) the trainees involved
- It provides an opportunity for experiential learning such as creative thinking, improvisation in courses etc.

Training participants

A detailed data analysis revealed that 31 percent of the sampled respondents had attended the four trainings provided on topics like soil and water management, organic tea cultivation, vermicompost preparation and kitchen garden .25 percent of the sampled respondents had attended three of the above trainings.26 percent of the sampled respondents have attended two trainings and 18 percent of the respondents had attended one training .One percent of the respondents had not attended any of the above trainings.

Demonstration Plots

Four of the demonstration plots had been visited by the lead researcher. The demonstration plots had followed practices like pruning with financial support of the project, gap filling with saplings supplied through the project, irrigation channels had been made and half mound channels had been made for pepper saplings, silver oak saplings had been planted for shade, application of dolomite and bio fertilizer could be seen, vermin compost pits had been constructed in all these places and practiced by the beneficiaries. They have taken active part in the trainings organized at all places and in their own farms. The impact of all these practices could not be assessed during the visit as it is very early to assess the results as the inputs were supplied in the last three to six months period. The visible impact is the increased knowledge level among these farmers maintaining demonstration plants

Effectiveness of the training

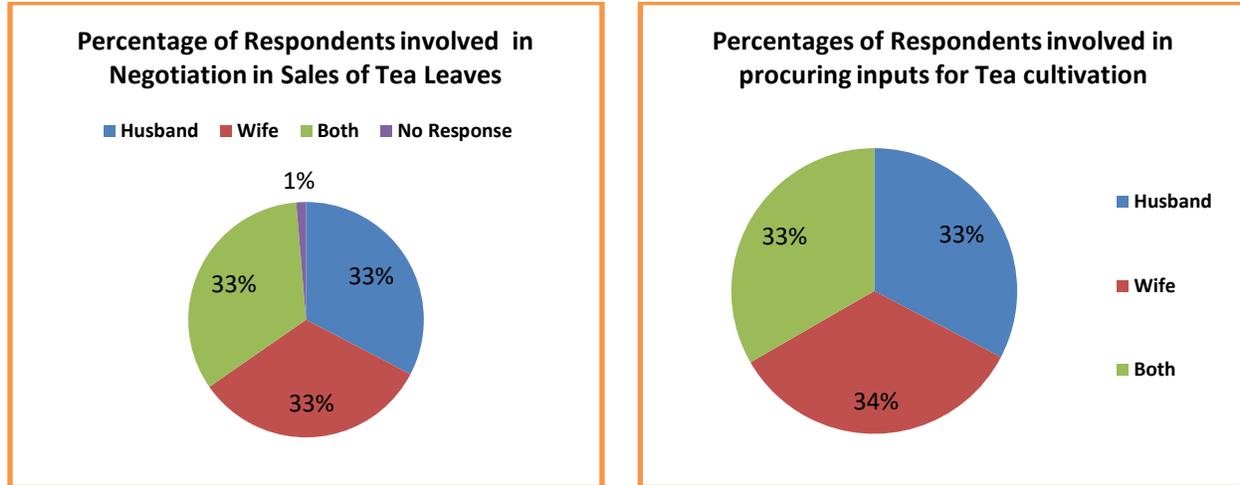
Although the project has been designed to build the capacity of the farmers, it has not formulated specific training modules for each selected topics and used adult trainers¹ for training the tribal farmers. As mentioned at the beginning of this section, adults could not be trained in lecture method or one way communication. Most of the trainings had been handled by scientists and designated officials at much higher posts .***The delivery of trainings had been in an instructional mode and do not have scope for involving the participants as active learners. Case studies, games and interactive sessions had not been designed for this project. Tribal farmers coupled with illiteracy would already distance them from the higher officials in terms of the power relations exhibited between the two elements.*** This is quite evident from the fact that demonstrations on half-moon Trenches, Panchakavya and vermicompost had reached most of the participants. This reveals the facts active learning should be facilitated among the adult learner like the tribal farmers.

Discussion with project staff and document review revealed that considerable amount of resources had been spent in leveraging various support services for the target population. However the delivery of training should have been done with the support of adult trainers with set of modules developed for their situation.

¹ Adult trainers - Adult Education' as an intervention into the ordinary business of life; an intervention whose immediate goal is change in knowledge or in competence. An adult educator is one, essentially, who is skilled at making such intervention.

SECTION 6 GENDER TRANSFORMATIONS

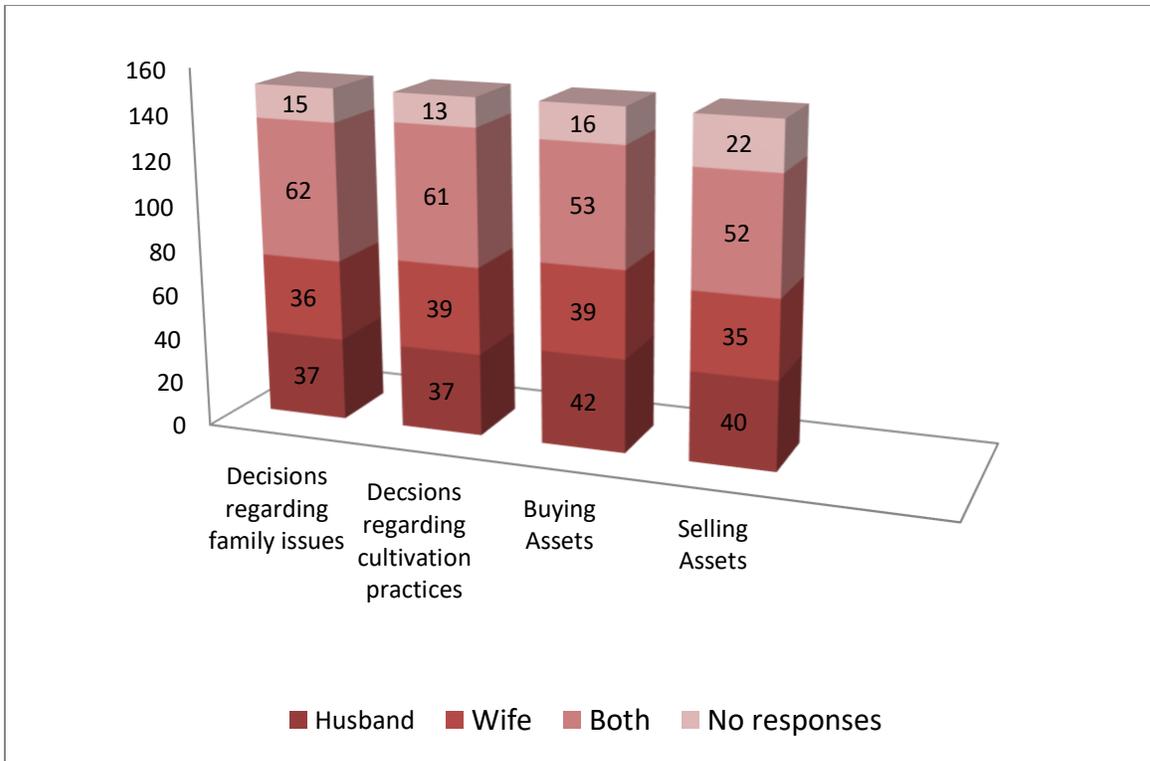
6.1 Respondents response regarding negotiation on sales of tea leaves



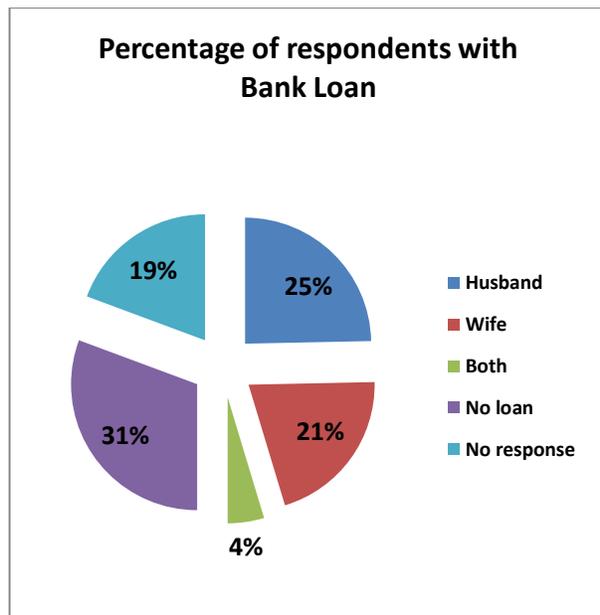
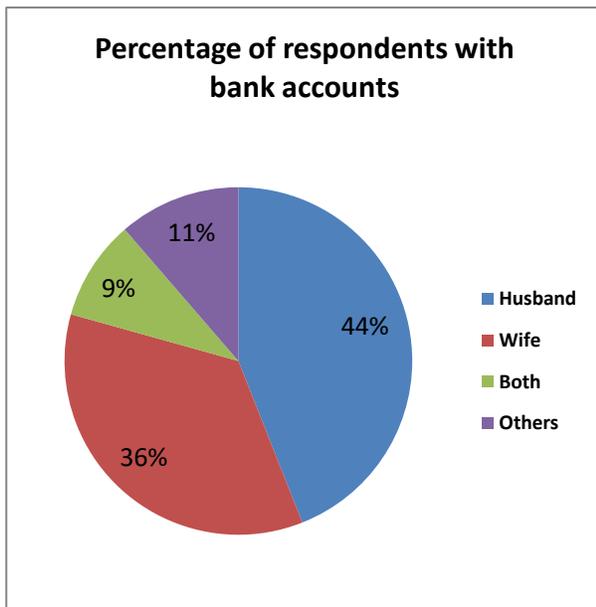
When respondents were asked who takes decision in their family regarding sales of tea leaves, negotiation with buyers and procurement of inputs for tea cultivation, one third of respondents replied that decisions are taken by husband. Another one third of respondents replied that decisions are taken by wife. In the remaining families both husband and wife take decisions. On further probe it was identified that in those families where decisions are taken by wife, it was mostly women headed households. Women are the head of these household in these families. In few families, they are supported by the men. In some families, where men had good education , and good income, educates their children in private schools, decisions regarding sales are taken by men .In families, where decisions are taken together by men and women, 40 percent of the men had some level of formal education and increased income. In the remaining families, the men had good income and exposure. Hence these are the contributing factors for taking combined decisions.

6.2 Respondents Status regarding various decisions

From the below chart it is very clear that in majority of the households , decisions regarding family issues , cultivation practices, buying assets and selling assets are taken by both husband and wife .In the women headed families and families with gender sensitive men decisions are taken by women



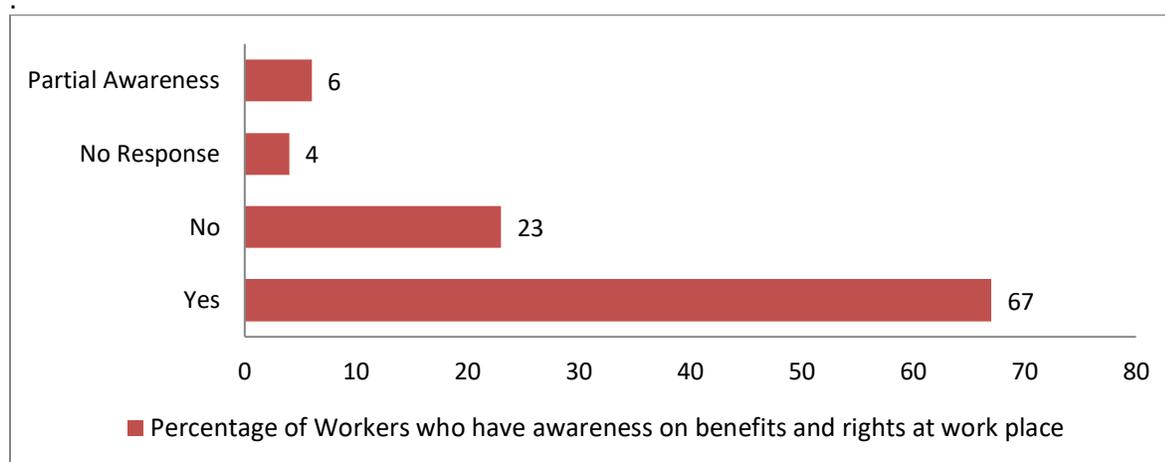
6.3 Banking Transactions



From the above chart it is clear that most of the households covered in the survey ,had more men with savings bank account compared to women. Generally 27 women headed families and widows out of 52

women respondents had savings account in their name. Men who had some level of formal education coupled with good income and exposure had opened joint accounts. However, In case of bank loans there is very small level of difference (4percent) between men and women members holding loans. The SHG movement should contribute to bank loans access to women members. It is very critical that 31percent of the respondents did not have access to any kind of bank loans. It is also interesting to note that those families that have joint account in the bank had also taken loan jointly. Hence it could be confirmed that joint accounts had been created to access loans from the banks by the well educated and informed men.

6.4 Awareness on Benefits and Rights at Work place



When the respondents were asked if they have awareness on their rights and benefits at work place like **minimum hours of work, minimum wages** and other benefits (if it is not clear we can remove it!), two third of the respondents had awareness. It was identified that respondents who travel outside for work and earn relatively higher income had awareness about their benefits and rights at work place. In contrast people who stay within the hamlet and involve in occupations, irrespective of their formal education status are not aware of their benefits and rights at work place.

6.5 Status of Respondents Patta Holding in the family

Particulars	Status of Patta holders
Men	66
Women	22
Joint Patta	1
No Response	11
Total	100
N	150

From the above table, it could be noted that most of the men members in the respondent’s family hold land pattas in their name. However it is good to note that 22 percent of the women members also hold patta in their name. It might be due to the intervention made by the project .One percent of respondents hold joint pitta.

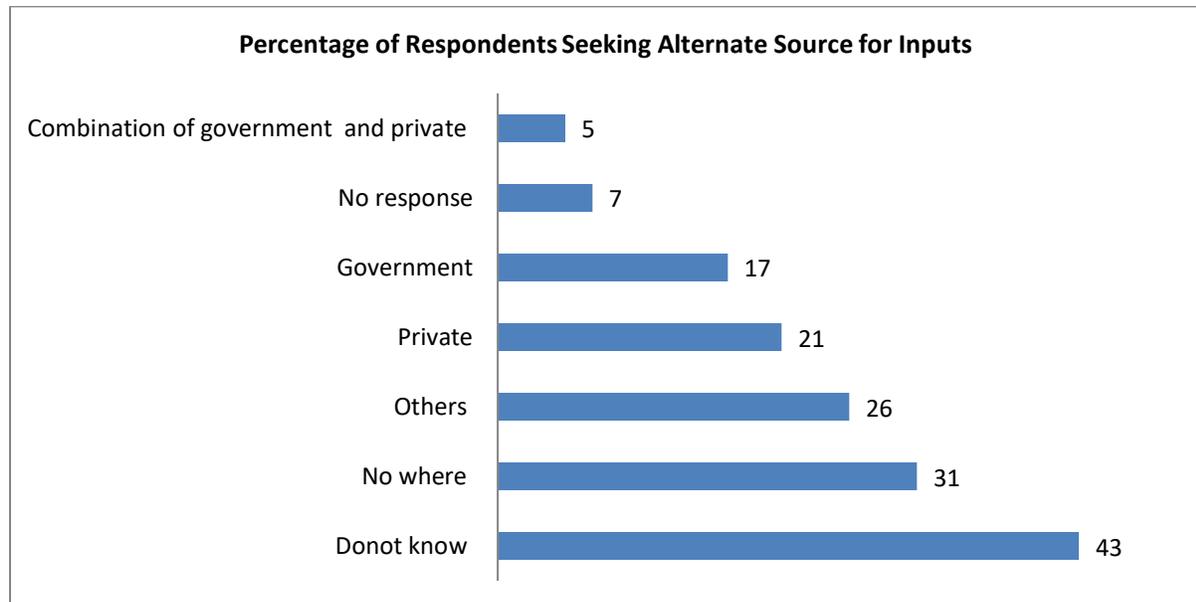
SECTION 7. SUGGESTIONS AND RECOMMENDATIONS

7.1 Suggestions for Strengthening the Tea cultivators Society

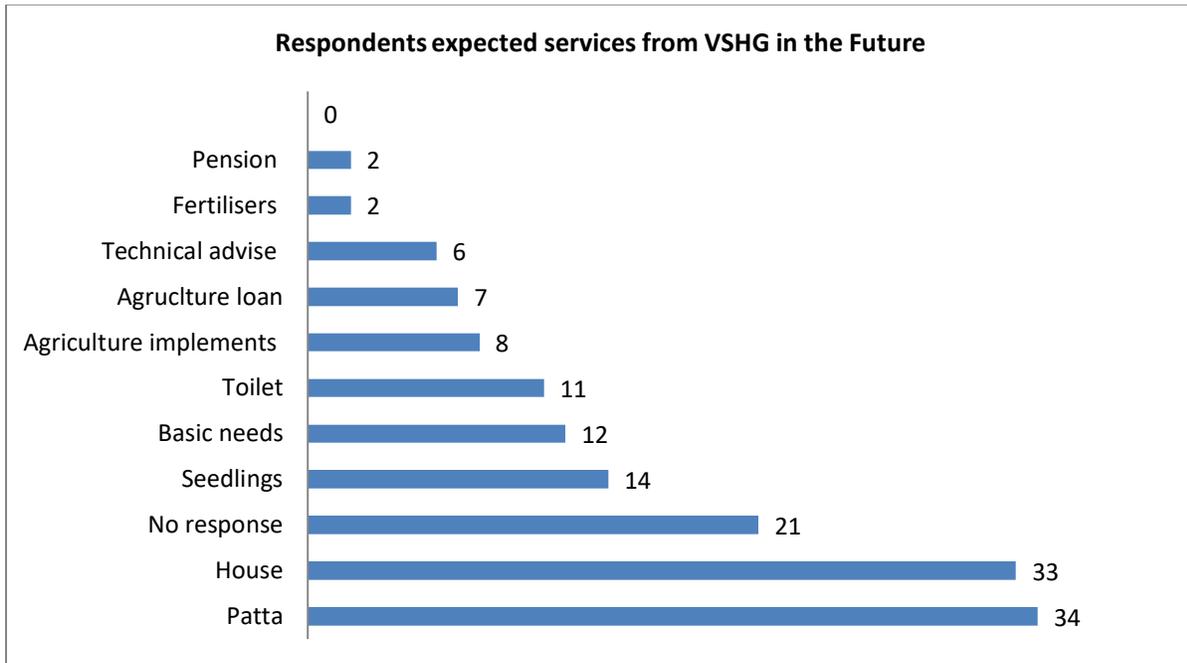
The respondents felt that that unity, cooperation and coordination among the members is essential for strengthening the society. Some of them replied that good leadership is important for developing a society. Periodical change in leadership is very important. The society should work towards implementing government schemes. The current scheme of CISSD and CTRD should be continued .The society should formulate scheme to increase their income and work towards accessing inputs. Many respondents felt that the society should focus on acquiring patta for their members.

7.2 Alternative Sources for accessing Inputs for the Respondents.

When asked about the source of inputs for the members in place of the society majority of the respondents (29 %) did not know an alternative source in place of the society. 21 percent replied they would not source inputs. 17percentrespondents would source inputs from other sources (???? What are they?). 14 percent could source from private agencies. 11percent of respondents could source from government agencies. The above information conveys the fact that respondents are not confident enough to access inputs from various government agencies.

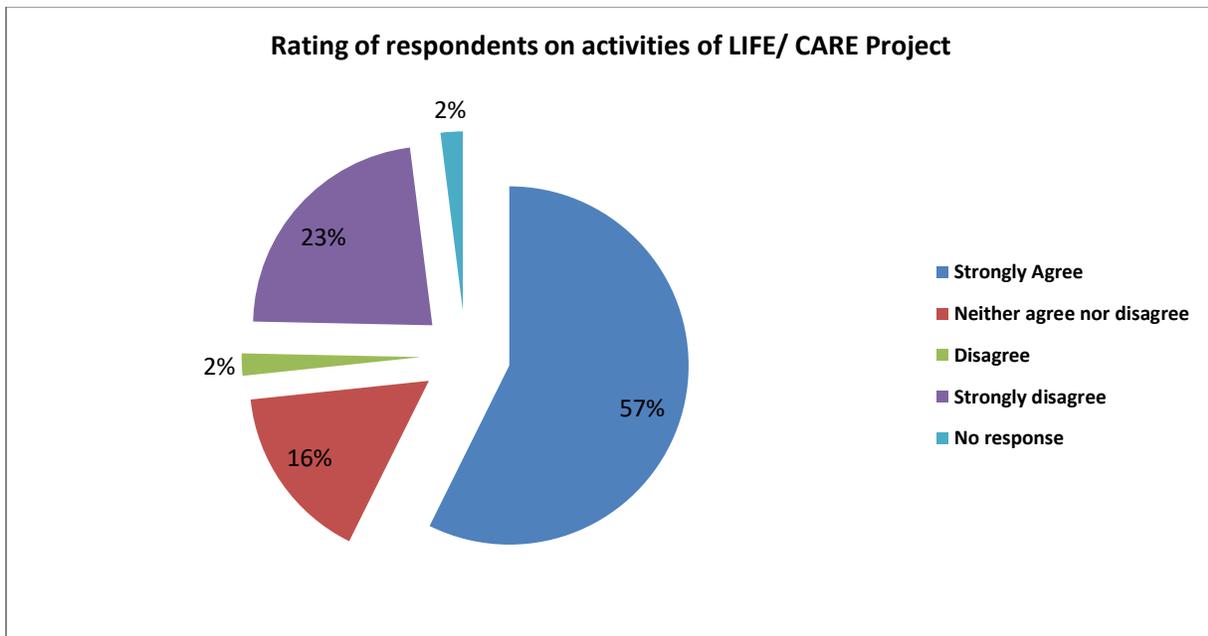


7.3 Expectations from the society in the near future



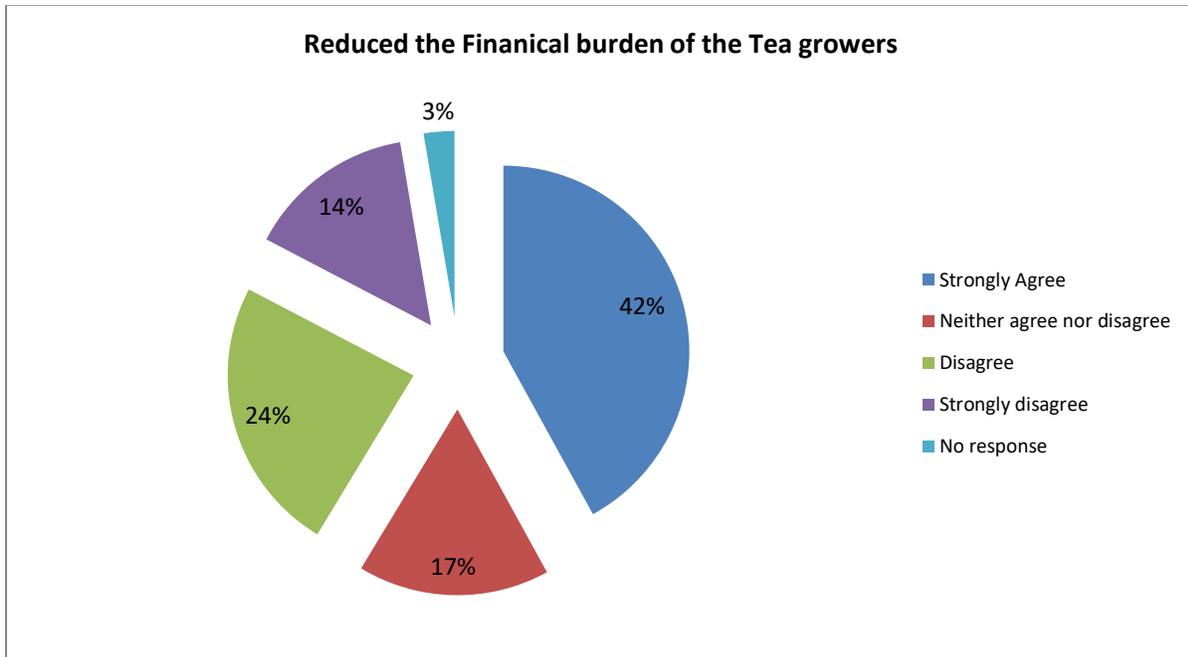
It is quite clear from the above chart that respondents expect their VSHG to work on Land rights and advocacy on priority basis followed by housing and basic needs. Less than 20percent of the respondents wanted their society to provide technical advice, loans, implements, seedlings and fertilizers needed for tea cultivation and other crop cultivation. Hence this is a good insight and the society needs to relook on their plans further.

7.4 Respondents Rating of LIFE/ CARE -implementation the project activity



More than half of the respondents feel that the project activities had been implemented in an efficient way. However 23percent of the respondents do not agree to the above statement. The management and staff are of opinion that the project activities should have benefitted 60 percent of the target farmers

7.5 Reduced financial burden in Tea cultivation through project activities



It is good to note that the project activities and VSHG has helped reduce the financial burden of tea cultivation at least among half of the respondents. However one fourth of the respondents do not feel that their financial burden has reduced. It may be due to the fact that they have not received any tangible benefits like seedlings, fertilizers provided during the project activities

SECTION 8. CHALLENGES OF THE STUDY AND WAY FORWARD

CISSD project has been implemented in this location since 2011. However the capacity building project to mitigate climate change has been implemented in the recent one year period.

The project has got systems, policies, procedures and resources to reach the target audience and produce results. This could be seen from the 18 demonstration plots set up during the last one year. The demonstration plots meet the standards as per its design and provide benefits to the farmers owning it. However it is difficult to measure the impact it has created among the households as most of the inputs in terms of financial support, sapling, fertilizers, technical support has been provided very recently. The increase in productivity and quality of leaves, healthy tea plants, soil fertility would be visible after a couple of years.

On the other hand rest of the beneficiaries () had been aggregated in groups and provided training on various topics and taken for exposure visits and stakeholder visits for developing linkages. The groups or societies have been registered and some of them had undergone renewal annually with the support of the NGO staff. These registered societies could not function independently and need the support of the staff for their day to day activities like conducting the meeting, managing the renewal and other linkages. These societies had not conducted their monthly meeting after the project got completed in December 2014.

The members revealed during the group discussion that it is very difficult to mobilize the members for their monthly meeting. This shows that the members do not voluntarily and actively participate in the activities of the societies. Also the society comprises members from two to three hamlets, due to mobility; it is very difficult to attend the meetings for the members.

It was also identified during the meetings that 30 percent of the members are active in these societies and rest of them is reluctant to share their views and opinions.

Under these circumstances, the training participation reveals that 30 percent of the sampled respondent's population had attended almost all the trainings and programmes organized during the past one year due to various reasons. The real impact of the programme is not visible as it was implemented a year ago. The project should revisit the shortcomings and reformulate its strategy to reach the rest of the participants.

SECTION 9 HUMAN INTEREST STORIES

Emerging tribal women leaders through LIFE and climate change Program of CISSD – Story of Narayani

Ms. Narayani is a native of Pothukoli village dominated by the Paniyas tribal community. She is 62 years old and has two sons and daughters. Both her daughters are married. She lives with her husband and son's family she owns 2 acres of land and cultivates Tea in 0.25 acres of land. As she took active participation in the SHG activities like trainings, adoption of practices, she was selected as one of the member for setting up the demonstration plot. Through leverage support provided through the project, she was provided with tea, pepper and silver oak saplings for gap filling and fertilizers like dolomite to improve the soil fertility of her land and also bio fertilizer. Demonstrations like vermicompost preparations, irrigation channels; half mound channel for pepper has been conducted in her farms. The technical knowledge acquired through various trainings and exposure visits coupled with participation in the stakeholders meet empowered her to support her community and retain her land back from the encroachers.

She recalls one year before when she heard about that her family land was encroached by a non-tribal member in Koovamala village. Her husband owned 0.25 acres of land in Koova mala village. They came to know, this land has been encroached by a non-tribal farmer. At that instance they felt helpless. When they approached the help of the VSHG and the project, they were asked to make an application at the local police station and with the district collector's office. But they did not get any response for some time. Hence during the stakeholders meeting held at Gudalur, Ms. Narayan made an application to the collector and requested his help to get her land back. The district official took immediate action and the local police station put forth efforts and got her land back. Narayani's struggle in getting her encroached land is looked upon by her community members especially by the women folk as a leader! With excitement she share that "Without CTRD and CISSD project", I would not have gained confidence and support in getting back my encroached land.

Story 2 – Mr. Kunzhan

Mr. **Kunzhan** belongs to Kattunayaka community and lives in Panikkal village. He has been involved in CISSD project since 2010. He is a member of Poonthendral tribal tea farmer's society.. Although the society members are dispersed in many villages; he takes part in all the training programmes, exposure visits, stakeholders meet organized through the project. His active participation in the society activities made him to be selected as one of the beneficiary for the demonstration plot. Hence he has received 300 tea saplings, tank constructed for vermicompost, 20 black pepper saplings, 25 silver oak saplings, 2 bags of dolomite, 2 liters of panchakavya and seven packets of biofertiliser leveraged from various government agencies through the project activities. Mr. Kunzhan's family has also received milch animal loan from the self-help group through government assistance. he has also received support for pruning his farm through the project activities. Mr. Kunzhan estimates there would be increase in yield of tea plants from 10-15 kg of leaves per day to 20- 25kg per day due to pruning.

The vermicompost pit made at his farm helped him to produce organic manure for his farm and sell to other farms. The milch animal provides 10 liters of milk per day which is sold at INR 25/liter in the market. Previously his family had bought one milch animal through SHG loan. Now he owns two animals.

Mr. Kunzhan's income has drastically increased in the last four years due to various initiatives taken by him like the diary unit and vermin compost unit coupled with improved tea cultivation practices.

Previously he used to work as a labor in tea estates , now he is completely engaged in farm activities as it comprises activities throughout the year with tea, coffee, black pepper, milch animal and vermicompost unit at his farms. He is able to provide college level education to his two children...

SECTION 10 : TESTIMONIES BY KEY STAKEHOLDERS

“Previously we used to work as laborers in the tea estates. Now we are engaging workers to carry out pruning activities in our farm. Thanks to project activities. The support provided for demonstration plots has really helped us to get hands on knowledge on various technologies.” - Say Ms. Sundari, member Rojapoo SHG, Koundankolli Hamlet, Gudalur Block,

“The climate change project has improved the knowledge level regarding pruning and plucking practices among most of the target farmers. However only 60- 70% of the farmers were able to implement it in the field “.- Mr. Renganathan, Managing Director CTRD Trust, Elamanna.

“NGO support is needed for the tribal tea farmers in order to access the government schemes. They should not be stopping the project activities due to lack of funds. Handholding support is needed for the tea farmers to avail the resources from Tea board “. Mr. Ambalavanan. I.A.S. Executive Director, Tea Board, Conoor.

“The input support should be provided to all the farmers. The village level group should be supported and strengthened to become a sustainable society”. – CTRD Field staff

“I am able to take the technology from Ooty to 60 kms in a remote village due to the project activity. Initially I was not interested to be part of the initiative, but the interest shown by the participants in terms of preparation and collating resources like cow urine for the demonstration really made me take active participation in the training.” Dr. Rajendran, Assistant professor, Horticulture Research station, Ooty

“ Previously , we used to identify the tribal communities living near the road side for most of our schemes This project activities helped us in identifying the right beneficiaries from the real tribal communities in remote areas to train them and provide support . The stakeholders meetings created a platform for line department for collaborations and working together on various government schemes”. - . Dr. O.P.S. Khosla, Principal scientist and Head, Central Soil and Water Conservation Research and Training Institute, Ooty

ANNEX I – QUANTITATIVE QUESTIONNAIRE

ANNEX II – DISCUSSIONS WITH KEY STAKE HOLDERS

Short Summary - In depth Discussion with Key Stakeholders

01	<p>Dr Ramamurthy KVK, Coonor</p> <p>Involvement of KVK in Care project. KVK team has provided training to the target tea farmers of the project on different aspects of tea cultivation like quality tea plucking, pruning methods and silver tip cultivation</p> <p>Problems faced by tribal tea farmers The cost of production has increased, labor scarcity is high, and cost of chemical fertilizers and inputs has increased two to threefold in the recent years. Migration of farmers to industrial areas in the recent years is a major problem. The other major issue is conversion of tea farms into real estate plots. The supply chain is very complex due to the involvement of middlemen and brokers at many levels between producer and the consumer. The consumer and producer do not get real benefits due to the complexity in the supply chain. The price of tea has reduced in the last 17 years from Rs.10 years during 1997 to Rs 8/Kg in the recent period</p> <p>Climate change also affects the farmers in many ways .In the recent past; there has been either low rainfall or prolonged drought which affects the tea production very much. Due to less income during this period the farmers cut the silver oak trees for their income. But then tea leaves get infested by mites. In the presence of silver oak trees, the mites might stay on silver oak leaves and leaves the tea plant in a healthy condition.</p> <p>But in many cases tribal tea farmers are located in lower elevation and the effect of extreme cold conditions on their tea farms is less.</p> <p>Suggestions for improving their livelihoods through tea cultivation</p> <ol style="list-style-type: none"> 1. The potential among tribal tea farmers is that they could do the plucking on themselves thereby resolving the labor scarcity. 2. Technical aspects of tea production have been taught to the tea farmers through many training programmers. Hence these Tea farmers should be provided with marketing support to eliminate the middlemen. These middle men buy tea from tribal farmers at very low cost. 3. Value addition of tea could be done 4. Production of handmade tea could be facilitated
2	<p>MRS Vishay Lakshmi (Subject matter specialist) Nutrition KVK ,Coonoor</p> <p>Involvement in care programme like training on nutrition, designing of kitchen garden , value addition of local resources and marketing .suggestion for improving the programme</p> <p>She has been involved in training target farmers on nutrition, kitchen garden, value addition and seed production. Generally the training was conducted with the help of charts, demonstration with materials available in the tribal household. Some of the aspects like including edible green leaves in their diet , importance of including milk in their diet, importance and value of forest products like honey, value addition of pepper, developing menu plan for their family , different method of nutritional cooking , importance of hygiene. Kitchen garden and its design. vegetable production in kitchen garden and utilization has been discussed during the training programmes</p>

	<p>Value addition support provided to the farmers</p> <ol style="list-style-type: none"> 1. Processing of pepper- maintenance of hygiene and drying 2. Honey processing- Marketing support through display in exhibition and fairs 3. Education on exploitation of middlemen 4. Importance of saving behavior among group members. <p>Seed Production</p> <p>Importance of farm management and use of traditional seed and production of seeds from their own kitchen garden was taught during the training programmes.</p> <p>Experience in Stakeholders Consultation</p> <p>In the meetings, at least 1000 target farmers participated and learnt about government schemes. Representatives from NAWA, Tea Board, and UPASI, State Horticulture department, Central Soil and water conservation institute took part. The farmers were educated about the importance of quality of tea. They were taught about the different measures to be followed to get good price for the tea. The representatives from different line department spoke about different government schemes in their respective institutions and educated the farmers about availing the schemes</p> <p>Challenges faced in implementing the training programmes</p> <ul style="list-style-type: none"> • As the distance to the hamlets is very long and with less connectivity , it hinders the participants to take part actively in these programmes • Inhibition among the tribal farmers. • Lack of vehicle support for the trainers initially and later resolved • Lack of follow up and monitoring support could not be provided by KVK after the training <p>Suggestions</p> <p>Involvement of college students as volunteers for these programme would be very helpful,</p>
3.	<p>Mr. Ambalavanan IAS Executive Director Tea Board Coonoor</p> <p>Very positive about Care activities, need support from CARE for outreach activities, need liaison of agencies with Tea board on monthly basis in order to access the schemes, the project should be continued in order to improve the performance of various societies. Tea board provides various support based on the performance of the societies</p>
4	<p>Dr Rajendran Assistant Professor , Horticulture Research station Ooty</p> <p>Involvement of their agency in taking the technology to the remote tribal farmers is good. Demonstration of organic manure preparation to tribal farmers in their farms and involvement of community is good. 10 member team is involved with CARE in this training project .In the future, budgetary support could be provided in collaboration for training activities and inputs could be supplied for this farmers</p> <p>HRS is actively involved in training SC/ST/OBC farmers in this area. The Care project has taken care of training tribal farmer living in remote areas. According to them creating awareness and providing training to farmers in remote places is a greater achievement. HRS has provided trainings and demonstrations on Panchakavya preparation ,bio agents, biofertilisers, cow based farming methods</p>

	<p>Problems</p> <p>Animal movement is high in these areas .safety is a prime concern</p>
5	<p>Dr. O.P Kholo Principal scientist and Head Dr. Kennan Scientist Central soil and water conservation research and training institute Ooty</p> <p>Collaboration with CARE has helped them in identifying the right tribal beneficiary; Stakeholder consultation organized by CARE was an innovative effort to bring together all line departments to create awareness about schemes available for the farmers.</p> <p>Training support has been provided by their institute, input support in terms of saplings of tea, pepper, distribution of bio fertilizers, micro sprayers to manage drought, distribution on pamphlets on best practices of tea cultivation for farmers are some efforts put forth in collaboration with CARE.</p> <p>He has participated twice in the programme. In the Gudalur stakeholder’s consultation, active participation of farmers and functionaries could be noticed .The target people selected their own activities. Collaborations with various line departments for implementing the programmes happened during the consultation. Advantages of different schemes were easily understood by the participant</p> <p>Initiatives in the institute</p> <p>Multitier cropping Adoption of tea cultivation Gap filling of tea saplings Due to climate change conditions, blight is a major disease in tea, but could be tackled by planting pepper Plans to converge with NGO’s Less time to collaborate Earlier they used to identify tribal living near the road side as beneficiaries of their programme but on collaboration with CARE they are able to reach the right beneficiaries in remote areas.</p> <p>Training support</p> <ol style="list-style-type: none"> 1. Training on Soil and water conservation for pepper. 2. Training on use of biofertiliser for managing wilt disease in pepper 3. Use of bio control agents 4. Training on drought management measures 5. Gap filling practices 6. Training on water harvesting practices like making half mounds for pepper and ring wells in other areas <p>Input support</p> <p>Micro sprayers had been provided to 9 groups to manage drought measures 50 liters of panchakavya Pepper saplings and tea saplings for beneficiaries has been provided 1000 pamphlets on best practices in Tea cultivation in Tamil languages has been provided</p> <p>Exposure visit to the institute</p> <p>During the exposure visit to the institute, the participants learnt about triangular planting, water harvesting structures, pruning techniques. landslides and management</p>