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Assessment of changes in selected project progress markers for the Climate Change, Agriculture and Poverty Alleviation (CCAP) project in six villages in Kilosa and Chamwino Districts

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For

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LIST OF ACRONYMS

| | |
|---------|---|
| CC | Climate Change |
| DADPs | District Agriculture Development Plans |
| C3S | Climate Smart Small Scale Agriculture |
| CCAP | Climate Change Agriculture and Poverty Alleviation |
| CSOs | Civil Society Organisations |
| FAO | Food and Agriculture Organization of the United Nations |
| FFS | Farm Field School |
| LHS | Left Hand Side |
| MJUMITA | Community Forest Conservation Network |
| MVIWATA | Farmer's Network of Tanzania |
| SPSS | Statistical Package for Social Science |
| SSFs | Small Scale Farmers |
| REDD | Reducing Emissions of GHG from Deforestation and forest Degradation |
| RHS | Right Hand side |
| TFCG | Tanzania Forest Conservation Group |
| TOT | Training of trainers |
| TOAM | Tanzania Organic Agriculture Movement |

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EXECUTIVE SUMMARY

The study for assessing changes in selected CCAP project progress markers was conducted in August 2013 at Ibingu, Kisongwe and Lunenzi villages in Kilosa (Morogoro region) and Mahama, Manchali and Nzali villages in Chamwino, Dodoma region. This assignment was aimed at monitoring the project named "Climate change, agriculture and poverty alleviation: aiming at putting the small-scale farmers at the heart of policy and practice" which is a partnership project implemented by five (5) CSOs namely Community Forest Conservation Network of Tanzania (MJUMITA), the Farmer's Network of Tanzania (MVIWATA), the Tanzania Forest Conservation Group (TFCG), ActionAid Tanzania and the Tanzania Organic Agriculture Movement (TOAM).

The study aimed to assess the priority stakeholder behaviour in relation to selected progress markers in order to determine the progress of the project in relation to its desired outcomes. This study was led by David D. Maleko with close assistant from Peter Ruvuga, James Kiswaga and Rogers Dauson.

The survey employed a number of different methods including direct observation, administering structured questionnaires, informal discussion with the key stakeholders and video recording.

The study found that: the level of understanding on climate smart, small-scale agriculture has increased amongst most stakeholders with reference to the baseline situation; and few farmers have practiced C3S agriculture in their farms last season. Most of the progress makers for gauging change of behaviour amongst project stakeholders were responding positively. Implying that most SSFs has positive attitude towards adoption of environmental friendly and climate change compatible small scale agriculture at the study areas. Support by the district authority for C3S agriculture was still low due to higher number of complains amongst small scale farmers about delayed delivery of DADPs services and items, and poor integration of community plan. Also, rate of diffusing C3S knowledge from the project villages to nearby villages was found to be low.

The study recommends that there is a need to organize more training and awareness raising events to the project stakeholders. It is further suggested that those training events and other initiatives aiming at enhancing C3S agriculture adoption amongst small scale farmers should consider a multidisciplinary approach. Moreover, TOT model is proposed in which the SSFs who have already participated in the

C3S trainings should be facilitated to invite and train fellow SSFs at the project FFSs or even visit their fellow SSFs' farms for knowledge dissemination.

1.0 INTRODUCTION

1.1 Background

This mid-term evaluation study was conducted as a part of the project titled Climate Change, Agriculture and Poverty Alleviation, a partnership project between five civil society organisations (ActionAid Tanzania, Tanzania Organic Agriculture Movement, Tanzania Forest Conservation Group, MVIWATA and MJUMITA) with a commitment to improve accountability and with specific experience in agriculture, REDD, participatory forest management and working with grassroots communities in conservation and development activities. As part of the project implementation, the study assessed priority stakeholder behaviour in relation to selected progress markers in order to determine the progress of the project in relation to its desired outcomes with reference to the baseline scenario. The work involved assessing current knowledge, attitude and practices to the relevant stakeholders and documented the current situations of project indicators compared to the conditions in the baseline study. The study was conducted in six villages in both Kilosa and Chamwino District in Morogoro and Dodoma region respectively. The study employed different methods that include direct observation, administering questionnaires, informal discussion with the key stakeholders and video recording. These included interviewing of 70 small scale farmers from all project Farm Field Schools, 3 Farm Field Schools in Kilosa and 4 in Chamwino that means 10 farmers from each Farm Field School; 6 village chairs from all project villages in Kilosa and Chamwino; 2 ward councillors and 2 district agriculture officers for Chamwino and Kilosa. Furthermore, the level of conservation agriculture knowledge uptake was documented including reasons for observed successes and failures. Relevant video clips and photographs were taken for effective communication of the project progress, as well as for communicating the project outcomes to a larger part of the society.

1.2 Objectives of the assignment

1.2.2 Overall objective

The overall aim of the assignment was to assess priority stakeholder behaviour in relation to selected progress markers in order to determine the progress of the project in relation to its desired outcomes.

1.2.3 Specific objectives

1. To document the current behaviour of small-scale farmers, elected officials at village and ward level, and district officials in relation to their respective outcome mapping progress markers.
2. To document changes attributable to the project by comparing the results of this study with the results of the baseline study for each of the selected project progress markers in this study in areas where the project has been active.

3. To document at least five interesting case studies of changes in relation to project progress markers, of which three should describe behaviour changes amongst small scale farmers; one for an elected official and one for a District Official. Documentation should include good quality photos of the interviewees.
4. To record a few short video clips of individual farmers in the field explaining and showing the success that they have attained through the support of project. These video clips are to be shared with the public through YouTube and the project's blog sites.

1.3 Scope of the assignment

The scope of this study was to capture and document changes in stakeholder behaviour in relation to project progress markers which are attributable to project interventions since its inception in February 2013. The project progress markers that were assessed as part of this assignment are progress markers for: small scale farmers (specifically farmers who have participated in agricultural training provided by the project), elected representatives (Village leaders and ward councillors) and district officials.

1.4 Limitations of the study

The time of this study was so limited to elicit all the information given the fact that the study was conducted during farmers' exhibition weeks that delayed some of the activities in field. The study was also conducted in the period when farmers are out of season and hence evidence of good agricultural practices was not easily captured in field. Many farmers in both Kilosa and Chamwino had harvested their crops during this study. Moreover, the small sample size in particular for the elected representatives also rendered a fair comparison between the findings of the baseline study and those of the present study.

2.0 STUDY METHODOLOGY

The study for assessing changes in selected project progress markers for the climate change, agriculture and poverty alleviation initiative was conducted in six villages namely Lunenzi, Ibingu and Kisongwe villages in Kilosa District and Mahama, Nzali and Manchali villages in Chamwino Districts. Purposively sampling design was employed in which in each project village, only those smallholder farmers that have participated in the CCAP project training activities in the farm fields were randomly selected and interviewed. This enabled assessment of the impacts that the CCAP project had so far hitherto brought to the project villages.

Both secondary and primary data were collected by the use of qualitative and quantitative method, direct observation and reviewing existing CCPA project reports. Quantitative data was collected through

structured questionnaires that were administered to the selected smallholder farmers, elected village leaders, ward council members and the district agricultural officers.

Structured interviews involved administering questionnaires (*Annex II: A, B and C*) with both closed and open ended question to small scale farmers.

3.0 SAMPLING STRATEGY

A sample size of 10 small scale farmers from each project village that have participated in CCAP project trainings in each particular farm field, making 70 small farmers for the 7 CCAP project farm fields were interviewed. Furthermore, 6 village chairpersons from each project village and 2 ward council members from Lumuma ward in Kilosa district and Chilonwa ward in Chamwino district were interviewed. This aimed at eliciting the necessary information regarding the conservation agriculture uptake and the attitude of the village members using structured questionnaire (*Annex IIb*). Moreover, one agricultural officer was interviewed in both Chamwino and Kilosa districts in order to capture relevant information regarding the project progress, and if there is any government or other organizations support towards conservation agriculture in or around the project villages.

3.1 Data analysis

The data collected during this study were descriptively analysed by using Microsoft Excel spread sheet and Statistical Package for Social Science (SPSS) computer software. The results are presented in a descriptive format of the information obtained from analysis.

4.0 RESULTS

4.1. SITUATION OF SELECTED PROJECT INDICATORS

This section highlights the results of this study in relation to the selected progress markers. Since the study is meant to compare with data obtained during the baseline study, the results therefore, are presented on the selected sections of the baseline study which relates to the selected progress markers. The specific result starts with an indicator as of the baseline study to reflect where that result is contributing as per the project objectives.

Intermediate objective Tanzania has developed and is implementing policies and strategies that prioritise support to small-scale farmers to enable them to improve their livelihoods through the adoption of climate smart agriculture and sustainable land and natural resources management.

Intermediate Objective Indicator 1: Districts are receiving and distributing resources to support small-scale farmers to adopt more climate smart agriculture.

As a way to adopt more climate smart agriculture, it is anticipated by the project that there is a need for the community to be helped with necessary resources by government level especially the district. So as to draw an evidence of whether there has been any support that has been provided by the district to small-scale farmers, this study asked farmers on whether they are receiving agricultural credit for adding value to their agricultural produce. The findings of this study reveal that, 82% of the interviewed small scale farmers from Chamwino reported to have received and 18% reported to have not received support for adding value to their agriculture produces (Figure 1). On the other hand 27% of the interviewed famers in Kilosa reported to have received supports whereas 73% of them reported to have not received supports (Figure 2)

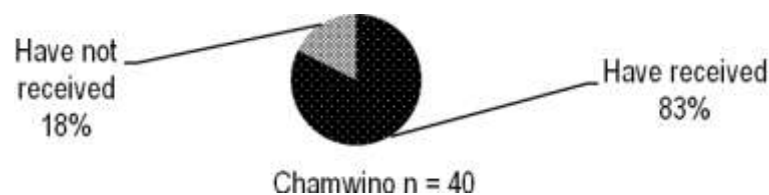


Figure 1: Farmers' responses on whether they have received support to add value to their agriculture produces

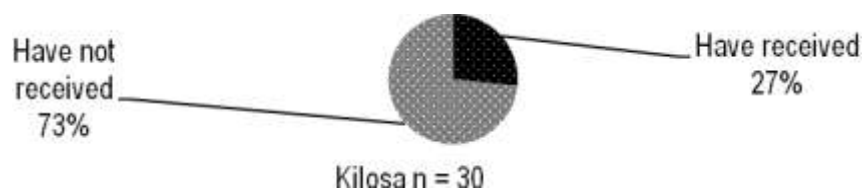


Figure 2: Farmers' responses on whether they have received support to add value to their agriculture produces

To those who testified to have received agriculture credits for adding value to their agricultural produces, accredited to have received industrial fertilizer and improved seeds particularly maize and sorghum as support for adding value to their agriculture produces. As per this study, the typically buttressed supply to farmers was fertilizer as compared to seeds as presented in figure 3 and 4 below.

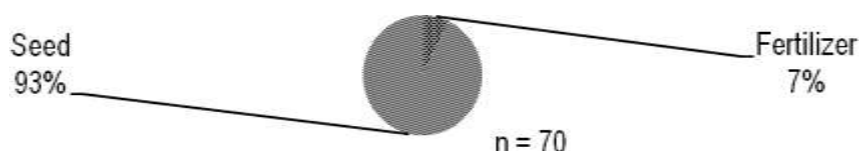


Figure 3: Farmers' responses on kind of support they have received to adopt climate smart small scale agriculture

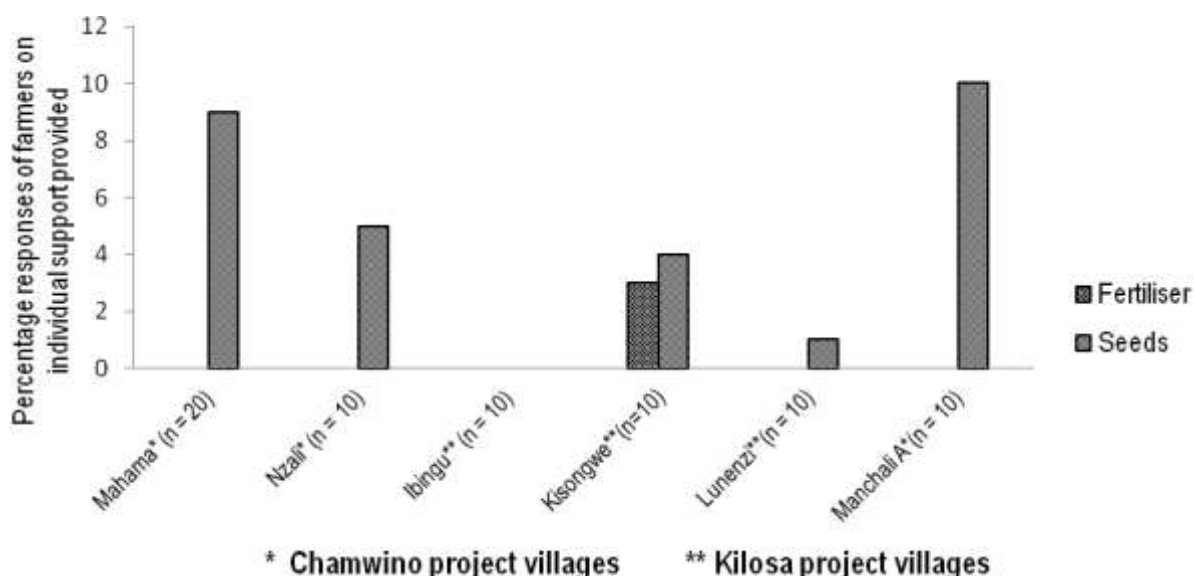


Figure 4: Farmers' responses on supports provided to them at a village level

Moreover, upon interviewing the elected village representatives and ward councillors in both Kilosa and Chamwino districts. The baseline survey revealed that the village leaders from both Kilosa and Chamwino study have been at least receiving some support to adapt to climate change from the district. In which, 30% (n=40) and 25% (n=40) of the interviewed village leaders in Kilosa and Chamwino districts respectively reported that they have been receiving support to support C3S agriculture from the district. However this study, contrary to the baseline scenario all of the interviewed village leaders and ward councillors [100%, (n=8)] acknowledged that they have been receiving and distributing some resources for supporting C3S agriculture from the respective districts.

During the baseline survey, amongst those who reported that they had received support for C3S agriculture in Chamwino districts (n = 40) they mentioned drought resistant crops (23%), extension services (5%), irrigation equipment and finance (each 2%) and fertilizer (3%). In Kilosa (n = 40),

farmers mentioned provision of drought resistant seeds (17%) and fertilizers (18%) as support they have received from the district to adopt more climate smart agriculture.

The findings of the present survey concurred to those of baseline study in some aspects including relatively higher percents of the leaders (n=4 in each district) who reported that they have been receiving mainly drought resistant seeds (10% Kilosa and 18% Chamwino) and extension services (10% Kilosa and 17% Chamwino). While, support for industrial fertilizers was very limited in both Kilosa and Chamwino districts at 5% and 6% respectively. Moreover, limited support for irrigation and soil tilling equipments was mentioned only in Kilosa district at Lunenzi village (Figure 5 and 6 below). Nevertheless, contrary to the baseline survey no financial support to the small scale farmers was reported during this survey.

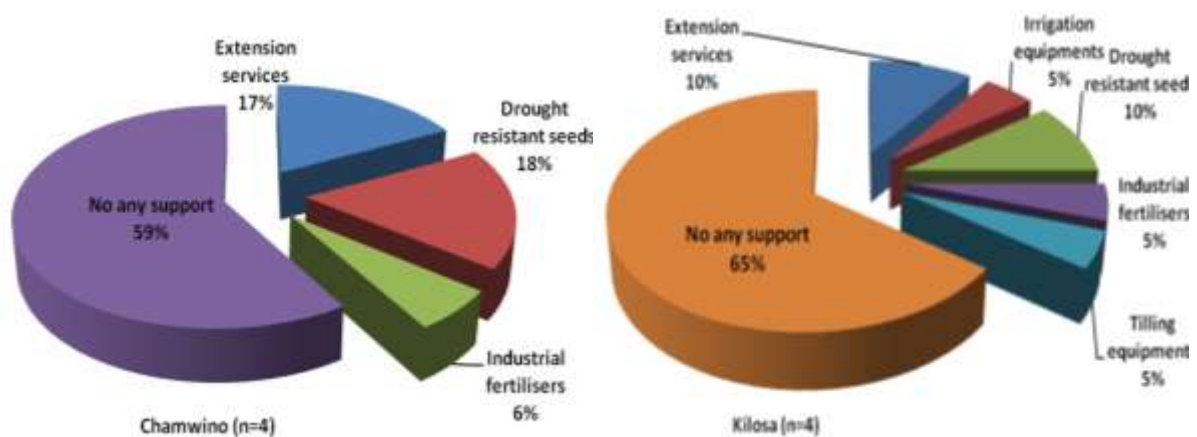


Figure 5: Elected village representatives and ward councillors' response on the kinds of supports provided by the Kilosa and Chamwino districts to SSF in the study villages

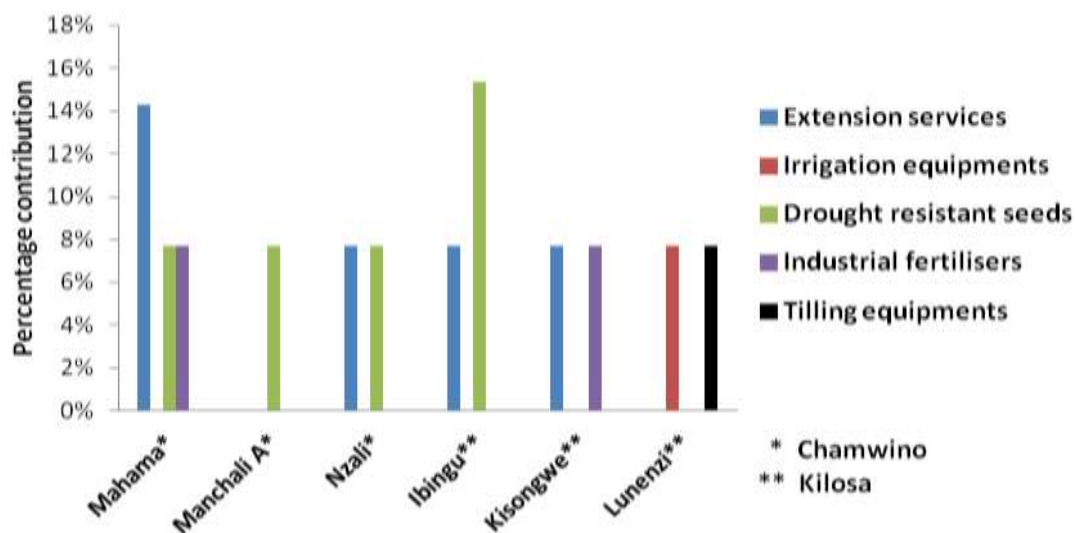


Figure 6: Support received by the village leaders at village level to adopt climate smart agriculture in the CCAP project villages

Output 3: Small-scale farmers in three eco-agricultural zones provide a forum for learning and knowledge exchange on best practice in terms of climate-smart agriculture and support for C3S agriculture is integrated in District plans.

Output 3 Indicator 3.1: 360 farmers are modelling best practice in climate smart, small-scale agriculture by end of year 3

This study at first assessed whether farmers apply C3S in their farm. The result of this study demonstrate that out of the interviewed 70 small scale farmers from 7 farm field schools, 94% of them apply C3S and only 6% of them do not apply C3S practises in their farms as shown in figure 7 below.

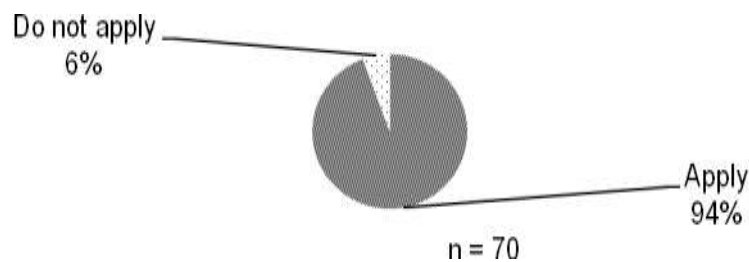


Figure 7: Small-scale farmers' responses on whether they apply C3S in their farm

Those who mentioned not to apply C3S agriculture in their farm had different reasons as shown in figure 8 below.

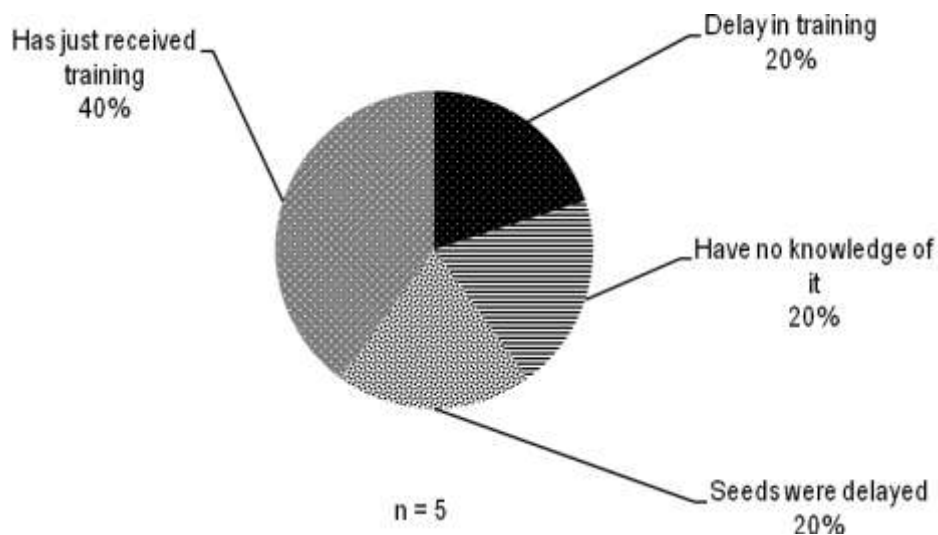


Figure 8: Small scale farmers' reasons for not applying C3S agriculture in their farms

The assessment of current C3S practices that are implemented by farmers shows that farmers are embarked on different C3S practices. These practices are as depicted in table 1 and table 2 below. In

general there seems to be more applications of C3S practices in Chamwino as opposed to Kilosa farmers as shown by number percentage responses of farmers on each individual C3S practices in table 1 and 2 below and in figure 9.

Table 1 C3S techniques application in Chamwino study villages

| C3S Practice | Apply | Do not apply |
|-----------------------------------|--------------|---------------------|
| Irrigation agriculture | 5% | 95% |
| Terracing | 48% | 53% |
| Minimum tillage | 30% | 70% |
| Crop rotation | 30% | 70% |
| Crop cover | 40% | 60% |
| Mulching | 8% | 93% |
| Land fallowing | 20% | 80% |
| Herbicides use | 3% | 98% |
| Downhill and uphill trenches | 0% | 100% |
| Mixture cropping | 20% | 80% |
| Pesticide use | 8% | 93% |
| Proper application of nutrient | 0% | 100% |
| Extension of crop rotation | 0% | 100% |
| Clearing forest to open new field | 10% | 90% |
| Application of fertilizers | 63% | 38% |

Table 2 C3S techniques application in Kilosa study villages

| C3S Practice | Apply | Do not apply |
|-----------------------------------|--------------|---------------------|
| Irrigation agriculture | 15% | 85% |
| Terracing | 25% | 75% |
| Minimum tillage | 25% | 75% |
| Crop rotation | 20% | 80% |
| Crop cover | 18% | 83% |
| Mulching | 35% | 65% |
| Land fallowing | 23% | 78% |
| Herbicides use | 0% | 100% |
| Downhill and uphill trenches | 20% | 80% |
| Mixture cropping | 23% | 78% |
| Pesticide use | 3% | 98% |
| Proper application of nutrient | 8% | 93% |
| Extension of crop rotation | 5% | 95% |
| Clearing forest to open new field | 10% | 90% |
| Application of fertilizers | 30% | 70% |

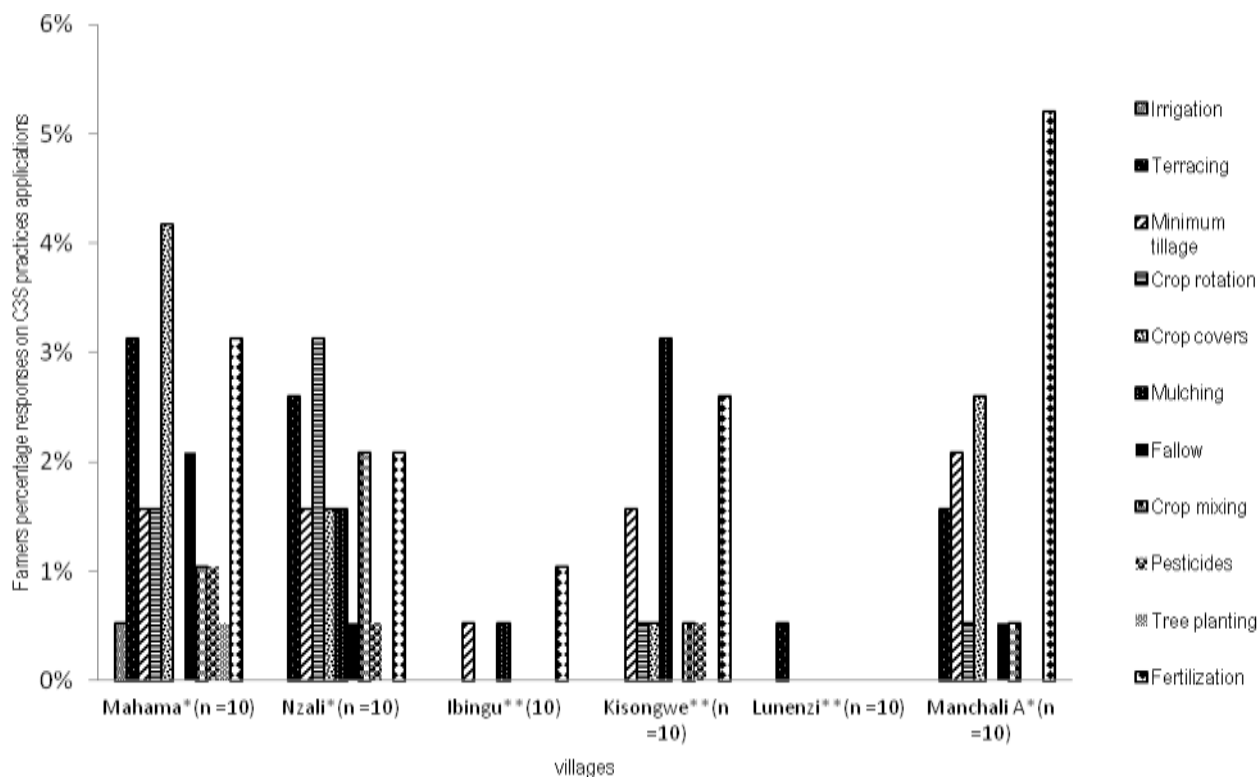


Figure 9: C3S application at the village level

Output 3 Indicator 3.2. 10,000 farmers have learned at first-hand about C3S agriculture and are integrating key element of C3S agriculture on their farms.

The project foreknows farmers to have acquired knowledge of C3S agriculture and integrate its elements in their farms. So as to assess this, the study asked farmers whether they have attended any C3S training. The result of this study has unfolded that 94% of the interviewed 70 small scale farmers have learned C3S agriculture and only 6% of them have not learned at first-hand about C3S agriculture. As depicted above in Table 1 and 2 and figure 9, some of the farmers are also integrating some of the C3S agriculture practices in their farm.

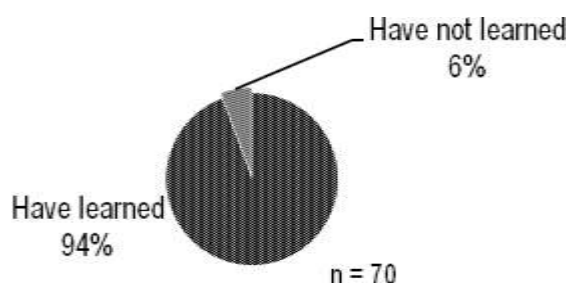


Figure 10: Farmers' response on whether they have learned at first-hand about C3S agriculture

Output 3 Indicator 3.4: 5 million farmers have received practical information on measures that they can take to improve their resilience to climate change.

One of the reasons for low adaptation capacity of farmers in the developing countries is the lack of practical information of the measures that these communities can take to adapt to climate change. The CCAP project intends to make this information available to farmer to exploit for their increased resilience. The baseline study did assess the level of availability of this information to small scale farmers in the study village. This contemporary study has found that currently it is 96% of the famers who receive practical information on the measures they can take to increase their climate change impacts resilience. And it also found that 4% of them do not receive practical information that they can take to withstand with climate change impacts in their area (Figure 11)

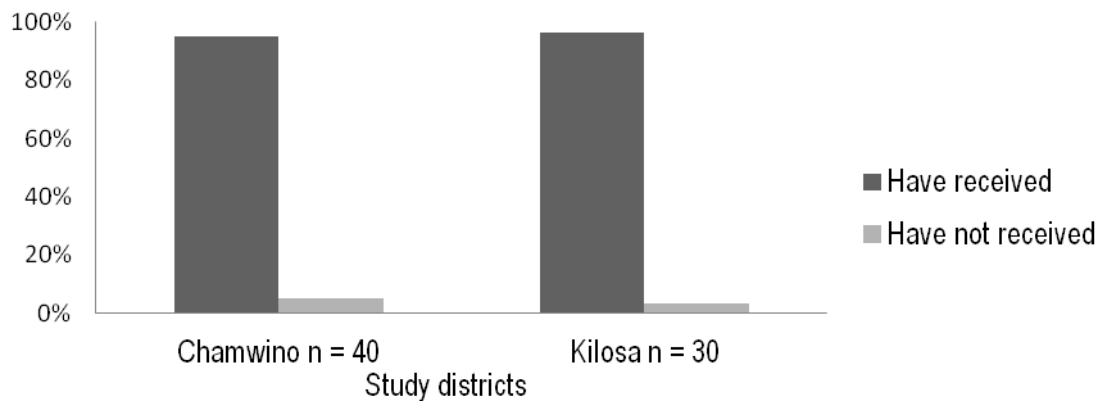


Figure 11: Farmers' responses on whether they receive practical information to withstand with climate change impacts

When farmers were asked on where they are currently receiving that practical information, majority of them (85%) mentioned from Non-government organization and others mentioned (7%) mentioned central government while the rest mentioned from the districts (8%) as depicted in figure 12.

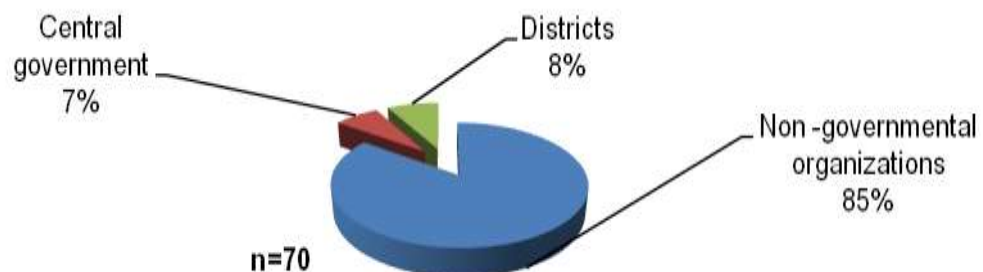


Figure 12: Farmers' responses on whether they receive practical information to withstand with climate change impacts

4.2 SITUATION OF THE PRIORITY STAKEHOLDERS' PROJECT PROGRESS MARKERS

4.2.1 Small scale farmers

Output makers: Expect to see

- 1. Small-scale farmers participate in training and awareness raising events related to climate change, climate smart small-scale agriculture, land tenure, micro-finance and REDD.**

Training is one of the methods to capacitate farmers to increase their adaptation capability by knowing different practices that they can take but also knowing climate change, its causes, impacts and perhaps the way how to adapt it. On the other hand when farmers are offered with other economic activities like microfinance initiatives to diversify their income source, it helps to increase their climate change impact resilience. The project foresees training on climate change, climate smart small scale agriculture, land tenure, microfinance and REDD as one of the markers of small scale farmers progress toward addressing climate change and its impacts. Existence of this training was assessed during the baseline study and this study also did assess whether farmers have attained these trainings of awareness.

Climate change training

The results of this study indicates that of the interviewed 70 small scale farmers, it is 93% of them who have attended climate change training and 7% of them have not attended climate change training (Figure 13). Those who mentioned to have attended climate change training reported to have received those trainings from different authorities those government and non-government organization. This is as shown in figure 14 below.

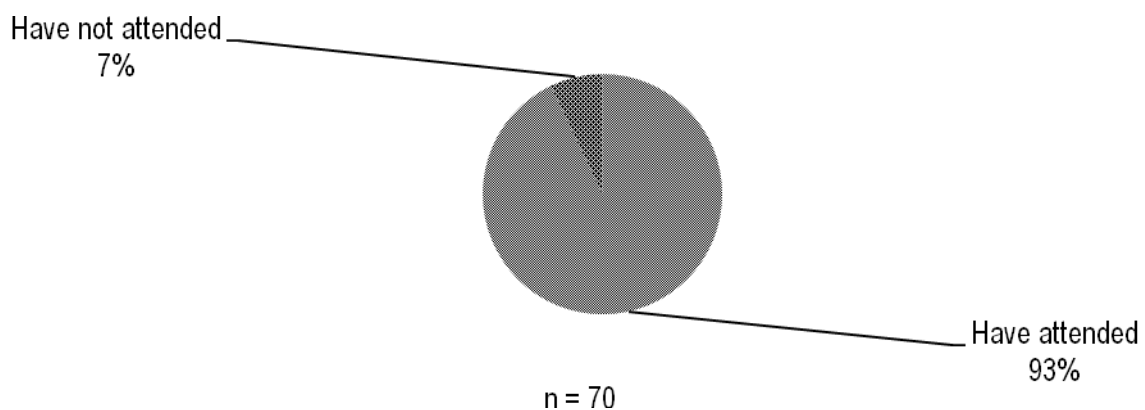
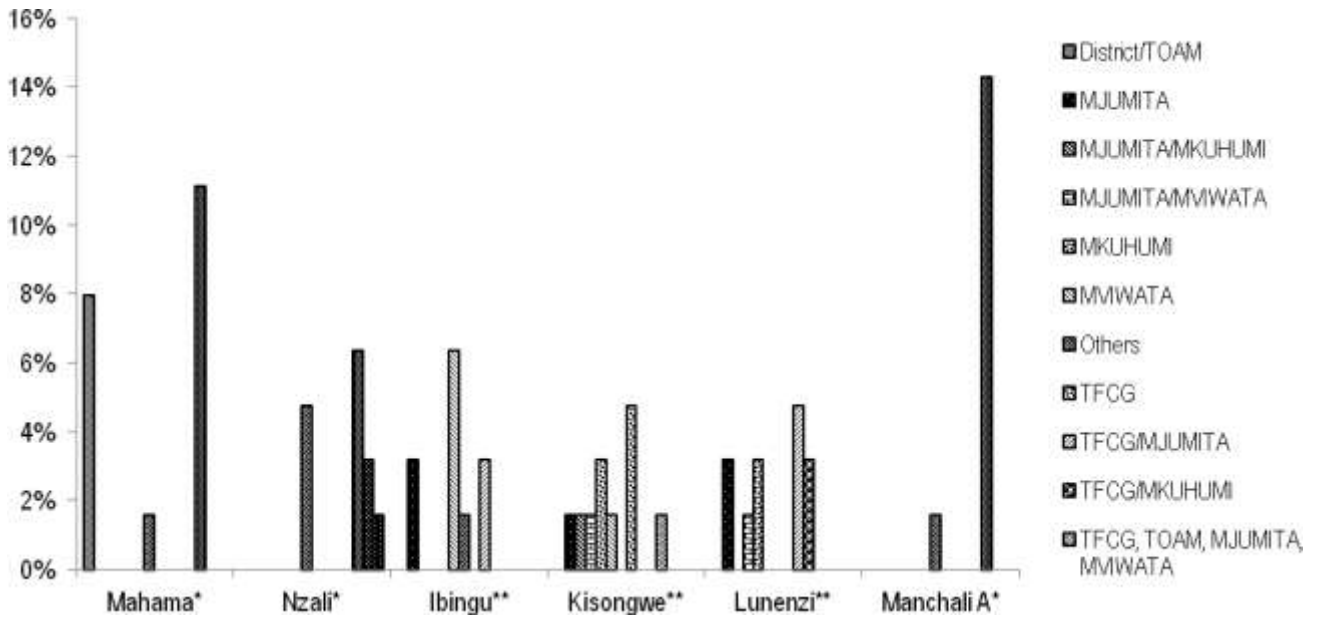


Figure 13: Farmers' responses on whether they have attended climate change trainings



Note: * Chamwino project villages ** Kilosa project villages

Figure 14: Small scale farmers' response on who offered them with climate change training

Climate smart small scale agriculture trainings

The results of this study has indicated that 6% of the interviewed 70 small scale farmers have not attended C3S agriculture training and that 94% of them have attended C3S agriculture training (Figure 15). Figure 16 below shows where these farmers have received these trainings per village.

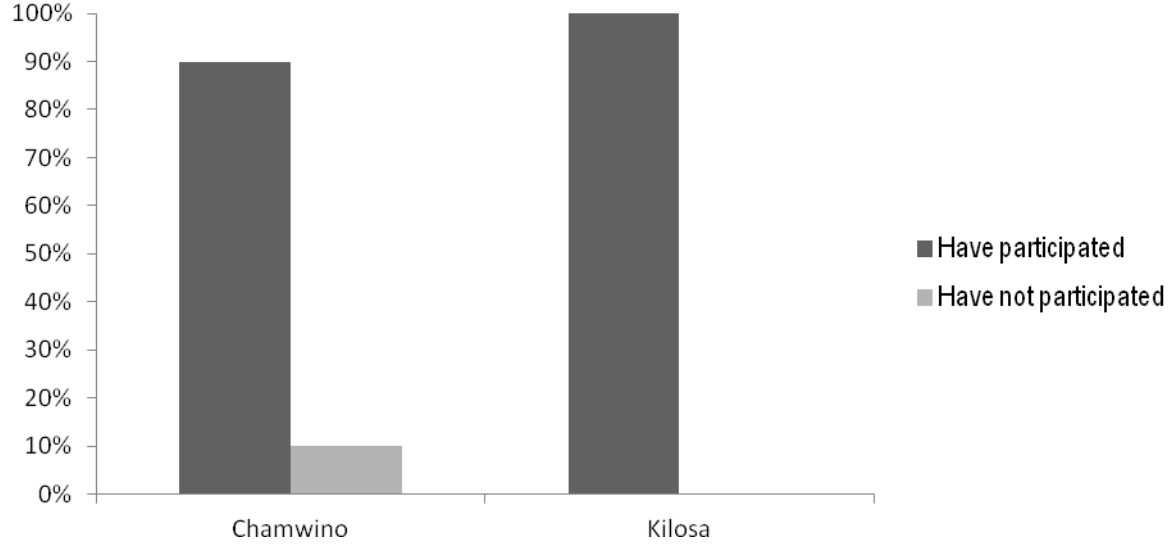


Figure 15: Farmers' responses on whether they have attended C3S agriculture trainings

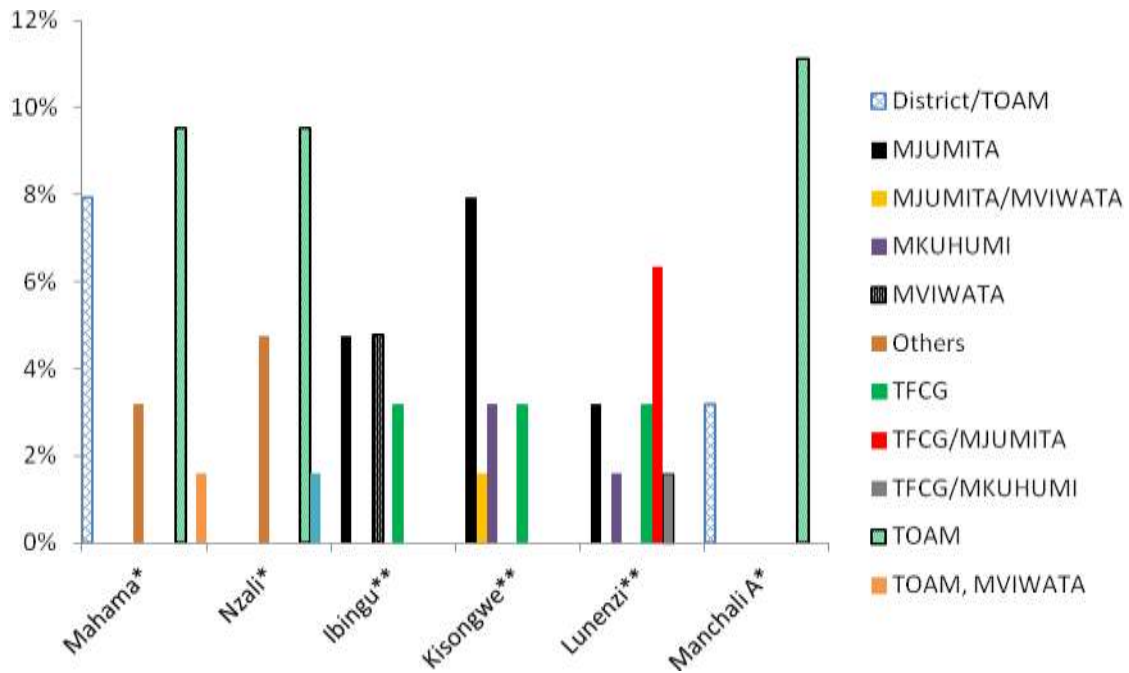


Figure 16: Farmers' responses on who offered them with C3S trainings at the village level

Land tenure training

This study has revealed that of the interviewed 70 small scale farmers, it is 41% of them who has attended land tenure training and 59% of them have not attended land tenure training (Figure 17). Specific authorities that did offer this kind of training at the village level is as shown in figure 18 below.

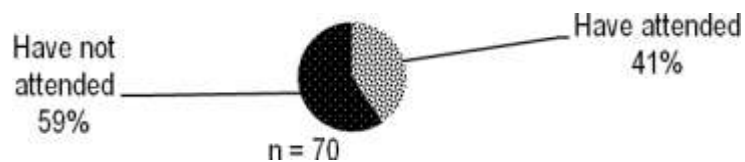


Figure 17: Farmers' responses on whether they have attended land tenure trainings

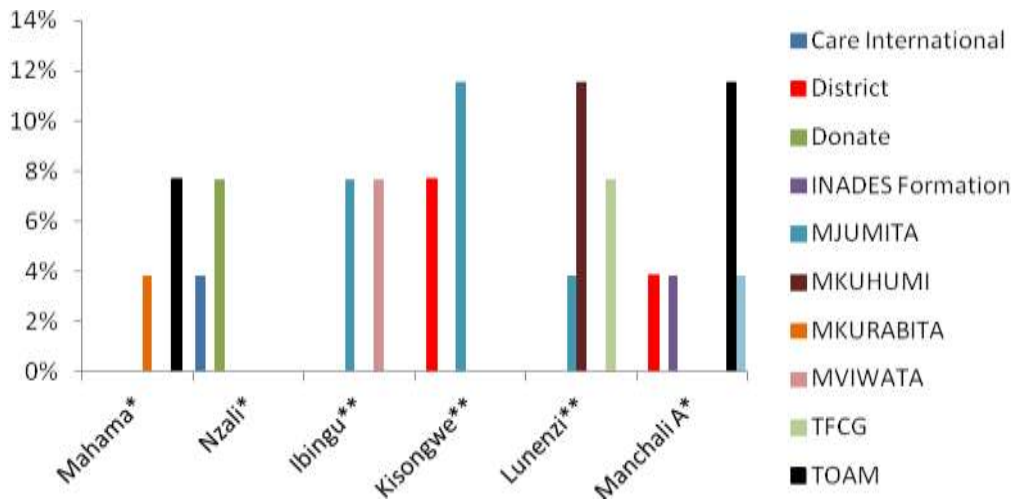


Figure 18: Farmers' responses on who offered them with land tenure training at the village level

Microfinance training

The results of this study have shown that there is 36% of the farmers who have attended training on microfinance and that 66% of them have not attended such training (Figure 19). Figure 20 below indicates at village level where those who have attended training on microfinance did get such training.

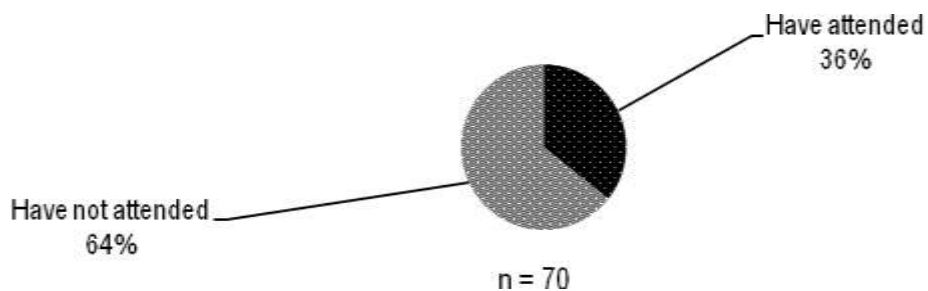


Figure 19: Farmers' responses on whether they have attended training on microfinance

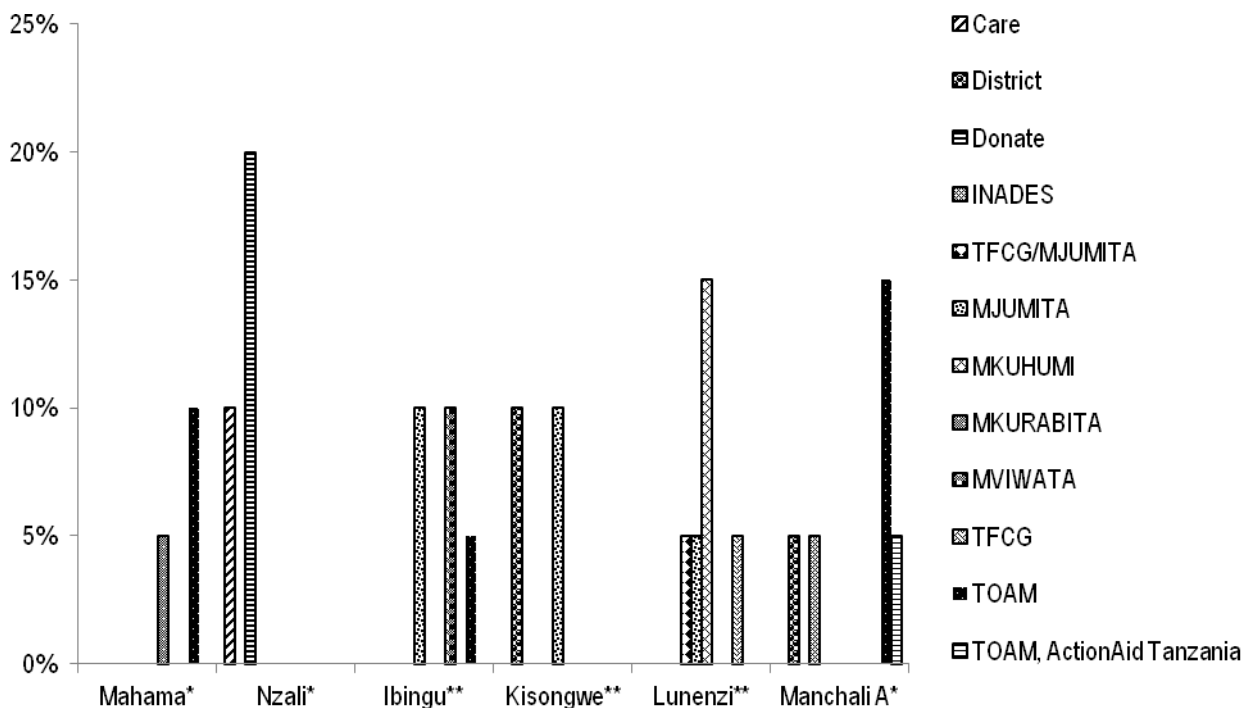


Figure 20: Farmers' response on who did offer them with microfinance training at the village level

Reduced emission from deforestation and degradation trainings

This study has found that out of the interviewed 70 small scale farmers, it is 36% of them who have attended REDD trainings and the rest 64% of them have not attended REDD trainings (figure 21) Those who reported to have attended REDD training mentioned different authorities from which they got those trainings. These are as shown in figure 22 below.

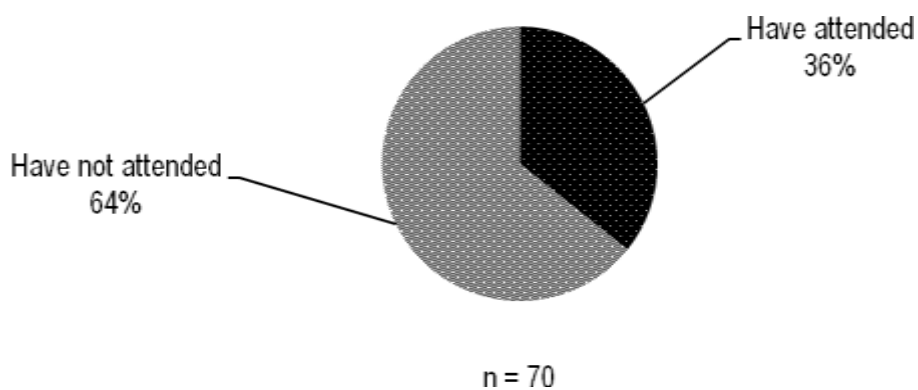


Figure 21: Farmers responses on whether they have attended REDD training

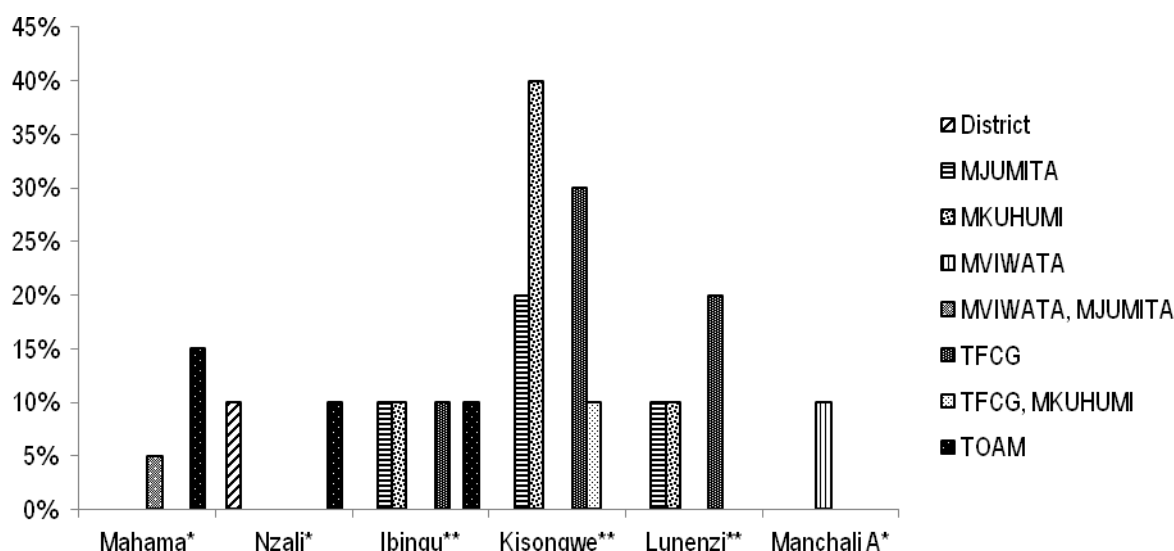


Figure 22: Farmers' responses on who did offer them REDD training

Output makers: Like to see

1. **Small-scale farmers including both women and men in the project villagers are applying on-farm and off-farm climate-smart techniques to their own livelihood activities including farmers not involved in the project-supported training events.**

The results in table 1 and 2 above and figure 5 portray different practices that farmers are currently implementing in their farm as on-farm and off-farm C3S techniques to their livelihood. Table 3 and 4 below show male and female from the study villages who implement C3S agriculture practices in their farm.

Table 3 Men's response on C3S agriculture practices that they apply in their farm (n = 37)

| C3S Practice | Apply | Do not apply |
|-----------------------------------|-------|--------------|
| Irrigation agriculture | 11% | 89% |
| Terracing | 43% | 57% |
| Minimum tillage | 35% | 65% |
| Crop rotation | 22% | 78% |
| Crop cover | 35% | 65% |
| Mulching | 30% | 70% |
| Land fallowing | 19% | 81% |
| Herbicides use | 3% | 97% |
| Downhill and uphill trenches | 11% | 89% |
| Mixture cropping | 27% | 73% |
| Pesticide use | 3% | 97% |
| Proper application of nutrient | 3% | 97% |
| Extension of crop rotation | 3% | 97% |
| Clearing forest to open new field | 14% | 86% |
| Application of fertilizers | 49% | 51% |

Table 4 Female's response on C3S agriculture practices that they apply in their farm (n = 33)

| C3S Practice | Apply | Do not apply |
|-----------------------------------|--------------|---------------------|
| Irrigation agriculture | 12% | 88% |
| Terracing | 39% | 61% |
| Minimum tillage | 24% | 76% |
| Crop rotation | 36% | 64% |
| Crop cover | 30% | 70% |
| Mulching | 18% | 82% |
| Land fallowing | 30% | 70% |
| Herbicides use | 0% | 100% |
| Downhill and uphill trenches | 12% | 88% |
| Mixture cropping | 21% | 79% |
| Pesticide use | 9% | 91% |
| Proper application of nutrient | 6% | 94% |
| Extension of crop rotation | 3% | 97% |
| Clearing forest to open new field | 9% | 91% |
| Application of fertilizers | 58% | 42% |

An assessment of the application of C3S agriculture techniques between female and male, figure 23 shows that more women are applying C3S as compared to men.

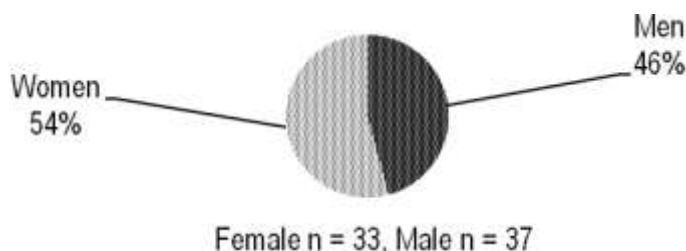


Figure 23: Male and female applying C3S agriculture practices in their farms

2. Small-scale farmers in project villages are advocating elected representatives and government officers for improvements in governance in relation to land, natural resources and agriculture

When farmers were asked on whether they have managed to advocate elected representatives and government officers for improvement in governance in relation to land, natural resource and agriculture, 37% of them reported to have advocated while 63% of them reported to have not done (figure 24).

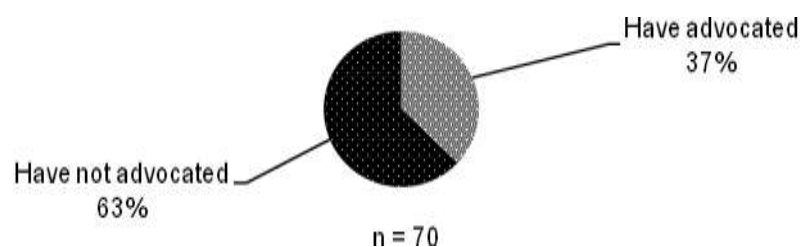


Figure 24: Farmers' responses on advocating for governance of natural resources from elected officials

3. Small-scale farmers from project villages are building the capacity of farmers from other villages and districts on C3S agriculture, REDD+ and sustainable land and natural resources management

The assessment of whether farmers from project villages have built capacities of other farmers from non-project villages on C3S agriculture, REDD and sustainable land and natural resources management unfolded that currently it is 51% of the farmers have managed to build capacities of other farmers from non-project villages and 49% of them have not managed to build that capacity (Figure 25).

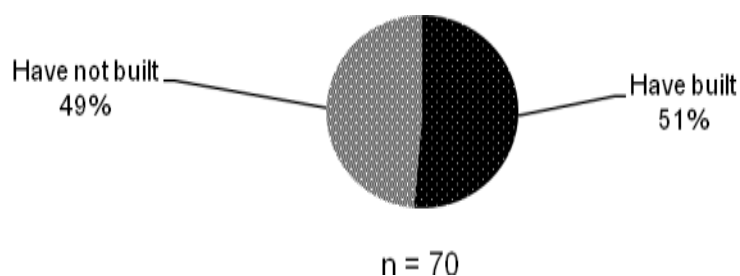


Figure 25: Farmers' responses on whether they are building capacities of other farmers from non-project villages

When those who reported to have built capacities of other farmers from non-project villages were asked on kind of capacities they have managed to build, they mentioned different practices as shown in table 5 below

Table 5 Farmers' responses on kind of knowledge and skills support they have provided to other farmers in other villages

| Type of Practice/technique disseminated | Percentage |
|---|------------|
| Fertilizer (manure) application | 18% |
| Do not use fire in farm preparation | 27% |
| Ploughing by draught animals (oxes) | 6% |
| Use of improved seeds | 12% |
| Proper seedling spacing | 6% |
| Planting in lines | 8% |
| Slash and leave weeds to decay | 6% |
| Early farm preparation | 8% |
| Basin farming/pitting | 4% |
| Pest control | 4% |

| | |
|---------------------------|----|
| Stop shifting cultivation | 2% |
|---------------------------|----|

Output makers: Love to see

1. Small-scale farmers from non-project villages adopt climate smart agricultural technologies using the experiences and guidelines shared by the project.

The study assessed whether other farmers from non-practical villages has adopted C3S agriculture practices by asking farmers in the project villages if the know any farmers out of the farm field schools who has adopted it. All farmers (n=70) admitted that they do not know any farmer outside the project villages that have already adopted C3S agriculture. However, 44% of the respondents admitted that they know farmer outside the farm field schools who has adopted C3S agriculture practices while 56% said they do not know (Figure 26)

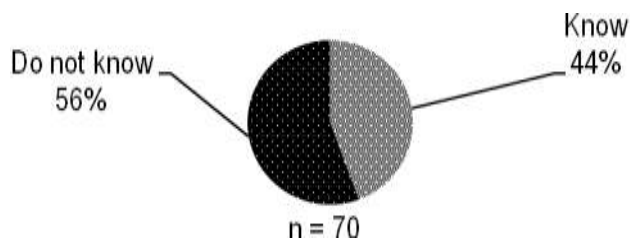


Figure 26: Framers’ responses on whether they know farmers who have adopted C3S agriculture practices out of the farm field schools.

When these farmers were asked on the number of other farmers that have adopted C3S agriculture out of the farm field schools, majority of them mentioned above three (3), as shown in figure 27 below:

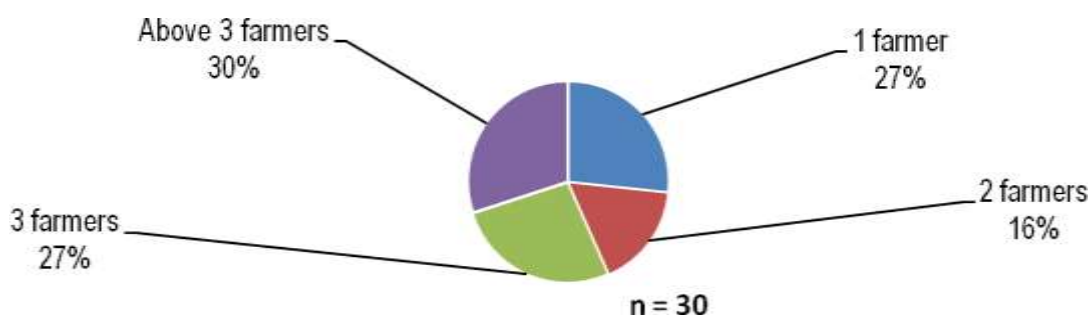


Figure 27: Farmers responses on number of farmers out of project villages that are known to have adopted C3S agriculture practices.

Most of the farmers who have adopted C3S agriculture outside the farm field schools were found to be the family members (37%) and neighbors (63%) of the farmers who have participated in the C3S trainings as indicated in figure 28 below.

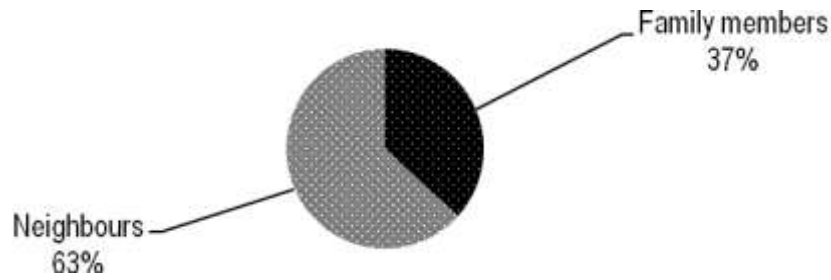


Figure 28: Farmers' responses on the relationship of those farmers outside farm field schools that have adopted C3S agriculture practices.

3. Small-scale farmers actively engage with their local MJUMITA and MVIWATA networks to lobby for more support for C3S agriculture, REDD and sustainable land and natural resources management.

This current study has found that out of the interviewed 70 small scale farmers, it is 10% of them who reported to have engaged with either MJUMITA or MVIWATA local area network (Figure 29). When they were asked on how they did engage with these networks, they reported different reasons that are as shown in figure 30 below.

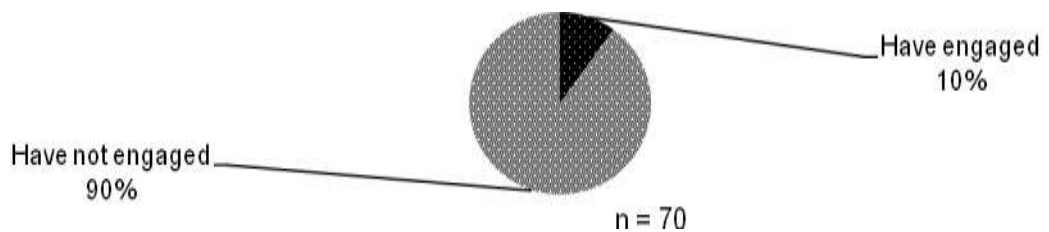


Figure 29: Farmers' responses on whether they are engaging with MJUMITA and MVIWATA networks

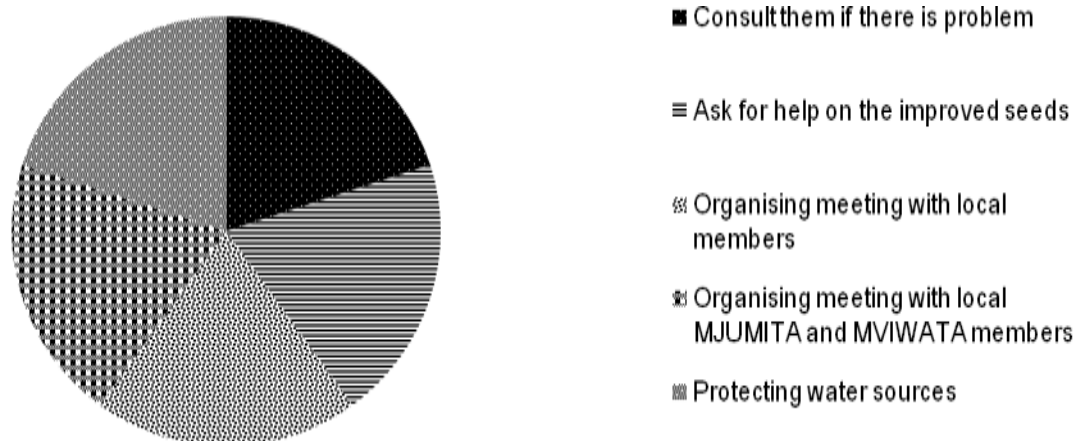


Figure 30: Farmers' response on how do they engage with MJUMITA and MVIWATA networks

4.2.2 District officials

Output makers: Expect to see

1. District Officials participate in awareness raising events about Climate Change, REDD and Agriculture.

The project underscores the importance of the district officials to participate actively on awareness raising for climate change, REDD and agriculture. This survey unfolded that both Kilosa and Chamwino agricultural officials (n=2) are participating in climate change and agriculture awareness raising events including meetings and even in farm to farm campaigns. However, with regard to REDD awareness raising events only the Kilosa agricultural officer reported to have participated. Comparing this observation with the baseline scenario there is an improvement due to the fact the baseline study reported that the Kilosa agricultural officer has not participated in REDD awareness events.

2. District officials integrate climate friendly agriculture in their DADPs where external support is provided.

Through interviewing the agricultural officers (n=2) in both districts the present study observed that in both districts the agricultural officials are willing to integrate climate friendly agriculture in their DADPs. It was further mentioned that climate friendly agriculture practices are being integrated in the current DADPs of these districts. Practices that were mentioned to be integrated in both DADPs include sensitization for uses of improved seeds and selling of value added crop harvests, enhancement of appropriate soil and water management techniques and discouraging the use of fire in farm preparations. Moreover, promotion of minimum or no tillage practice was reported only in Chamwino district and inclusion of efforts to discourage shifting cultivation was reported only in Kilosa district.

3. District Officials support integration of community plans in DADPs where external support is provided.

Through interviewing the agricultural officers (n=2) in both districts this study established that officials in both districts are willing to integrate community plans in their DADPs. It was further exemplified by Kilosa agricultural officer that two community plans from Ilonga and Mvumi villages that are aiming at improving traditional irrigation scheme have been included in the current DADPs. However, this finding is contrary to what was established in the baseline study that neither Kilosa nor Chamwino district was supporting integration of external supported community plans in DADPs. Rather district official said community plans are always integrated in DADPs by using the O&OD (opportunity and obstacle to development) methods.

Output makers: Like to see

1. District Government are providing DADP guidelines that include issues of climate-friendly agriculture and gender to all wards and villages in a timely manner; are ensuring that the ward and village level facilitation teams are developing plans that adequately support climate friendly agriculture; and these are properly reflected in the District level plans and are then implemented.

The findings of this study concurred to that of baseline study which also reported that gender issues are being integrated in almost any agricultural development initiatives. Engenderment of agriculture was emphasized by the district officials that do accord with Tanzania Agricultural Policy that calls for equal involvement of women and men in all efforts towards agriculture development. In which, it was mentioned that in both districts gender consideration are emphasized during selection of individuals for participation into different agricultural development initiatives including trainings, planning, decision making and project implementations. The problem of delayed delivery of DADP guidelines and even facilitation of ward and village facilitation teams in developing plans that was reported during baseline survey was hitherto found to exist in both districts.

2. District government are raising awareness about climate change, climate-friendly agriculture and gender amongst communities in their districts.

During this survey among the two agriculture officials, only the Kilosa agriculture officer admitted that his district has clear plans for raising awareness about climate change, climate-friendly agriculture amongst the communities. In which, it was mentioned that the information is communicated to the community through various means including organizing village meetings, video shows, radio programs and supplying of displaying printed materials. However, the Chamwino agriculture officer admitted that there are no clear plans for raising awareness about climate change he underscored the fact that the district has a tendency to organize village meetings prior to growing season to educate farmers on improved agricultural practices, whilst sparsely touching climate related issues. This observation concurred to the findings that were reported in the baseline study report.

Output makers: Love to see

District government are supporting communities to implement actions that will reduce deforestation and are assisting communities to access REDD finance.

The district officials from both districts stated that they are supporting the communities towards reduction of deforestation rate. In which, in Kilosa it was reported that there has been a campaign to condemn unplanned clearing of forests for opening new farms. In which, it was mentioned that the district is keen towards improvement of irrigation structures that will enable farmers to produce adequate food in their own fields and conserve catchments that are often cleared for opening new farms. In Chamwino, it was mentioned that communities are being trained on proper farm preparations through discouraging use of fires, trained on how to use chisel ox driven ploughs, as well as conducting soil tests in order to ensure that communities are properly advised regarding which nutrients to replenish so as to avoid farm abandonment due declined crop yield resulted from soil infertility.

Contrary to the baseline survey some initiatives such as patrolling of reserved areas and tree planting were not raised perhaps because only agricultural officials were consulted during this survey, unlike the baseline survey that consulted forest and natural resources officials as well. Regarding REDD, the district officials in Chamwino admitted that no REDD initiatives that are going on in Chamwino, and thus validating this observation to concur with baseline survey findings that found no any effort that are being taken to help famers to access REDD finance in Chamwino district. However, in Kilosa this survey similarly to the baseline study found out that the presence of REDD initiative and establishment of relationship between District council and TFCG/MJUMITA CSOs has made the efforts to assist REDD finance more active in Kilosa. Moreover, no example of the community/village that has managed to secure REDD funds (benefits) in Kilosa was given.

4.2.3 Ward councillors

The Chilonwa ward councillor in Chamwino district and Lumuma ward councillor in Kilosa district together with village chairpersons from all six (6) CCAP project villages were interviewed aiming at capturing information with regard to knowledge on climate change and C3S. As well as, how they help the small scale farmers to adopt climate smart small agriculture in their respective jurisdictions. Of the two ward councillors, the Lumuma ward councilor was a female and had attained secondary education. The Chilonwa ward councillor was a male and educated up to a primary education level.

Output makers: Expect to see

1. Elected representatives participate in awareness raising days and stakeholder meetings on small-scale agriculture and climate change when external support is provided

The ward councillors for both Chilonwa and Lumuma wards stated they have participated in awareness raising events and stakeholder meetings on small-scale agriculture and climate change. The situation in Chilonwa is converse to what observed during the baseline survey in which the ward councillor stated that he has never participated in any awareness raising event with regard to climate change and C3S agriculture before the CCAP project. Also, similarly to what observed in the baseline survey the Lumuma ward councillor stated that she has been collaborating with MJUMITA and TFCG in their REDD project in Kilosa and in that cooperation, they have been able to participate in agriculture and climate related awareness raising events and meetings organised by REDD project in Kilosa. Moreover, the Chilonwa ward councillor declared that the ongoing CCAP project has given him an opportunity to gain more awareness on climate change and environmental friendly agriculture and conveyed his will to participate further on awareness raising events whenever external support provided.

Output makers: Like to see

1. Ward Councillors and Village council members push for DADPs to integrate support for small scale, climate smart agriculture.

The Lumuma ward councillor stated that she is making effort to push for DADPs to integrate support for small scale, climate smart agriculture. This was contrary to the baseline scenario where both Lumuma

and Chilonwa ward councillors admitted not to make any efforts towards pushing DADPs to integrate C3S. However, currently the situation was still similar for Chilonwa ward council who also admitted not make any efforts to push for DADPs during baseline survey. It was further reported that both of the two ward councillors do call for support from the district to their farmers especially for on time provision of seeds for higher yielding drought resistant crop varieties. Moreover, they declared that the ongoing CCAP project is an eye opener to them with regard to climate change and environmental friendly agriculture. In which, they stated that they will keep on pushing for C3S through their council meetings and other meetings that they hold with district agricultural officials.

2. Ward councillors push District Officials to expedite and prioritize support for small-scale farmers in the implementation of DADPs.

The current study findings concurred with what was reported in the baseline survey that “to some extent the interviewed ward councillors, at least everyone had made some efforts to push district officials to expedite and priorities support for small-scale farmers”. However, it was reported that they have feelings that the DADPs are not effectively implemented as sometimes some resources such as seeds and fertilizers are not delivered in time to the small scale farmers. Thus, they have been pushing the district officials to make sure that they rectify these shortfalls.

Output makers: Love to see

Elected leaders monitor and follow up on the implementation of national policies and laws relating to small-scale farmers and climate change adaptation and mitigation.

In agreement to the baseline survey both two ward councillors were still unaware of the details of the policies and laws relating to small-scale farmers and climate change adaptation and mitigation. However, the Lumumi ward councillor conveyed her willingness to learn more in order to smoothing the process of formulation of bylaws for environmental conservation at her ward. The Chilonwa ward councillor expressed his interest for participating in advocating for national policies and laws if external support is provided to him, for example policy summaries or briefs written in simple languages.

4.2.4 Elected village representatives

The project considers elected village leaders to have significant influence on achieving the goal and objectives of the CCAP initiatives but anecdotally that these elected representatives often lacks awareness on the CCAP issues and some opportunities involved in the CCAP initiative. This study elucidated this information and compares it to the situation during baseline survey that assessed levels of awareness of village council members on climate change, climate change adaptation and whether they understand the linkage between climate change, agriculture and poverty. This survey interviewed six (6) village chairpersons, one from each CCAP project village, of the interviewed elected village leaders none was a female. All interviewed village chairpersons had attained education to a level of primary education (standard seven). The present study has come out with the following results.

Awareness of climate change issues

About the meaning of climate change

The survey found out that all elected leaders were aware of the presence of climate change (have heard of climate change). It was further revealed that 100% of them described climate change as change in rainfall intensity and patterns. Moreover, 87.5% and 25% of the leaders mentioned change in temperature and wind patterns respectively as their major indicator of climate change. However, none mentioned change in cloud condition as implication of climate change; of which is contrary to the baseline situation where about 4% of the elected village representatives pointed out change in cloud condition as implication of climate change (Figure 31).

Upon comparing these findings with those of the baseline study which established that most of the village council members in both Kilosa and Chamwino districts had some knowledge of climate change. In which, 85% of the interviewed village leaders stated that they have heard about climate change whilst 15% reported that they had not heard about climate change. This implies that the understanding of climate change issues amongst the elected village representatives has improved significantly.

Furthermore, upon doing village wise comparison of the knowledge of the elected village representatives from both Chamwino and Kilosa districts, it was revealed that temperature and rainfall are still most cited indicators or parameters that when changes to them it implies climate is changing (Figure 32). However, contrary to the baseline survey this time change in wind patterns as description of climate change was raised only in Chamwino district.

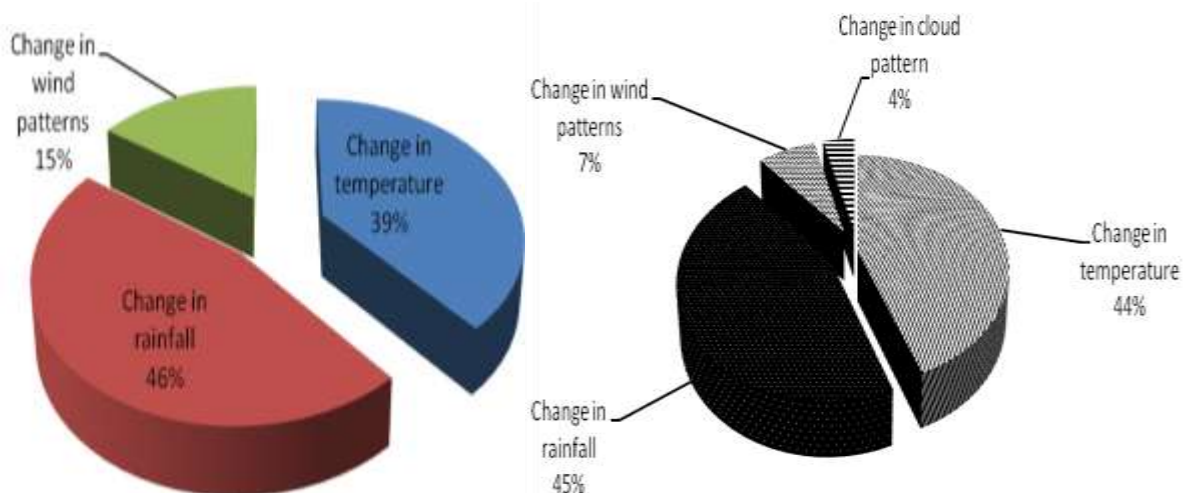
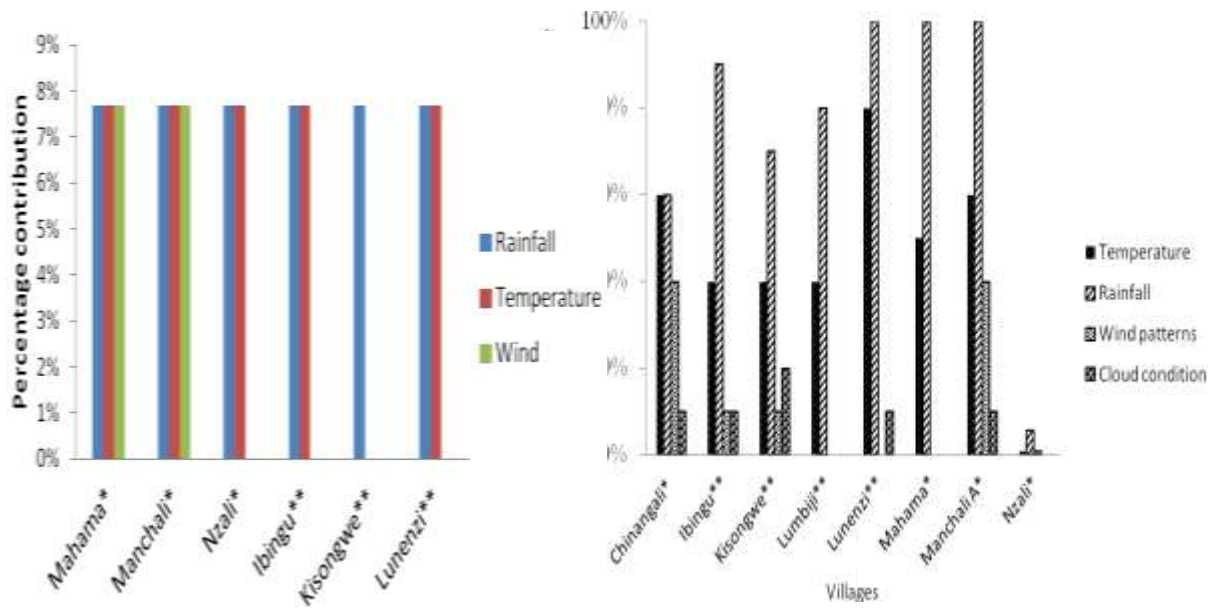


Figure 31: Showing village elected representatives' response of how they describe climate change, LHS village chairpersons (6) during monitoring survey and RHS village council members (n = 80) during baseline survey for both Chamwino and Kilosa districts.



Note: * Chamwino study villages ** Kilosa study villages

Figure 32: Village wise comparison of village chairpersons' and council member's responses at village level on how they describe climate change (LHS figure for this study and RHS for baseline scenario).

About causes of climate change

This survey found out that 100% of the elected leaders mentioned deforestation as amongst of the major driver of climate change within their locality. This was followed by inappropriate agricultural practices and pollution from power generation (50% each), charcoal making, shift cultivation and destruction of water sources (17% each) as causes of climate change (Table 6).

The findings of the present study also conform to what was found during the baseline study that the village council members in the study areas are aware of deforestation (89%). Burning of forests (25%), and emission from agriculture activities (8%), emission from industries (9%) and power generation (4%), pollution from vehicles (3%) and waste disposal (5%), cultivating in water sources (4%) among others . However, during this study emission from waste disposal and forest burning that was raised during baseline study was not mentioned. The consistent outstanding of deforestation as the major driver of climate change in both baseline and monitoring survey implies that loss of forests is a topical issue in both districts.

Table 6. Elected village representatives' responses on the causes of climate change in the study villages

| Causes of climate Change | Ibingu** n=1 | Kisongwe** n=1 | Lunenzi** n=1 | Mahama* n=1 | Manchali A* n=1 | Nzali* n=1 | Overall n=6 |
|---------------------------------|-------------------------|---------------------------|--------------------------|------------------------|----------------------------|-----------------------|------------------------|
| Deforestation | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Pollution from vehicles | 0% | 0% | 0% | 0% | 0% | 100% | 17% |
| Emission from industries | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Pollution from power generation | 0% | 100% | 0% | 0% | 100% | 100% | 50% |
| Waste and waste products | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Agriculture activities | 100% | 100% | 0% | 100% | 0% | 0% | 50% |
| Cultivating in water sources | 0% | 0% | 20% | 0% | 100% | 0% | 20% |
| Charcoal making | 0% | 0% | 0% | 0% | 0% | 100% | 17% |
| Shifting cultivation | 100% | 0% | 0% | 0% | 0% | 0% | 17% |

About the impacts of climate change

During this survey about 83% of the interviewed elected leaders pointed out gradual reduction in crop yields as the major impact of CC to their agrarian communities; this was attributed to increased droughts (33%), as a result of decrease in rainfall. Drying of surface water resources (50%) was also reported in both districts whilst high recurrence of floods was reported only in Kilosa district (33%). Furthermore, 17% reported increase in diseases occurrences for both plants and animals due to climate change. Moreover, none attributed loss of species as a result of climate change within their locality (Table 7).

Upon comparing above findings with the baseline survey which reported that the village leaders stated that climate change is having a major effect on crop yields (71%), followed by disease (35%), drying of water courses (34%) and increased drought (34%). Additionally, increase in flood incidents (28%) and loss of plant and animal species ranked last (34%). Thus, upon comparing the findings of the former baseline study and this monitoring survey, change in crop yields was ranked the highest in both studies.

Table 7. Village council members' responses on the impacts of climate change in study villages

| Impacts of climate change | Ibingu** n=1 | Kisongwe** n=1 | Lunenzi** n=1 | Mahama* n=1 | Manchali A* n=1 | Nzali* n=1 | Overall n=6 |
|-----------------------------------|-----------------|-------------------|------------------|----------------|--------------------|---------------|----------------|
| Flood | 100% | 0% | 100% | 0% | 0% | 0% | 33% |
| Change in crop yield | 100% | 0% | 100% | 100% | 100% | 100% | 83% |
| Drying out of water sources | 100% | 0% | 0% | 100% | 100% | 0% | 50% |
| Disease eruption | 0% | 0% | 100% | 0% | 0% | 0% | 17% |
| Drought | 0% | 100% | 0% | 100% | 0% | 0% | 33% |
| Loss of animal and plants species | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

Note: * Chamwino villages ** Kilosa villages

Awareness of climate change adaptation

The study found out that all the elected village leaders (100%) were aware of climate change adaptation and they ranked improved agriculture first (35%), followed by forest conservation (30%) as the key management techniques to deploy towards enabling the communities to adapt to climate change effects. In addition, appropriate management of water resources (17%) was also highly pointed out. However, still there are some leaders who mentioned bad practices particularly deforestation (13%) and shifting cultivation (4%) as amongst of the means for adapting to climate change impacts within their communities (Table 8). Moreover, in contrast to baseline survey none of the leaders mentioned the importance of appropriate land tenure as amongst the means to empower smallholder farmers to adapt to climate effects.

The higher awareness level is in converse to what was found during baseline survey in which only 32% of the village council members were aware (have heard) of climate change adaptation before implementation of CCAP project. Implying that there has been awareness raising events on climate change adaptation that have taken place after the baseline survey.

Table 8. Climate change adaptation techniques and practices with accordance to the elected village leaders in CCAP project villages

| CC Adaptation techniques | Responses | Percent |
|--|-----------|-------------|
| Deforestation | 3 | 13% |
| Forest conservation | 7 | 30% |
| Improved agriculture | 8 | 35% |
| Appropriate water resources management | 4 | 17% |
| Shifting cultivation | 1 | 4% |
| Total responses | 23 | 100% |

Awareness of the link between climate change, agriculture and poverty

It was observed that most elected leaders (87.5%) understand the linkage between climate change, agriculture and poverty. In which, they generally elucidated that climate change affects agriculture negatively culminating to reduced food production and increased poverty.

Upon comparing the current findings with the baseline study results which indicated that 50% of interviewed village council members were aware of the link that exists between climate change, agriculture and poverty alleviation before CCAP project. It shows currently the awareness level has increased in both districts. However, the village chairperson for Ibingu village was the only leader that was found to be less informed of the linkage.

Output makers: Expect to see

1. Elected representatives participates in awareness raising days and stakeholder meetings on small scale agriculture and climate change when external support is provided

All the village chairpersons in both Kilosa and Chamwino expressed their willingness to participate in awareness raising days and stakeholder meeting about C3S agriculture and climate change when external support is provided. When they were asked if they have ever participated in such awareness and meetings, 87.5% of them reported to have participated whereas 12.5% of them reported to have not participated. Indicating that more training opportunities has emerged since baseline survey was conducted, as at the time of baseline only 38% stated that they have participated and majority (62%) reported to have not participated

Some of the reasons that were put forward by those who have not participated were being occupied with other businesses at the time of those trainings or someone else from the same village represented the village chairperson in those meetings. Table 9, below shows the various issues/topics that were covered during those climate change awareness raising meetings in both Kilosa and Chamwino districts.

Table 9. Issues that were covered to elected village representatives at village level who reported to have participated in climate change and climate smart small scale agriculture

| Issues covered in C3S awareness raising | Study villages | | | | | | Overall Villages n=6 |
|---|----------------|----------------|------------------|-----------------|--------------------|---------------|-------------------------|
| | Mahama* n=1 | Ibingu* n=1 | Kisongwe* n=1 | Lunenzi* n=1 | Manchali A* n=1 | Nzali* n=1 | |
| Basin farming | 0% | 100% | 100% | 0% | 100% | 0% | 50% |
| Uphill and downhill ridges | 0% | 100% | 100% | 100% | 0% | 0% | 50% |
| Use of good agriculture practices | 100% | 0% | 100% | 0% | 100% | 100% | 67% |

| | | | | | | | |
|-----------------------------------|------|------|------|------|------|------|-----|
| Tree planting | 0% | 0% | 0% | 100% | 100% | 0% | 33% |
| Terraces | 100% | 0% | 0% | 100% | 0% | 100% | 50% |
| Stopping bushfire | 0% | 100% | 0% | 0% | 0% | 100% | 33% |
| Stop destruction of water sources | 100% | 0% | 100% | 0% | 0% | 0% | 33% |
| Stop shifting cultivation | 100% | 0% | 100% | 0% | 100% | 0% | 50% |
| Average | 50% | 38% | 63% | 38% | 50% | 38% | |

Note: * Chamwino project villages ** Kilosa project villages

Output makers: Like to see

Ward councillors and village council members push for DADPs to integrate support for C3S agriculture

Similarly to the baseline study the current study has revealed that the elected village representatives do not push incorporation of C3S agriculture in DADPs. Furthermore, similarly to the baseline study the interviewed village leaders revealed that they have not done it due to inadequate knowledge on C3S agriculture and though some declared to have happened to attend some training, they testified that they are yet to understand C3S full and they need more training.

However, those who stated that they have demanded earlier delivery of DADPs projects from district to village were higher in this study than in the baseline study. In which 50% (n=6) of the interviewed elected village representatives specifically from Mahama, Ibingu and Lunenzi villages stated that they are pushing district agricultural officials to deliver DADPs project services and goods earlier prior to the coming farming season. This is an improvement with comparison of only 30% (n=80) of the village council members who reported to have made demand for early delivery of DADPs projects from the district to the village during the baseline study.

5.0 DISCUSSION

5.1 Small scale farmers

5.1.1 Support to farmers to add value to their agriculture produces

The results of the baseline study indicated that 68% of the farmers in Chamwino and 2% of them from Kilosa reported to have received support from districts to adopt climate smart small scale agriculture. This current study has indicated that after the project intervention, there has been an increased support for farmers to adopt more climate smart small scale agriculture. As indicated in this study, it is 82% of the small scale farmers in Chamwino who reported to have received support for adoption of climate smart small scale agriculture and 27% of them from Kilosa study villages. This is equivalent to an increase of 14% of support provided to small scale farmers in Chamwino and 25% to farmers in Kilosa.

The baseline also showed that farmers were supported with i. provision of practical information on how to adapt to climate change impacts; ii. Training on soil and water conservation; iii. Support for irrigation infrastructure; and iv. Provision of drought resistant crops. Of these, the provision of drought resistant seeds was the most frequently cited. However, the situation is quite different at this time as the study was able to find seed and fertilizers as the main supports provided by the two districts to farmers to adopt more climate smart small scale agriculture. Seeds were highly ranked as supports provided to farmers in both two districts as compared to fertilizers.

5.1.2 Best practices in climate smart, small-scale agriculture

There is higher number of farmers who are currently applying C3S agriculture practices in their farm as compared to when the baseline study was conducted. The baseline study reported 20% of the interviewed farmers to apply C3S in their farm which is contrary to this study that has reported 94% of them. Those who reported not to apply C3S agriculture in this study, mentioned number of reasons which are delayed delivery of seeds whereas others pointed to have just received the training and having no knowledge about C3S. There is more of the same C3S agriculture practices that are currently applied by small scale farmers as those reported in the baseline study. The difference is made on the number of percentages of farmers applying those particular practices. In this study, more farmers are applying individual C3S agriculture technique than during the baseline study. Specifically in this study the use of fertilizer, crop cover, terrace, crop rotation and minimum tillage was highly ranked in Chamwino study villages compared to tree planting, pesticide application, and fallowing, mulching and irrigational agriculture. This is an indication that more adoption of C3S agriculture practices has been brought by the intervention of the CCAP project in the study area.

5.1.3 Learning and integration of C3S agriculture practices in farmers' farms

The baseline study did report that there was no any farmer who by that time had learned about C3S agriculture in Chamwino study village and that only 10% of the interviewed farmers in Kilosa has learned about C3S. There has been a remarkable change on this whereas in the entire study village the study has found that 94% of them have learned at first-hand about C3S agriculture. This is attributed to different trainings that has been organised by the CCAP project in the study area as well as other good agriculture practices advocates in the area. This is accredited to different authorities that were declared by small scale farmers to have received these trainings from. Many of them are those which are involved in CCAP project. As described above, there has been a pronounced adoption and or integration of C3S agriculture in farmers' farms that demonstrate the impacts of the CCAP project in the study area. However, efforts are still needed to promote these practices as some of them have low counts specifying that they have been only implemented by few of the famers. So as to bring the impacts foreseen by the project number of C3S agriculture practices being implemented will not matter but on numbers of famers of farmers who are applying an individual C3S agriculture practices.

5.1.3 Practical information to farmers on measures to take to improve climate change resilience

During the baseline study, it was 20% of small scale farmers who had received practical knowledge on measures they could take to withstand will climate change impacts. In Chamwino and that 17% of them were from in Kilosa. This study has found that after CCAP project interventions, 95% of famers in

Chamwino are now receiving practical information on measures they can take to withstand with climate change impacts and 97% of them from Kilosa study villages. This points out that the CCAP project has made this information available to farmers as compared to the situation when the project was not there. This is as shown in figure 9 above where those who reported to have received information from central government and district was very few as compared to those who reported from NGOs. In most cases the NGO that were mentioned are TOAM, TFCG and MJUMITA and some farmers just mentioned staffs from the same NGOs. This patently confirms that the information on practical information that farmers can take to increase their climate change resilience is from CCAP project.

5.1.4 Output markers: Expect to see

Trainings and awareness raising events related to climate change, climate smart small-scale agriculture, land tenure, microfinance and REDD.

During the baseline study, it was 9% of the famers that had attended training on climate change and that over 90% of them had not attended climate change training. The existence of the CCAP project in the study villages has brought changes on climate change trainings to farmers whereby at the moment it is 93% of the farmers who have been trained on climate change. This gives a clue that currently majority of the famers understand what climate change is, its cause and impacts. This is very important information to be acquired by the farmers when efforts are thought to address climate change in the study villages. The more the famers are made aware of their contribution in climate change and the impacts that it brings to them, the more they can address it. On the flip side, the project advocates C3S agriculture as a way for famers to adapt to climate change. The baseline study did report that 10% of farmers from Kilosa study villages had attended C3S agriculture training and that it was 90% of the famers who had not attended C3S agriculture training while there was no any farmer in Chamwino who testified to have attended C3S agriculture training. As for the climate change, there is larger number of farmers who have attended C3S agriculture training in both Kilosa and Chamwino district. The reported 90% of famers to have attended C3S training in Chamwino is real a noteworthy change as compared to when the baseline study was conducted where no one had this kind of training. On the other hand the situation after the project intervention in Kilosa has manifested where all of the farmers have this kind training. However, frequent awareness about the practical application of the training to this group of communities is always recommended. There is a difference on famers who have attended land tenure training as to the above mentioned training in this study. Fewer farmers have attended land tenure training (41%) when comparison is made with the climate change and C3S agriculture. Nevertheless, it is more famers that have attended this training as compared with the results of the baseline study (6%). Although the mentioned bodies that have offered this training some of them are CCAP partners, the low number of famers who have participated in this training may be ascribed to the CCAP partners not to be much advocating land tenures as compared to agriculture and conservation issues. Since it was anticipated to be achieved in the project, more efforts are needed to raise its awareness among communities in the study villages.

Microfinance as an alternative income generating initiative is one of the advocated activity in the CCAP project. During the baseline study, it was 5% of the interviewed farmers who had microfinance training and that 95% of them did not have microfinance training. This situation has a bit improved whereby of current 36% of the small scale farmers testified to have received microfinance trainings and that 64% of

them have not received microfinance training. When farmers have different livelihood options, it helps to increase their resilience to climate change. As such microfinance trainings and support as per the results of this study need to be more supported to bring more changes to farmers as compared to the current situation. Training only does not bring an impacts but application of the practices. Though application of or involvement of farmers in microfinance initiatives was not assessed, the 36% of farmers who reported to have attained microfinance training also indicate that fewer of them are applying the practices. The CCAP therefore need to make more effort to support for microfinance to farmer for to bring it's though changes to small scale farmers' livelihoods. Reduced emission from deforestation and degradation is one of the foreseen livelihood initiatives by the CCAP project to small scale farmers in the project villages. The baseline study reported 6% of farmers to have attended REDD project and that 94% of them in them had not attended any REDD trainings. This study has unveiled that currently 36% of farmers have attended REDD training and that it is 64% of them who have not. Given its importance as one of the issue raised to be promoted by the project there still more effort to raise its awareness and perhaps its implementation in the study villages as currently the situation signifies that the training has not much being implemented in the study villages.

5.1.4 Output makers: Like to see

Applications of C3S agriculture practices by both women and men in the project supported villages and non-project villages

As pointed above, training of famers on good agriculture practices does not matter a lot as when these practices are also implemented in the field. The baseline study reported application of C3S agriculture practices by both women and men in the project villages and in non-project villages. Most of the practices that were reported were improved seeds, drought resistant crops, traditional irrigation practices, use of terraces, use of perennial crops, crop rotation, use of cover crops, minimum tillage, land fallowing, weed control, use of farm yard manure and uphill and downhill trenches. As the baseline study did report, farmers (both men and women) in this study admitted to have applied the same practices in their famers. The difference is made on the level of application of those techniques. There have been an increased number of men and women who are applying C3S practices as compared to the baseline study. This is also ascribed to the presence of the CCAP project in the study area.

Small scale farmers are advocating elected representative and government officers for improvement in governance in relation to land, natural resource and agriculture.

Elected officials and government officers are meant to serve for the people they are there for. However, people are always advised to advocate these elected officials for their good governance not only in natural resource management but also in other social related issues. The baseline study reported that only 16% of the interviewed farmers were advocating elected officials for their good governance and that 84% of them were not. After the CCAP project intervention in the area, 37% of the famers are now advocating elected officials for improved natural resource governance whereas 63% of them do not. This has perhaps being changed by the CCAP project in the study areas as it was revealed by one project officer in Kilosa that it is one of the issue that they have been encouraging farmers to do. Though there is significant increase of the farmers who are advocating elected officials for good natural resource governance still more efforts are needed to educate them on its importance and the way how

to do it. It was revealed in the study that some of the farmer reported to be intimidated by these elected officials once they demand good service from them. Governance and leadership training or awareness raising to this group of community is needed to change the current existing situation.

Small-scale farmers from project villages are building the capacity of farmers from other villages and districts

The results of the project when spreading to other villages from the project villages bring more impacts at large. This can either be achieved through farmers in the project village building capacities of other farmers in the non-project villages. The baseline study assessed whether farmers in the project villages are building capacities of other farmers in the non-project villages and found that 15% of the interviewed farmer from the project supported villages were offering support to other farmers from the non-project supported villages on C3S agriculture and natural resource management. On the other hand no any farmer reported to have supported non-project village farmers with REDD supports. This study as indicated above in the result shows that there has been an increase on farmers from project supported villages to support other farmers in non-project villages from 15% in the baseline to 51% at this end. However, as in the baseline study, the mostly issues supported by project village farmers to non-project village farmers are C3S agriculture practices and natural resource management. No REDD knowledge is supported to other farmers from the project villages.

5.1.5 Output markers: Love to see

Small-scale farmers from non-project villages adopt climate smart agricultural technologies using the experiences and guidelines shared by the project.

The baseline study reported that at that time there was no any famer in the non-project village who had adopted technologies or practices from the project support villages. But it did report that it met one farmer from Lumbiji which is a non-project village who reported to have attended C3S agriculture practices in Kisongwe village. This study show a notable change of farmers from non-project village to adopt practices learned from the project villages. This current study as indicated above observed 44% of farmers in the project village who know famers from non-project villages who have adopted C3S agriculture practices from the project supported villages. But in most case these farmers are relatives of the farmers from the project villages and neighbours. This is an indication that CCAP initiatives will spread to other villages in future as farmers in the project villages continue to practices the learned C3S agriculture practices.

Small-scale farmers actively engage with their local MJUMITA and MVIWATA networks to lobby for more support for C3S agriculture, REDD and sustainable land and natural resources management.

MJUMITA and MVIWATA networks since are grassroots based, when small scale famers engage with them can help to bring more impacts as far as agriculture, climate change and forest conservation is concerned. The baseline study reported that 10% of the interviewed farmers were engaging with MJUMITA and MVIWATA networks and that 90% of them were not. This was also attributed to some of the farmers to have not heard about the two networks but also the networks to have not started

operating in the study area. At this time it is still 10% of the farmers who are engaging with MJUMITA and MVIWATA local area networks and 90% of them do not. The mostly cited reason of not engaging with them is as during the baseline study that some of them do not know these networks and the networks has not started operating in the area. It is therefore recommended that these networks need to increase their activities in the study areas so as to help them to adopt C3S agriculture but also helping them to solve different problems. For example in both Kilosa and Chamwino farmers were complaining on crop pricing where the so called walanguzi (middle men) are the one who are deciding crop prices instead of the farmers who are the sellers. That they even come with their measuring equipment that has been fabricated and hence stealing farmers produces. MVIWATA are better placed to solve this problem. Their absence in the project village will continue promotion of that habit, that entirely do not benefit communities but rather exploit them.

5.2 District officials

5.2.1 Output markers: Expect to see

District Officials participate in awareness raising events about Climate Change, REDD and Agriculture.

As the survey unfolded that all agricultural officials are participating in both agriculture and climate change awareness raising events as part and parcel of their key responsibilities, involvement with REDD awareness raising events was reported only in Kilosa. This implies that the Kilosa agricultural officials have been participating to REDD awareness raising events owing to the fact that there is ongoing REDD project in his district, being implemented by TFCG/MJUMITA partnership. Furthermore, the Chamwino agricultural officer revealed the fact that he is very active in both agriculture and climate change awareness raising events as the district fall under semi-arid region that necessitates good agronomic practices and climate change adaptation measures for farmers to attain decent harvests. However, Chamwino agricultural officer conveyed his will to participate in REDD awareness events upon arise of opportunities.

District officials integrate climate friendly agriculture in their DADPs where external support is provided.

The current observations are found to be pervasive to the earlier findings in the baseline survey which reported that both Kilosa and Chamwino district officials were not integrating external supported climate friendly agriculture in their DADPs. However, in the current study Kilosa agricultural official reported that community plans are being included in DADPS. That might be attributed to external efforts that include the REDD project in Kilosa and the ongoing CCAP project in both Kilosa and Chamwino Districts. It seems that the findings of the baseline study might still be valid based on the fact that the officials were unable to provide adequate and robust evidences of actual integration of community plans. Lack of vigorous integration of community plans into DADPs of both districts might be due to the existing challenge of inadequate agricultural staffs and limited transport facilities that were raised by the district agricultural officials during this survey.

5.2.2 Output markers: Like to see

1. District Government are providing DADP guidelines that include issues of climate-friendly agriculture and gender to all wards and villages in a timely manner; are ensuring that the ward and village level facilitation teams are developing plans that adequately support climate friendly agriculture; and these are properly reflected in the District level plans and are then implemented.

Owing to the fact that both baseline and present survey unfolded that the DADPs guidelines are not delivered timely and the ward DADP facilitation teams are not effective. This implies that if efforts are not taken to raise the community awareness regarding their right to participate through contributing their ideas and needs for agricultural development through strong facilitation teams. Then, integration of C3S into the DADPs is doomed to failure. It also implies that the small scale farmers are yet keen to see their demands being integrated into the DADPs. This even questions how are the DADPs plans engendered if the poor agrarian communities are not full involved.

District government are raising awareness about climate change, climate-friendly agriculture and gender amongst communities in their districts.

Based on the fact only Kilosa agricultural officer reported that Kilosa district has clear plans for raising awareness about climate change, climate friendly agriculture and gender amongst the communities. Whilst, Chamwino district does not have clear plans for addressing these issues that implies that if the CCAP project is to succeed into empowering the communities to be knowledgeable on these issues. Work in close collaboration with the district officials and creating sustainable change of improved way for organizing awareness raising events for climate change compatible agriculture are unavoidable.

5.2.3 Output markers: Love to see

District government are supporting communities to implement actions that will reduce deforestation and are assisting communities to access REDD finance

As it was found only Kilosa district is supporting the communities to combat deforestation through REDD initiatives. However, no vivid example of a community group that has managed to secure the REDD money was given, presence of the REDD project was found to impart conservation attitudes such as community based forest patrols and conservation of catchment forests that was reported. However, efforts in areas where there is no REDD project like Chamwino also need to be undertaken if the CCAP project is to have outstanding outcomes.

5.3 Ward councillors

5.3.1 Output markers: Expect to see

Elected representatives participate in awareness raising days and stakeholder meetings on small-scale agriculture and climate change when external support is provided

The fact the ward councillors from both Chilonwa (in Chamwino) na Lumuma (in Kilosa) wards conveyed their will to participate in awareness raising events for small scale farmers and climate change upon provision of external support implies that the project is in a good chance to succeed. This is based on the fact elected representatives are most of the time highly respected and influential within their communities having their will to participate into awareness raising is deemed to bring a noticeable change in terms of both behaviour and practice of the small scale farmers towards C3S agriculture.

Ward Councillors and Village council members push for DADPs to integrate support for small scale, climate smart agriculture.

However, only the Lumuma ward councillor stated that she is pushing for DADPs to integrate support of C3S agriculture. Whilst the Chilonwa admitted that he has not yet done so, however he expresses his will to do so when he has adequate understandings of what C3S entails. That means, more awareness raising events for these elected representatives is needed so that they can understand C3S agriculture clearly and impart the knowledge to others through various events.

Ward councillors push District Officials to expedite and prioritize support for small-scale farmers in the implementation of DADPs.

Despite the fact that both Chilonwa na Lumuma ward councillors reported to act towards pushing the district officials to prioritize the demands of the small scale farmers in DADPs. The delayed delivery of DADPs services and items necessary for implementation of C3S agriculture was still their major worry. Thus, efforts to empower both the communities to demand timely delivery of DADPs are needed. However, the observed efforts of ward councillor to demand support for small scale farmers is a spirit that need be enhanced as the ward councillor represents the community in district council meetings which is a powerful decision making tool as far as district agricultural sector development is concerned.

5.3.2 Output markers: Love to see

Elected leaders monitor and follow up on the implementation of national policies and laws relating to small-scale farmers and climate change adaptation and mitigation.

As it was found both councillors are still not effectively monitoring and making follow up for implementation of national policies and laws relating to small scale farmers and climate change. This implies that if CCAP project is to change their attitude so as to achieve this outcome more trainings to these elected representatives is needed. Furthermore, this implies that the district legal officer should be involved in provision of education as well as preparation of awareness materials such as posters and manuals.

5.4 Elected village representatives

5.4.1 About meaning of climate change

As this study found all of the interviewed elected village leaders to be aware of climate change and most of them described climate as change in temperature and rainfall patterns and intensity over long period of time. This implies that they have positive attitude towards CCAP project and they have been attending the trainings contrary to the baseline condition where only few were aware.

5.4.2. About causes of climate change

The fact all of the interviewed elected village leaders pinpointed deforestation as the major driver climate change. This being followed by inappropriate agricultural practices and power generation implies that they either following trainings or climate change is a topical issue within their locality. This implies that the project is in a best position to meet its intended outcomes given the higher awareness of village leaders that was also even observed during the baseline study.

5.4.3. About the impacts of climate change

Most of the elected leaders reported decline of crop yield and drying of surface water resources as amongst the major impacts of climate change within their locality. However, upon comparing the awareness level of the impacts with those of the baseline survey those who reported to be aware has increased from 32% to 100% implying that they are responding positively due to the awareness raising events. Thus, what is important is encourage them to disseminate the knowledge as well as enforce effectively the bylaws and laws for natural resources conservation. Furthermore, this implies that change in crop yields particularly declining yields with time due to impacts of climate change is a still a major problem continuing to hit harder the smallholder farmers. Nevertheless, the reported drying of surface water resources such as springs, rivers and lakes with eventual water scarcity is still a drag down of the livelihoods of most small scale farmers.

5.4.4. Awareness of the link between climate change, agriculture and poverty

Most of the interviewed village leaders showed a higher understanding of the linkage between climate change, agriculture and poverty. Upon comparing this with pre-project awareness level, it seems to have improved thus implying they have positive attitude towards the CCAP trainings.

5.5.5 Output markers: Expect to see

1. Elected representatives participates in awareness raising days and stakeholder meetings on small scale agriculture and climate change when external support is provided

Many of the elected leaders reported to have participated in the awareness raising days that were organized by CCAP projects and other initiatives. For those who have not yet attended justified that sometimes they were occupied by other businesses for example farm activities. As well as, lack of

information, implying that future events should co-ordinated in close collaboration of these leaders and short notices should be avoided in order to maximize participation.

5.5.6 Output markers: Like to see

Ward councillors and village council members push for DADPs to integrate support for C3S agriculture

Owing to the fact that this study had similar findings with the baseline survey that ward councillors and village council members are not effectively pushing for DADPs to integrate support for C3S agriculture. Major reason being inadequate knowledge on C3S thus implying that more knowledge needs to be imparted so that the project will be in a position to see what is expected to be seen. However, the elected leaders were found to demand earlier delivery of DADPs services and items to the small scale farmers and complained on the use of agencies for delivery. In addition, pointing out that they are pressing the districts to deliver these services directly to the farmers through existing committees or farmers' associations.

6.0 CONCLUSION AND RECOMMENDATIONS

6.1. Conclusion

It can be concluded that the implementation of CCAP project in both Kilosa and Chamwino districts was found to contribute well towards improving knowledge of climate change and environmental friendly agriculture to the project stakeholders in particular small scale farmers. This is based on the fact that most farmers have been found to be relatively more aware of climate change and C3S agriculture with reference to the baseline situation. As it was revealed that during baseline survey only 9% of the SSFs have attended CC trainings but this study found 93% have attended. In case of C3S during baseline only 10% were trained but this survey found 94% of the SSFs have participated in C3S trainings. Consequently, this has resulted to positive attitude towards adopting environmental friendly and climate change compatible small scale agriculture in the project areas that was observed in this study. However, some individual indicators particular those for smallholder farmers and their representatives to launch demands to the government authorities to integrate C3S into their plans did not respond significantly (less sensitive). For example, during baseline survey 16% of SSFs were reported to advocate elected officials for good governance of natural resources but now it has increased only to 37%. Moreover, the proportional of farmers involved with MVIWATA/MJUMITA networks did not increase as now it was found to be 10% similar to that baseline survey, in which most farmers claimed to be unaware of these networks. This poor involvement made the number of farmers aware of microfinance and REDD to increase less from about 5% during baseline to only 36% during this survey, whilst those who has participated in land tenure trainings raised from 6% to 41%. Thus, it can be concluded that owing to the fact that most of the output/progress markers and indicators has responded

positively following project implementation there is a change of behaviour and even practices amongst the key stakeholders following CCAP project implementation.

6.2 Recommendations

Based on the above findings and implications the following recommendations are made

- 1) The project should consider increasing the frequency and number of training and awareness raising events to the project stakeholders particularly small scale farmers and their elected representatives in which they should be provided before next crop growing season. Also, there should be farmers' day events at the farm field schools that should be preceded by awareness raising before harvesting of the matured crops so that farmers can have a chance to compare even the yield of crops grown by improved techniques (C3S) versus those grown conventionally/traditionally.
- 2) The small scale farmers and their elected representatives should be empowered to advocate for earlier delivery of DADPs guidelines, services and items. As well as, lobby for involvement of community plans into DADPs together with follow up for effective implementation. This can be well done by MVIWATA.
- 3) Farmers should be capacitated to use fair markets instead of the current practice of most farmers to sell their crops at home and even selling crops in field for example simsim, sunflower and groundnuts. Farmers should be empowered and urged to use fair markets as most complained unfaithful middlemen "walanguzi" who do not want to use standard scales "mizani" or use fabricated scales to steal farmers' produce. Also, most of SSFs in particularly Kilosa complained about the poor road conditions rendering sell of crops in fair markets impossible as they have to walk long distances to the market with goods on their head, thus forced to sell to Walanguzi at very low prices. This can be well done by MVIWATA.
- 4) There should be integration of activities owing to the nature of the project agricultural, forestry, environmental, legal, social, land use and entrepreneurial experts or likeminded actors should work in close collaboration. For example, it was found that most of the stakeholders were unaware of national agricultural laws, policy, land tenure and microfinance issues.

ANNEXES

ANNEX I: Case studies

Case study -1

In the beginning before the project, small scale farmers were invading reserved areas and clearing for agriculture without future concern. They burnt areas especially mountains for farm field establishment and destroyed water sources when making their own irrigation canal towards their farm.



*Name: Amne Nassoro
Designation: Ward Councilor
Lumuma Ward - Kilosa District
Age: 31*

The yields were not good because they lacked good agricultural practices and there were no extension officers to advise them. They farmed by using their common cultural practices which was destructive on the natural resources.

After the CCAP project, the condition has changed. Farmers have been educated on the modern agricultural practices that are environmentally friendly. Some of these practices are avoiding burning forest and not to cultivate near water source.

Moreover the harvest has increased from 40% to 68% for beans and onions. Also farmers have been keeping positive attitude towards the modern farming practices which have changed many farmers behavior.

Case study -2

Before the project we were preparing farms by slashing and burning. We then tilled the land, planted crops, after plants have grown we removed weed (palizi). Yields were very low per hectare for instance 1 hectare of maize could only fetch 7 – 8 bags while a hectare of beans could get us 3 – 3.5 bags.



*Name: Elia Hassan,
Designation: Nguvukazi Farm field member,
Village: Lunenzi,
District: Kilosa,
Age: 40*

The CCAP project has taught us about climate smart small scale agriculture and soil conservation to avoid soil erosion. We have been taught on how to cultivate by using terraces across the slopes and pitting method to avoid water run-off which could cause soil erosion.

Lastly I expect to harvest 12 – 14 bags of maize and 4 – 5bags of beans per hectare because I have used farmyard manure and modern farming techniques.

Case study - 3

Before the environmental friendly agricultural project, we were slashing and burning grasses and then planting. This was killing soil microorganisms and hence the yield was very low for example we were harvesting between 1 – 2 tins per ¼ hectare of beans.



Name: Cecilia Simon
Title: Nguvukazi Farm Field Member
Village: Kisongwe
District: Kilosa
Age: 45

The CCAP project taught us to slash and leave slashes to decay in the farm to fertilize the soil. We are now using spacing in planting crop seeds. This is efficiently using our land as opposed to the previous practices. Moreover yields have increased though there were no plenty rainfall in the previous season but we were able to harvested 10 tins of beans in the ¼ hectare farm. Lastly farmers have changed a lot, they no longer use old methods instead they have adopted the environmental friendly agricultural techniques.

Case study - 4

Farmers have been practicing shifting cultivation especially in the simsim and maize crops. Also there was burning of farms during preparation, cultivation along the slopes something which was influencing soil erosion.

Actually, after the launch of the CCAP project, farmers have started to use improved agricultural practices. Nevertheless, they have started to use improved seeds and safe storage of their crops by

using different pesticide quite different to the past when they used smoke to dry crops in their house ceilings particularly inner side of kitchen roofs to protect them from pest attack.

Farmers have started to change their perspective especially after receiving training on improved farming methods. Bad economic condition has caused food shortage which has influenced the adoption rate.

Before the project there was poor yield due to poor farming practices. After the introduction of the project yields have doubled from 2 – 4 bags of rice per hectare



Name: Dionis Mboya
Title: District Agricultural Officer
District: Kilosa
Age: 53

and maize from 0.7 – 2.2 bags per hectare. This is only for food crops but others are also increasing.



Name: Roda Mzulami
Title: Wendu Farm Field School Member
Village: Nzali
District: Chamwino
Age: 57

Case study - 5

Before the CCAP project I used to cultivate traditionally and without even weeding. I was getting less crop yield from this acre I own. I was not real benefiting anything from my farm. Just after this project, we were taught on good agriculture practices and it is this the same farm where I used to get one bag of millet or 4 tins but this year I have obtained 6 bags of millets. It is because I started preparing my farm early by slashing and leaving slashes to decay in the farm, I applied 7 oxcart of farmyard manure, once it rained I ploughed my farm using oxen driven plough, I planted on spacing using 75x35 cm. When the seedlings emerged, I thinned my farm and left two plants per every hole and removed all the weeds. I also applied small ridges on the plants to prevent soil erosion on plants and store

moisture but also prevent plants from being blown away by strong wind. There was some pest, I applied pesticide once and my all crops grew healthily. But I have forgotten the name of the pesticide. I harvested 6 bags of millet that I have never harvested from this farm. I have benefited a lot from this project and I do encourage other farmers to join this project as it real benefits us.

ANNEX II: INTERVIEW QUESTIONS

Small scale farmers questionnaire

1. Have you heard about climate change?

- Yes
- No

If yes can you explain what it is? (More than one box can be ticked)

- Changes in temperature
- Changes in rain fall
- Change in wind pattern
- Change in cloud conditions
- Others (please specify)

Can you explain some of the results of climate change?

- Flooding
- Changes in crop yields
- Drying of water courses e.g. streams
- Eruption of diseases e.g malaria
- Drought
- Loss of plant and animals species
- Others (please specify)

Can you explain some of the causes of climate change?

- Deforestation
- Pollution from vehicles
- Pollution from power generation
- Pollution from waste
- Pollution from agriculture activities
- Shifting cultivation
- Forest burning
- Other, please specify

2. Have you heard of climate change adaptation?

- Yes
- No

If yes, can you explain what is it? (More than one box can be ticked)

- Deforestation
- Proper management of forests
- Improved agriculture practices
- Proper management of water resources
- Shifting cultivation
- Land tenure

3. Have you heard of the term climate smart-small scale agriculture?

- Yes
- No

If yes can you explain to me what is it?

- Minimum tillage
- Crop rotation
- Soil protection
- Best seeds
- Downhill and uphill ridges
- Terraces
- Control weeds
- Best use of agriculture inputs
- Spacing between seedling
- No clear forest for agriculture
- No fire
- Other (please specify)

Note for question 3: All 11 choices are correct, it will be considered positive if respondent tick 5 and above of the listed choices otherwise the trial will be considered negative.

4. Have you ever participated in any training and awareness raising event related with; (Training could be attended at farm field school or any other places)

| Event | Yes/No | From which organisation |
|---------------------------------------|--------|---|
| Climate change | | <input type="checkbox"/> TFCG <input type="checkbox"/> MJUMITA <input type="checkbox"/> TOAM <input type="checkbox"/> MVIWATA <input type="checkbox"/> District <input type="checkbox"/> TFCG/MJUMITA <input type="checkbox"/> ActionAid Tanzania Others |
| Climate smart-small scale agriculture | | <input type="checkbox"/> TFCG <input type="checkbox"/> MJUMITA <input type="checkbox"/> TOAM <input type="checkbox"/> MVIWATA <input type="checkbox"/> District <input type="checkbox"/> TFCG/MJUMITA <input type="checkbox"/> ActionAid Tanzania Others |
| Land tenure | | <input type="checkbox"/> TFCG <input type="checkbox"/> MJUMITA <input type="checkbox"/> TOAM <input type="checkbox"/> MVIWATA <input type="checkbox"/> District <input type="checkbox"/> TFCG/MJUMITA <input type="checkbox"/> ActionAid Tanzania Others |
| Microfinance | | <input type="checkbox"/> TFCG <input type="checkbox"/> MJUMITA <input type="checkbox"/> TOAM <input type="checkbox"/> MVIWATA <input type="checkbox"/> TFCG/MJUMITA <input type="checkbox"/> District <input type="checkbox"/> ActionAid Tanzania Others |

| | | |
|------|--|---|
| REDD | | <input type="checkbox"/> TFCG <input type="checkbox"/> MUMITA <input type="checkbox"/> TOAM <input type="checkbox"/> MVIWATA <input type="checkbox"/> TFCG/MJUMITA <input type="checkbox"/> District <input type="checkbox"/> ActionAid Tanzania Others..... |
|------|--|---|

I would now like to ask about adaptation of C3SA in your own farm field. crop

5. Did you apply climate smart agriculture technology in your farm field this season?

- Yes
- No

If yes, what climate smart agriculture practise have you applied?

- Irrigate your field using traditional irrigation practices?
- Use terracing to avoid soil erosion?
- Reduced or no tillage
- Rotate crops on a given field
- Cover the soil by using crop covers to avoid soil erosion and store water
- Use mulch to store water in the soil
- Fallow the land to fertilize the soil
- Use herbicides? If so which one?
- Use uphill and downhill ridges
- Mix crops and trees in your fields
- Use pesticides? If so, which ones
- Apply nutrient in the farm according to the plant needs
- Extend crop rotation with perennial crops
- Clear forest to prepare new fields
- Use fertilisers. If so, which ones?

6. How did you prepare your farm this season?

- Slash and burning
- Burning
- Slashing and leaving slashes to decay in the farm
- Tilling by hand hoe
- Ploughing
- Pits
- Use slashed grasses to prepare terraces

7. Did you access agricultural credit for adding value to your agricultural produce this season?

Yes

No

If yes, what are they?

Fertilizer

Seeds

Power tillers

8. Do you receive practical information on measures that you can take to withstand the impacts of climate change?

Yes

No

If yes, where was it from?

District

NGOs

Central government

9. Have you ever advocate elected representatives and government officers for improvements in governance in relation to land, natural resources and agriculture.

Yes

No

If yes, where did you do it?

In the village meeting where government officials and elected representatives attended

In a workshop attended by government officials and elected representatives

Through media

10. Have you ever supported other farmers in other villages on C3S practices, REDD and Natural resource management?

Yes

No

If yes which practice did you support them? (C3S, REDD or Natural resource management?)

.....
.....
.....

11. Do you know any farmer out of farm field school who has adopted C3SA?

Yes

No

If yes, how many of them

1

2

3

Above 3

If yes, is s/he (more than one answer can be ticked)

Member of your family i.e brother, sister etc

Neighbours in the village

From nearby village

12. Have you ever engaged with local MJUMITA and/or MVIWATA networks to lobby for more support for C3S agriculture, REDD and sustainable land and natural resources management?

Yes

No

If yes please explain who you did it.....

13. What are your recommendations for more farmers to adopt C3SA practices?

Village governments and elected representatives questionnaire

1. Have you heard about climate change?

Yes

No

If yes can you explain what it is? (More than one box can be ticked)

Changes in temperature

Changes in rain fall

Change in wind pattern

Change in cloud conditions

Others (please specify)

Can you explain some of the results of climate change?

Flooding

Changes in crop yields

Drying of water courses e.g. streams

Eruption of diseases e.g malaria

Loss of plant and animals species

Others (please specify)

Can you explain some of the causes of climate change?

Deforestation

Pollution from vehicles

Pollution from power generation

Pollution from waste

Pollution from agriculture activities

Other, please specify

2. Have you heard of climate change adaptation?

Yes

No

If yes, can you explain what is it? (More than one box can be ticked)

Deforestation

Proper management of forests

Improved agriculture practices

Proper management of water resources

Shifting cultivation

- Land tenure
3. Do you understand the linkage between climate change, agriculture and poverty alleviation?
- Yes
- No
- If yes, how does it relate?
- Effects of climate change reduce food production and hence increased poverty among community members.
- Most of effects of climate change increases food production and hence contributes to poverty alleviation.
- Climate change has nothing to do with agriculture and poverty alleviation.
4. What are the initiatives that small-scale farmers have adopted to address climate change impacts?
- Using crop resistant varieties
- Using mulching in their farms
- Avoiding shifting cultivation
- Using irrigation agriculture
- Diversification of activities
- Maintaining cover crops
- Others :-
5. Are you receiving and distributing resources from the districts to support small-scale farmers to adapt more climate, smart small scale agriculture?
- Yes
- No
- If yes, what are those resources?
- Money
- Extension services
- Irrigation equipment
- Drought resistant seeds
- Others:- mention
6. Are there any initiatives in this village that the district or any organisations have started to address climate smart small scale agriculture?
- Yes
- No
- If yes, what are those initiatives?
- Conservation agriculture
- Stopping clearing forest for opening up new farms
- Stop shifting cultivation practices
- Avoiding slash and burning practices
- Others:-
7. In which ways have you participated in helping small-scale farmers in this village to;

- a. Fight against the impacts of climate change?
- Awareness rising about bad agricultural practices contributing into climate change
 - Advocating climate smart small scale agriculture
 - Demanding supports from the district to adapt to climate change impacts
 - Provision of material support provided by the village government to address climate change
 - Other:-
- b. Addressing farming and crop marketing problems?
- Enacting village bylaws that prohibit prices hiking by crop buyers
 - Demanding early delivery and implementation of district agriculture development plans guidelines
 - Provision of extension services for good agriculture practices
 - Stopping slash and burning in the village
 - Demanding good seeds from district agriculture offices for small-scale farmers
 - Others:-
- c. Conserving environment?
- Conservation education provision
 - Implementation of environmental laws
 - Enacting bylaws that prohibits environmental destruction in the village
 - Holding responsible those who destroy environment
 - Informing farmers to adapt conservation agriculture
 - Other:-
8. Have you demanded for more support to small-scale farmers and sustainable land and natural resource management?
- Yes
 - No
- If yes, where did you do it?
- In the village meeting where senior government officials attended
 - In a workshop/meeting attended by senior government officials
 - Through media

District officials questionnaire

1. Where external support is provided, does your district willing to integrate climate friendly agriculture in the DADPs?

- Yes
 No

If yes, does your district integrate any climate friendly agriculture practices in the current DADPs?

- Yes
 No; Why?

If yes, what is it?

- Reduced or no tillage
 Soil and water management techniques
 Sensitization of the uses of improved seeds
 Sensitization of selling value added crops
 No burn policy
 Discouraging shifting cultivation

2. Where external support is provided, does your district willing to integrate community plans in DADPs?

- Yes
 No

If yes, can you provide some examples of community and their plans that have been integrated in the current DADPs?

3. Does your district have clear plans for raising awareness about climate change, climate-friendly agriculture and gender amongst communities?

- Yes
 No

If yes, how is it done?

- Through organising meetings in the villages
 Through video shows in the villages
 Through radio programmes.
 Through printed materials.
 Any other, please mention

4. Is your district supporting communities to implement actions that will reduce deforestation?

- Yes
 No

If yes, can you mention kind of support that you are providing?