

Community Perception And Participation Towards Soil And Water Conservation Practices: A Case Study Of Gubalafto District Of Amhara Region, Ethiopia

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Abstract: Soil and water conservation was not only related to the improvement and conservation of ecological environment, but also inhibit to the sustainable development of the agricultural sector and the economy at large. An attempt was made to assess the levels of perception and participation of the community towards SWC practices, in the Gubalafto district of Amhara region, Ethiopia. In this study the requisite information was gathered from social surveys, interviews, focus group discussions, field observations and secondary data sources. Descriptive and inferential data analyses were applied in the study and the results showed that 66.7% of the farmers participated in the SWC practices by force and for payments. It was found that the participation of various stake holders was lower in the planning and monitoring phases and higher in the implementation phase. Misperception about the importance of SWC is existing within the community, and a single factor ANOVA indicated that there were no remarkable variations among the three agro ecological zones of the study district on the level of misperception. For effective working and to obtain better results, the involvement of all the stakeholders and farmers is needed during all the phases. Hence, necessary measures must be taken to ensure voluntary participation and to remove the misunderstandings of all the concerned participants.

Key Words: Community, Participation, Perception, Soil and Water Conservation

1.0 Introduction

The erosion of top fertile soil is one of the major problems experienced globally, and is responsible for the reduction of agricultural production and productivity capabilities. Further, it also negatively affects the natural water storage capacity of catchments areas, man-made reservoirs and dams, quality of surface water, the aesthetic value of the landscape and ecological balance in general (Woldeamlak, 2007). Global food security and soil fertility have direct relationship, the inappropriate agricultural practices around worldwide account for 28% of the degraded soils (Addisu, 2011). According to Habtamu (2014) in Ethiopia prior to the 1974 revolution, soil degradation did not get policy attention as it deserved. Due to the 1973 and 1985 famines SWC works have been started by providing food materials to the community by distributing food grains and oil. In the initial stages, these programs faced difficulties, the need for public participation in the planning and implementation of SWC programs at local level was sensed. As a result, several participatory approaches were used for SWC (Addisu, 2011). In order to overcome the problems of soil erosion, land degradation, and deforestation, currently the physical and biological SWC measures are being implemented through Integrated Watershed Management Approach in all the regions of Ethiopia (Amsalu and de Graaff, 2007).

The various perceptions of farmers towards SWC measures such as reduction in the size of cultivable land due to the physical SWC structures, harboring rodents, labor-intensive nature etc., had created challenges in the adoption and sustainability of SWC measures, whereas farmers with less livestock, on steep slopes and with poor fertility implemented the practices better than those experiencing contrasting situations (Amsalu and de Graaff, 2007). Following the 1985 famine, SWC measures were introduced to rehabilitate the study area, these included physical conservation measures (stone bund, stone faced soil bund, check dam, and fanya-juu terrace), agronomic conservation measures (contour farming, mixed cropping, and crop rotation); and biological conservation measures (afforestation, agroforestry, area closure, and grass strip) (Belay & Eyasu, 2017). In spite of having considerable years of past experience, the complete accomplishment due to SWC approaches could not be attained and hurdles still exist. Therefore, this study was intended to assess the levels of community perception and participation towards SWC practices in Gubalafto district of Amhara region.

1.1 Description of the Study Area: In the north eastern part of Amhara Region, Ethiopia and with an area of 900.49 square kilometers, the study area Gubalafto District is located between 39°6'9" and 39°45'58" Longitudes East and 11°34'54" and 11°58'59" Latitudes North. The landscape and topography is mostly categorized by a chain of mountains, hills and valleys ranging between 1379- 3809 meters above sea level (m a.s.l). The study area consists of three agro-ecological zones, viz., Lowlands (Kolla), Mid-altitude (Woinadega) and Highlands (Dega) which are existing at an altitude ranging between 1379-1500, 1500-2300 and 2300-3200 meters above sea level. According Central Statistical Agency of Ethiopia (CSA, 2014/2015) the Gubalafto District has a population of 139,825 and the dominant economic activities of the region are agriculture, trade, different services, micro and small enterprises etc. A bi-modal nature of rainfall is found in most parts and the land use pattern

of the district includes arable land (34.1%), grazing land (17.9%), forest (27.1%), and water bodies (6%), rocky land (5%) and others (9.9%), respective (Dereje and Desale, 2016).

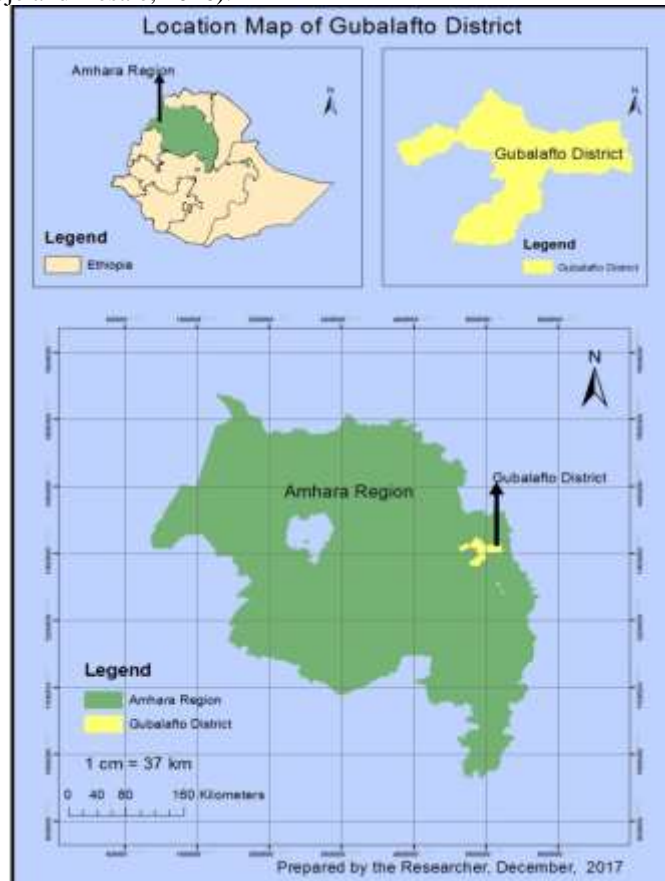


Figure 1.1 Location Map of the Study Area

2.0 Literature Review

Gebremedhin (2004) conducted a study on community participation and sustainable SWC management in Zala-Daget Project, Dogu'a Tembien district, Ethiopia. The study showed that every year, considerable resources were invested in SWC works. However, these activities did not reach the required level and also sustainability was still a point of discussion. Dawit (2014) conducted a study on the impacts and impediments of community participation on SWC to sustainable land resource management in Laelay Michew Woreda, Tigray, Ethiopia. The study results indicated that, level of education, health status; income and social facilities like transportation and communication determine the participation of the community in SWC practices.

Simeneh and Getachew (2016) studied about the perception of farmers toward physical SWC structures in Wyebla Watershed, Northwest Ethiopia, majority of sampled respondents had awareness on the problem of soil erosion on their farm lands, but they had argued that soil erosion reduces crop production and this could be solved through appropriate SWC measures. However, in order to achieve better sustainability the critical areas to be concentrated included planning, implementation and maintenance phases through awareness creation, capacity building and motivating real community participation. Tegegne (2014) studied on the farmers perceptions regarding soil erosion and conservation practices in Dejen District, Ethiopia. The findings of this research concluded that socioeconomic and biophysical factor such as uncontrolled (free) grazing, distance between homestead and farm land and farmers' low level of the economic capacity were the main challenging problem in order to implement SWC measures in the study area.

3.0 Research Methodology and Data Sources

In the present study descriptive research design was adopted as it was easy to obtain data from wider area, large population and it is also easy to draw inferences. For the purpose of this study necessary data were collected through questionnaire, interview focus group discussion, field observation and from secondary data sources.

Out of the total 34 Kebeles of Gubalafto district, 3Nos of Kebeles (Ezet, Geshober and Dorogbir) were selected for selecting the sample by using stratified sampling method based on agro-ecological settings. According to Gubalafto district office plan (2016/17) the total household heads of the three kebeles were 2462Nos and the household heads of each Kebele (Ezet, Geshober and Dorogbir Kebeles) were 731Nos, 934Nos and 797Nos respectively. In this study sample respondents (151 farmer household heads respondents, 4Nos of Agricultural Office Experts and 2Nos of Environmental Protection Office Experts for focus group discussion, 1 No Agricultural Office Head and 3Nos of selected Kebeles Chairmen for interview) were selected using purposive sampling technique. Since, the population is less than 10,000 Kothari (2004) formula was used to determine the sample size of the study and the sample size were calculated as 151 farmer household head respondents. To determine the sample size of each Kebele Kothari (2004) proportionality formula was adopted and the sample size of each Kebele was calculated as Geshober Kebele 57Nos, Ezet Kebele 45Nos and Dorogbir Kebele 49Nos of farmer household heads. Both primary and secondary data sources were adopted to obtain valid and reliable information. Primary data was obtained through questionnaire, interview, focus group discussion and field observations. Secondary data was obtained from books, past researches and government plans.

4.0 Data Analysis

For the purpose of this study 151 farmers household heads were addressed in the social survey, after checking for accuracy 144 questionnaires were useful for the study and this gave a response rate of 95.36%. The response rates of interview and focus group discussion were 100%. Amharic is the working language of the study area, so the questionnaires, Interview and Focus Group discussion guides were translated into the Amharic language to obtain necessary information. In the present study descriptive and inferential data analysis were adopted and the data was evaluated by using SPSS version 21 and MS. Excel packages. The results are presented in the form of graphs, tables and qualitative and quantitative discussion.

5.0 Results of the Study

5.1 General Information about Respondents: In order to effectively address the research issue the demographic details of the community were addressed. Certain questions were posed to know about the gender, age, education, and other details. The demographic details determined the representativeness of the sample selected. From the total 144 respondents of the study 73 % and 27% were male and female respectively. The other details gathered are shown in Fig. 5.1 below.

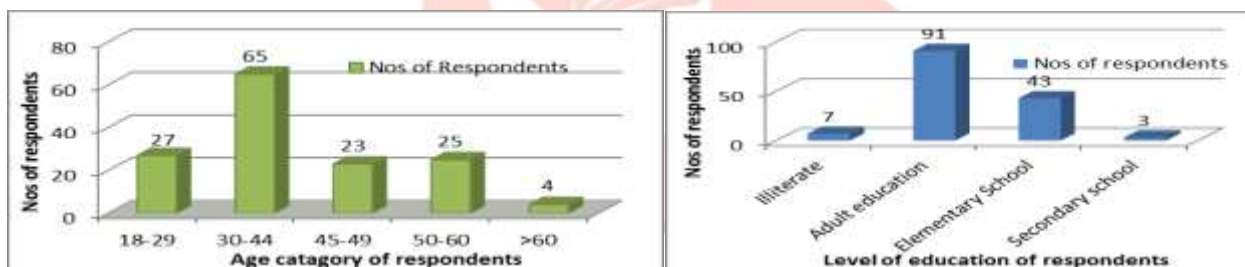


Figure 5.1 age category and level of education of respondents

5.2 Community Perception and Participation towards SWC Practices

5.2.1 Participation of Respondents and Reasons behind their Participation: The participation of different actors at different phases of SWC practices enhances the possibility of achieving sustainable SWC outcomes. The Table 5.1 shows that participation of respondents and the reason behind their participation. It was interesting to note that all of the 144Nos of respondents have participated in SWC practices. The reasons behind their involvement were investigated and the three ways of community participation was evaluated. It is important to mention that about 66.7% (Force & Payment) of respondents have participated without understanding the importance of SWC practices. The concerned persons of the government bodies and local institution like Edir had forced them to involve. The community perceived that attending SWC measures is for government rather than for themselves, because there was misperception between the community and government towards SWC practices. Except a few well educated and experienced farmers, those participated voluntarily do not have a sound knowledge but were involved for the sake of accepting government recommendation. This way of participation had created a challenge for the sustainability of these practices.

Table 5.1: Participation of Respondents and Reason behind their Participation

Variables	Items(cases)	Frequency (Nos)	Percent (%)
Participation SWC practices	Yes	144	100.0
Reason behind participation of respondents	Voluntary	48	33.3
	Forced	59	41.0
	Payable	37	25.7
	Total	144	100.0

Source: Field Survey, 2018

5.2.2 Level of Participation of Different Categories of the Community: The level of participation of different categories of the community in SWC practices was assessed and shown in Fig. 5.2. It was identified that the community in general is having good participation, whereas the participation of women were medium and youth participation was lower. According to the information gathered from the focus group discussion women in the study area spent most of their time in domestic activities, whereas the youth group focused on off farm income generating activities. It was learnt that land distribution was done before 27 years in the study area and farmers with less than 40 years age did not have enough farm land.

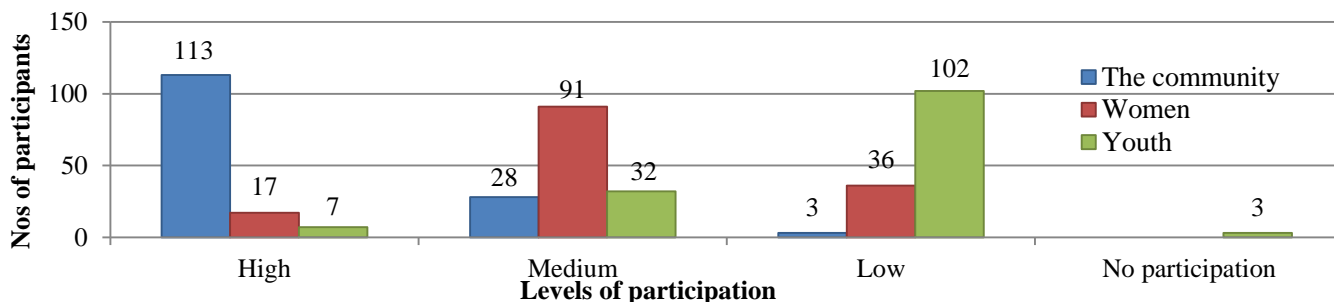


Figure 5.2: Level of Participation of Different Categories of the Community, Source: Field Survey, 2018

5.2.3 Level of Stakeholder Participation at Different Phases of SWC practices: The participation of different actors at different phases of SWC practices enhances the possibility of achieving sustainable outcomes. The survey result in Fig. 5.3 indicated the level of stakeholder participation at different phases of SWC practices. The detailed analysis may be visualized from the figure; however it is necessary to note that the significant involvements of the stakeholders during the various phases were Implementation-High, Planning-Low and Monitoring-No participation. Due to the lack of active participation in all the phases of setting out these measures, there is a significant under progress in achieving the intended goals.

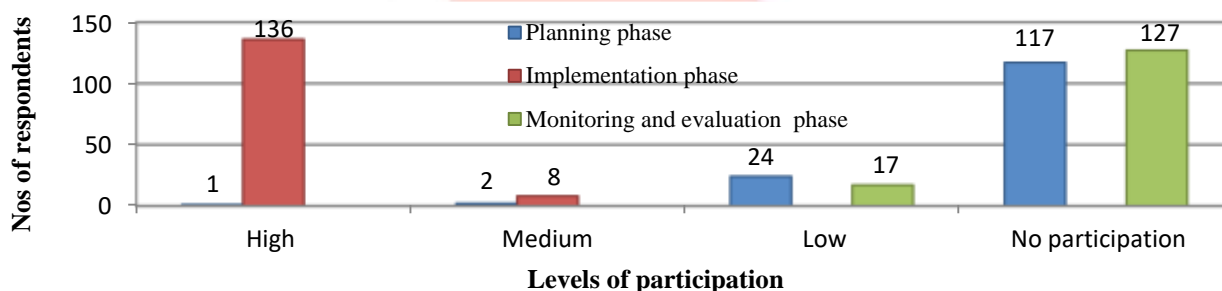


Figure 5.3: Level of Stakeholder Participation at Different Phases of SWC Practices, Source: Field Survey, 2018

5.2.4 Community Perception towards SWC Practices: In the present study majority of the respondents perceived that SWC measures reduces farm size, difficult to implement, difficult to tillage, need much labor and have no significance importance on enhancing the production and productivities of farm lands.

5.2.5 Level of Misperception of the Community towards SWC Practices: From the data in Table 5.2 it might be observed that, about 95.1% have agreed that misperception do exists and the proportion varied from low to high. It is interesting to note that only 4.9% have responded that no misperception exists within the community towards the importance of SWC practices.

Table 5.2: Level of Misperception of the Community towards SWC Practices

Variable	Items(cases)	Frequency (Nos)	Percent (%)
Level of misperception of the community towards importance of SWC practices	High	86	59.7
	Medium	22	15.3
	Low	29	20.1
	No misperception	7	4.9
Total		144	100.0

Source: Field Survey, 2018

Comparison among Agro Ecological Zones: In order to check the significance an indication for the levels of misperception with regards to agro ecological settings, ANOVA was evaluated (Table 5.3). It was noticed that there was no statistically significant difference between three agro ecological zones of the district, and the observed p-value (0.797391) is greater than 0.05.

Table 5.3: Comparison on the Level of Misperception among Agro Ecological Zones

Source of Variation	SS	df	MS	F	P-value
Between Groups	58.4924242	2	29.24621	0.232941	0.797391
Within Groups	1004.41667	8	125.5521		
Total	1062.90909	10			

Source: Developed From Field Survey, 2018

6. Facts from Focus Group Discussion, Interview and Field Observation

6.1 Facts from Focus Group Discussion: The discussion was held with 2Nos and 4Nos of environmental protection and agricultural office experts of the study district respectively. The salient points of the discussions regarding the community participation were discussed below;

- High community participation was attained during the implementation phase of SWC measures because the community was the source of labor.
- Participation in the planning phase was attended only to convey about the government plans rather than planning with the community and seeking their needs.
- In the monitoring and evaluation phase no participation was found.

In the focus group discussion study regarding to community perception towards SWC practices, similar findings were identified with that of the findings from respondents' response.

6.2 Facts from Interview: Interview was conducted with Agricultural Office Head of the study district and three selected Kebeles Chairmen (Ezet, Geshober and Dorogbir kebeles). In the interview study the main stakeholders of SWC practices were identified and listed here under:

- The community was the source of labor for the practices and also the owner of the practices. As such the community was mostly involved during the implementation stage for working.
- Agricultural office was the responsible institution by providing the necessary inputs, technical guidance and mobilization of all stakeholders for the implementation of SWC practices starting from planning up to taking corrective actions.
- Environmental protection office was involved in resolving land ownership related conflicts.
- Kebele health extension workers provided first aid for farmers at their work place, when there were injured during SWC campaign.
- NGOs (USAID and Save the Children) have participated by providing funds for the training of SWC professionals and selected farmers; they also provided inputs for SWC practices like GPS.
- Local institutions like Edir participated in developing bylaws for the protection of SWC measures.

Community perception was found as similar with the findings obtained from respondents' response and focus group discussion.

6.3 Facts from Field Observation: The findings from field observation were mostly in close agreement with the findings obtained from other methods used in the study.

7. Interpretations and Discussions

For the successful implementation of the SWC measures the perception and participation of all the stake holders is very much crucial. The responsibilities of various stake holders were discussed in the interview section. The other key major issues are presented in this section of the study. In the Planning phase, it was observed that the participation of the various stake holders was very limited. They were involved only to communicate the proposals of the government regarding these issues. In the Implementation phase, the participation of the various stake holders was very found to be higher. Since the community was the source of labor and also the owner of these practices, they participated well. The other stake holders actively participated due to the higher mobilization activities geared up from the government. In the Monitoring and Evaluation phase, the participation of the various stake holders was again found to be lower. It was due to the fact that, no attention was given to the monitoring activities after implementation. In this study the survey result indicated that, there was high misperception and majority of respondents was agreed with the community did not have awareness towards the importance of SWC practices.

8. Conclusions and Recommendations

8.1 Conclusions

In general the community participation was found to be higher, however the participation of women was moderate and participation of youth was lower in SWC campaign. Most of them participated without properly understanding the importance of these measures, but through force and for the payment they had received. The participation of various stake holders was found to be lower in planning and monitoring phases, for effective working the involvement is needed during all the phases. Misperception was higher among communities; they opined that the measures were taken for the benefits of the government and not for the individuals. The variations among the level of perceptions with regards to the three agro-ecological areas were insignificant. The attitudes of the participants showed that these measures are benefiting the government policies and not to the individuals. They were involved in the activities by force and payment; necessary measure must be taken up to change this attitudinal behavior.

8.2. Recommendations

Based on the conclusions made in the previous section the following recommendations are suggested to achieve better perception and participation in SWC practices in the study area.

- Necessary measures must be ensured to increase the participation of women and youth, as women contribute to half portion of the community and the youth group is highly productive.
- Proper awareness creation and involving most of the stakeholders during all the working phases of SWC practices is very crucial.
- Effective approaches must be ensured so as to motivate the farmers, to realize that these measures are for their benefit. They have to be responsible in safe guarding so as to attain the benefits involved.
- The district agricultural office should introduce new technologies and practices by creating awareness about its importance rather than introducing through payments.

9. Acknowledgement

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References

- [1] Addisu, D., 2011, 'Benefit and challenge of adoption soil conservation techniques in Goromt Watershed central Ethiopia', Addis Ababa University, Ethiopia.
- [2] Amsalu, A. & De. Graaff, J., 2007, 'Farmers views of soil erosion problems and their conservation measures at Beressa Watershed, central Highlands of Ethiopia', *Agricultural and Human Values*, pp. 23:99-101.
- [3] Belay, A., & Eyasu, E., 2017, 'Challenges and extents of SWC measures in Guba-Lafto Woreda of North Wollo, Ethiopia', *Journal of Agricultural Research and Development*, Volume Vol. 7(2), pp. 0103-0110.
- [4] Dereje, M. & Desale, K., 2016, 'Assessment of the impact of small-scale irrigation on household livelihood improvement at Gubalafto District, North Wollo, Ethiopia', *Agriculture*, 6(3), p.27.
- [5] Gebremedhin, Y., 2004, 'Community participation and sustainable SWC management: the case of Zala Daget project: Dogu'a Tembien Woreda- Tigray Highlands', MA. thesis, Department of Regional and Local Development Studies, Addis Ababa University, Addis Ababa, Ethiopia.
- [6] Gubalafto District Agricultural Office, 2016/17 plan, Gubalafto District, Amhara Region.
- [7] Dawit, T., 'Impacts and impedments of commiunity participation on soil and water conservation to sustainable land resource management in Laeley Maichew Woreda, Tigray, Ethiopia', MA. thesis, Department of Geography and Environmental Studies, Addis Ababa University, Ethiopia.
- [8] Habtamu, O., 2014, 'Challenges of SWC practices and measure to be undertaken: the case of Wuchale District, Oromia Regional State', MA. thesis, Department of Geography and Environmental Studies, Addis Ababa University, Ethiopia.
- [9] Kuthari, C. R., 2004, 'Research methodology: methods and thechniques 2nd edition', *New Age International Publisher*, University of Rajasta, Jaipur, India.
- [10] Simeneh, D. & Getachew. F., 2016, 'Perception of farmers toward physical SWC structures in Wyebla Watershed, Northwest Ethiopia', *World Journal of Agricultural Sciences*, 12 (1), pp. 57-63.
- [11] Tegegne, T., 2014, 'Perception of farmers on soil erosion and conservation practices in Dejen District, Ethiopia', *International Journal of Environmental Protection and Policy*, 2(6), pp.224-229.
- [12] Woldeamlak, B., 2007, 'SWC intervention with conventional technologies in northwestern highlands of Ethiopia: Acceptance and adoption by farmers', *Land Use Policy*, (24): 404- 408.