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COMMUNITY PARTICIPATION IN SUSTAINABLE SOIL AND WATER CONSERVATION: THE CASE OF GORO GUTUU WOREDA OROMIA, ETHIOPIA

Monitoring the importance of civic participation in the process of sustainable soil and water conservation measures in cases where irregular and unstable participation of civic/community in the process of sustainable soil and water conservation measures has been observed is taken as central problem of the study area. The sequential exploratory mixed type of research was used to answer the stated research questions; moreover, to make sure of getting reliable and valued data both primary and secondary data was collected through FGD, KII, Questionnaires and field observation. As a result, from 203 persons, 24, 12 and 167 informants participated in FGD, KII and survey respectively. The collected data was analyzed qualitatively and quantitatively through narration and statistical description respectively. The statistical significance of perception of the difference between informants gathered from three agro ecological zones of study sites was tested by Kruskal Wallist Test. This study significantly identifies the importance of community participation as it is important to develop awareness, sense of ownership, transparency and self-trust among communities in sustainable soil and water conservation activities. Also, the small size of farm leads to low level of annual agricultural income and wealth, low educational status leads to low level of awareness and health status of farming communities, reactive culture of farming communities toward conservation activities and low commitment and weak capacity of front line leaders was identified as economic, social, cultural and political factors that affect dependable participation communities in sustainable soil and water conservation activities. Accordingly, the researcher recommended that, Bureau of agriculture and natural resource office should look again and set clear strategies towards the right of ownership / the right of use of resources produced on rehabilitated closed farm land. Also, the district and zone agriculture and natural resource office should capacitate and empower the front line mobilization agent through training and motivational activities. The future researcher should give emphasis and come up with most possible alternatives which will help to minimize the effect of the small size farm land leading to low level of annual agricultural income and wealth resulted from uneven participation of community in sustainable soil and water conservation activities.

Key word: *community participation, sustainable soil and water conservation, Ethiopia.*

Introduction

Land degradation has been one of the serious challenges to the world's farming system faces. Millions of farmers in developing countries have been striving to feed their families while challenged with land degradation caused by natural and human factors. These challenges have been acute in Sub-Saharan African countries where continuous cultivation of small farm land without effective conservation measure has practiced and resulted in the loss of soil fertility, water and vegetation covers, which lead to decline of land productivity and total production, that, in turn, brings poverty, hunger and chronic food insecurity problems that complicate survival and econom-

ic development of countries (Schiechti, 1985; Winter bottom, 2013).

Similarly, this situation heavily affects Ethiopian farming systems, where agriculture has been the main source of employment and livelihood of 95 % of rural people and contributed about 50% country's GDP by supplying about 75% of agricultural raw materials, of which 90% is used as export earnings of a country, while 50% of high land part of the country has been already degraded (Hurni, 1993, Soromessa and Gedefaw, 2015). Furthermore, high population and livestock pressure, deforestation, and poor farming system lead to soil erosion through wind and rain water which have been the major cause of land degradation affecting the livelihood of large proportion of

people, particularly in the highland part of Ethiopia (Berry, 2003, Tamene, et al., 2006 and Desta, et al., 2009).

Hence, to reverse the situation, many attempts have been made by the government, particularly in 1970 and 1980 most extensive physical and biological conservation activities were practiced in the high land of Ethiopia through campaign by using food /cash for work programs to incentivize people. Then high amount of resources has been invested to ensure sustainability of soil and water conservation practices, so far it has limitations in creating sustainable community participations and sense of ownership at each stage conservations practices lead to sever farm land degradation in the high land of the country (Mitiku Haile, et al., 2006). Moreover, the above mentioned problem concerns Goro Gutu Woreda of Oromia Regional state where high population pressure, recurrent drought and land degradation caused by deforestation, poor farming system and overgrazing which has prevailed and affects the livelihood of the inhabitants (Oromia National Plan Programs for adapting change of climate, 2011).

Therefore, mobilizing and monitoring civic/community participation at all stages of sustainable soil and water conservation process may play significant roles in transforming civic societies' /communities' sense of ownership contributing towards generating sustainable participation of civic society in sustainable soil and water conservation measures which may be used to reverse land degradation challenges prevailed in the study site.

The role of creating and monitoring effective civic society participation, factors that affect sense of ownership among civic society in generating and monitoring effective participation in sustainable soil and water conservation practices as well as the most possible alternatives used for mobilizing effective civic participation in sustainable soil and water conservation process were taken as research questions of this study.

These research questions were answered by respondents with aim of investigating the major causes of irregularity observed civic participation in the process of sustainable soil and water conservation practices. Also, the research questions were deployed to identify and to come up with the most possible alternatives which would be used to enhance civic participation in sustainable soil and water conservation process. This study has been undertaken through exploratory sequential mixed type of

research designs that combined qualitative and some quantitative approaches in the way that the quantitative data supports the qualitative data and come up with most possible multiple reality.

The purposive and multistage sampling that combines proportional strata and systematic random sampling were used in developing sample of the study. In data collection process, FGD, KII, structured questionnaires and field observation were used as data collection tools. The primary and secondary data was collected, analyzed through narrative and statistical description and presented through narration charts and tables.

Material and Methods

The data required for assessment of the role of community participation and factors that affect the consistent participation of community in sustainable soil and water conservation activities was collected by using FGD, KII and observation as qualitative data collection materials, whereas the structured survey questions were used as quantitative data gathering tool. Hence, 24 respondent from water shade committee members and 12 informants from different stakeholders were purposively selected and participated in FGD and KII in collecting rich qualitative data, whereas, 167 farming HHs were calculated with 97% confidence level and 7% correction margin as sample size of the study (Kothari formula) and selected through multistage sampling techniques which combine proportional strata and systematic random sampling in which the first respondent was selected from the sample frame by lottery system and the next respondent was selected on the basis of the number of list of the first respondent found plus the interval between the respondent obtained by dividing number of sample frame population (N) for sample size (n).

Since, the study design is sequential exploratory mixed type of research mixed approaches that combine some qualitative data, hence, the initially collected qualitative data was analyzed through narrative explanation and was followed by the quantitative data analyzed through statistical descriptions. At the end, the analyzed and interpreted data was mixed and presented through narratives, tables and charts in the way that quantitative data supported by qualitative data (table 1).

Table 1. – HHs in each sampled Kebele and proportional sample size taken from them

Kebele	Total HHs in each kebele and sample size taken from them								
	Male	proportional sample size taken		Female	proportional sample size taken		Total	Proportionally taken total sample size	
		Number of male HHs	Percent taken		Number of male HHs	Percent taken		Percent	Sample size
Werji jalela	1258	68	5.4	76	4	5.2	1334	5.4	72
Medisa Walteha	918	49	5.3	51	3	5.8	969	5.3	52
Ido Jalela	704	40	5.6	68	3	4.4	772	5.5	43
Total	2880	157	5	195	10	5	3075	5	167

Source: Own survey, June 2017

Result

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The importance of civic/community participation in sustainable soil and water conservation activities process. To explore perceptions and beliefs of societies about the importance of community participation in sustainable soil and water conservation activities, KII and FGD were conducted. Therefore, the response collected from participant of KII indicated that civic /community participation is important to enhance the level of awareness and sense of ownership among rural farming communities. Besides that, it played a vital role in exhaustively mobilizing the required resources (land, labor and tools) used to accomplish communal conservation work within a given period of time.

Furthermore, the respondents emphasized the significance of voluntary based civic /community participation in the process of sustainable soil and water conservation activities directly by saying that "Practicing soil and water conservation activities are unthinkable without voluntary resource (land, labor and tools contribution of resources) of community". This shows that establishing genuine and voluntary community contribution is important to ensure the sustainability of conservation activities.

In addition, from three focus group discussions, two FGDs conducted at "Medisa walteha" and "Ido jalela" discussed the importance of civic/community participations in sustainable soil and water conservation process thoroughly.

The majority of participant perceived civic / community participation in sustainable soil and water conservation process as important to achieve and sustain soil and water conservation measures through collective efforts, sharing experience on managing time regarding to communal and individual work, developing sense of ownership and responsibility / trust among local communities in practicing soil and water conservation measures on communal and individual crop land.

Also, one of the three focus group discussions conducted at "werji jalela" discussed and concluded that community participation is only important to develop common consensus among communities and accomplish communal conservation activities within a given period of time, despite the fact that community's sense of ownership mostly relies on fair distribution and efficient utilizations of resources produced on rehabilitated communal land.

To sum up, the majority of informants participated in KIIs and FGDs conducted discussion on the importance of mobilizing and monitoring civic participation in the process of sustainable soil and water conservation measures. Therefore, they argued and perceived monitoring of civic participation in sustainable soil and water conservation process as important to develop awareness, sense of ownership, self-trust and willingness among local community towards achieving and sustaining soil and water conservation activities. Also, it played a vital role in enhancing working culture which leads to motivation of local community sustainably investments to soil and water conservation activities.

Also, to triangulate data about the importance of community participation a survey was conducted with 167 farming HH. Therefore, from the 167 gathered farming households, 80.2% and 14.4% of them answered about the importance of community participation by saying that "very important and important" respectively with the justification

of community participation should develop communities with the level of awareness and sense of ownership, accomplishing the work through collective effort within a given period of time and ensuring the sustainability of conservation structures, whereas, insignificant percent 4.2% and 1.2% of them answered by saying that "community participations are less important or not important" respectively with justification about participation vital only for communal land rehabilitation regardless of individual crop lands. Since the farm owned by individual farmers are small in size, conservation activities undertaken through campaign affects the size of farm and lacks quality of structures which suit the crop land. This leads to affecting sustainability participation and conservation structures.

The benefits gained by community from participating in sustainable soil and water conservation activities. To explore benefits gained by community from participating in sustainable soil and water conservation activities, key informant interview and survey were respectively undertaken.

Therefore, the majority of responses collected from respondent participated in KKI show that community gained benefits from participating in sustainable soil and water activities such as increasing farm soil fertility which leads to increasing agricultural production including perennial plant "chat" and animal fodder, increasing wood production used for different social services and minimizing or avoiding flood disaster leads to create loss of live and farm land. By the same token the response collected from a few respondents indicated that the economic, social and environmental advantages was gained by community from participating in conservation activities.

In total, the economic benefits farming community gained comprised increasing the agricultural production including fruit, "chat", animal fodder, and wood production. Preventing farming communities from flood disaster causes displacement and loss of life is categorized under social advantage community gained, whereas, rehabilitating the degraded land and creating conducive environment are among environmental benefits farming community earned from participating in sustainable conservation activities. Furthermore, the result obtained from survey shows that from 167 surveyed farming HHs 68% of them satisfied and 30% of them not satisfied, whereas, the insignificant number 2% farming HH were highly satisfied.

Moreover, the study conducted in similar area concluded that community participation is important to develop community level of awareness, sense of ownership, transparency and sharing responsibility which leads to the creation of sustainable soil and water conservation structures (Betru, 2011).

To sum up, the above result supports the fact that community participation is important to develop the level of communities' awareness, sense of ownership, self-trust and preparedness to invest conservation activities in sustainable way. Also, it is important to scale up experience within farming community members and enhancing group working culture, trust, transparency and sharing of responsibilities which leads to accomplishing communal conservation activities through collective effort, as well as it enables communities to earn economic, social and environmental benefits (table 2).

Table 2. – Respondents' response about importance of community participation in conservations

1	Do you get economic, social and environmental benefit from conservation activities?	Frequency	Percent
	Yes	167	100
	No	0	0
	Total	167	100
2	Are you satisfied with the benefit gained		
	Yes	117	85
	No	50	15
	Total	167	100
3	If your answer is yes for question number 2 how do you rate		
	Highly satisfied	3	2
	Satisfied	114	68
	Less satisfied	0	0
	Not satisfied	50	30
	Total	167	100
4	If you are not satisfied what is the reason behind		
	the benefit is inadequate	50	30
	Didn't get benefit	0	0
	Total	50	30
5	Do you believe that community participation at each conservation activities is important to create sense of ownership, level of awareness, transparency and trust among communities to accomplish conservation		
	Very important	134	80.2
	Important	24	14.4
	Less important	4	4.2
	Not important	2	1.2
	Total	167	100

Source: Own survey, June 2017

The perception of the informants about the importance of community participation in the process of sustainable soil and water conservation practices was tested based on three agro-ecological zones of the study area through Kruskal Wallis Test. Therefore, the result indicated that all

P-values (0.987, 1.000, 0.937 and 0.696) are >0.05 which implies that there is no statistical significance perception difference between informants gathered from three agro-ecological zones of the study area (table 3).

Table 3. – Kruskal Wallis Test on Respondent Perception about Role /Importance of community participation

Question	Response						Chi square	D/ freedom	P -value
	Yes		No		Total				
	Fre-quency	%	Fre-quency	%	Fre-quency	%			
Do you believe that CP is Vital to attain SSWC activities?	166	99.4	1	0.6	167	100	0.626	2	0.987
Do you get benefited by participating in SSWC activities?	167	100	0	0	167	100	0.000	2	1.000
Are you satisfied with the benefits gained?	142	85	25	15	167	100	0.130	2	0.937

Source: Own survey, May 2017

Status of community sense of ownership in sustainable soil and water conservation activities. From three group discussions, two of them conducted at “Medisa walteha” and “ido jalela” warmly discussed and concluded that community’s practicing sustainable soil and water conservation activities with low level of sense of ownership is due to less awareness and unfair distribution of resources (grass, wood and water) developed on rehabilitated communal land.

Furthermore, the majority of participant locates and recognizes major factors that affect community sense of ownership in practicing and managing sustainable soil and water conservation structures. This influencing factor

includes community’s low level of awareness, unfair distribution of resources, unreasonable/unconvincing mobilization of community’s resource (labor and tools) to other far distant water shade conservation activities which make them exhausted and weaken their sense of ownership in conservation activities and lead to pay less attention to empowering farming household to participate at initial planning and evaluation stage, rather focused on mobilizing societies through campaign at implementation stage of SWC activities which lead to disregard of the prime interest of micro water shade community’s members that weakens their sense of ownership in practicing conservation activities (table 4).

Table 4. – Respondent response about factors that affect community sense of ownership

	Question	Response					
		Yes		No		Total	
		Fre-quency	Percent	Fre-quency	Percent	Fre-quency	Percent
1	Do you believe that the following factors affect communities’ sense of ownership?	164	98	3	2	167	100
2	Unfair contribution of resource /labor and tools/	165	99	2	1	167	100
3	weak empowerment community participation	161	96	6	4	167	100
4	Low level of awareness	162	97	5	3	167	100
5	Unfair distribution of resources (grass, wood and water)	165	99	2	1	167	100
6	Lack of ownership right on closed farm land	162	97	5	3	167	100

Source: Own survey, May 2017

Also, the group members discussed and concluded that since a large number of farming HHs owned sloppy, degraded and fragmented small sized farm land, they did not gain the needed annual production without practicing soil and stone buds and bench terrace. This implied that farmers individually as well as collectively practice the mentioned conservation structures at crop land indifferently from communal land conservation activities.

Furthermore, the group members emphasized importance of farm land management by comparing with beautification of ladies by saying that “as ladies need different beautification materials to maintain their beauties, the farm land need sustainable conservation activities to maintain resources which leads to giving more yield”; this implied that farm land required usual management to give more products.

The main rationale of practicing this mentioned structure are on top of preventing soil erosion. It is used to maximize the size of farm land through land reclamation and collecting stone from farm. Also the farming HHs usually used soil bunds to grow vegetables on the berm of bund and “chat” inside the bund.

The last group discussion conducted at “werji jalela” opposed point of consensus of the above two focus group discussions by forwarding an idea that “a large number of farming households placed at better status of sense of ownership in practicing sustainable conservation activities both on communal as well as individual lands”. This im-

plies that the farming HHs practice the conservation activities at their initiatives.

In addition, the majorities of interview results indicate the lack of ownership right/ use right, unfair access and distribution of resources among communities, as well as weak level of awareness affect communities’ sense of ownership in practicing sustainable soil and water conservation activities. Besides that, a few responses show that an individual attitude sided selfishly to sustain self-interest by neglecting communal interest as major factors affect communities sense of ownership in practicing sustainable soil and water conservation activities.

The survey conducted with 167 farming HHs identified and recognized the low level of community awareness, unfair distribution of resource, unequal participation of communities at all stages of conservation activities which affects community sense of ownership in practicing sustainable soil and water conservation activities.

Furthermore, unfair contribution of resources for conservation activities and weak empowerment of women and youth participation are major factors that affect farming HHs sense of ownership.

The study conducted in similar area indicated that, empowering community participation at all stages of conservation activities, grounds were laid to develop community sense of ownership which leads to mobilizing communities to wards conservation activities in sustainable way. Moreover, the study result mentioned the im-

portance of community participation by saying that “people more likely own, support and implement activities and issues on which they participate on decision making processes”. Perhaps, weak empowerment of participation towards sustainable soil and water conservation activities erodes and destroys conservation structures and signified importance of community participation at each stage of conservation activities (Buchy, 2000).

To sum up, the above result supports the low level of community awareness, unequal access and distribution of benefit among communities, absence of ownership right/use right on closed crop land, selfishly favoring individual interest which lead to undermine communal interest as well as weak empowerment of community participation in

each stage of conservation activities strongly affects communities’ sense of ownership in practicing sustainable soil and water conservation activities.

The statistical significance of perception of the difference among the informants’ opinion about factors that influence sustainable community participation in the process of sustainable soil and water conservation activities were verified through Kruskal Wallis Test based on three agro ecological zones. Therefore, the result indicated that all P-values (0.056, 0.32, and 0.07) >0.05 which implied that there is no statistical significance perception difference between informants gathered from three agro-ecological zones of the study area.

Table 5. – Kruskal Wallis Test on respondent Perception about sense of ownership in soil and water conservation activities

Question	Response						chi square	D/ freedom	P -value
	Yes		No		Total				
	Frequency	%	Frequency	%	Frequency	%			
Do you believe that unequal participation at each stage affect your sense of owners in practicing conservation	164	98.2	3	1.8	167	100	1.2	2	0.56
Do you think that unequal contribution of labor and tools affect your sense of ownership	163	97.6	4	2.4	167	100	2.23	2	0.32
Do you think that unequal distribution of resource produced affect your sense of ownership	163	97.6	4	2.4	167	100	5.4	2	0.07

Source: Own survey, May 2017

Identifying factors that affect sustainability of community participation in sustainable soil and water conservation activities. The detail group discussions and in depth key individual interview were conducted to pin point factors that affect consistency of community participation in sustainable soil and water conservation activities.

Therefore, the three focus group discussions conducted in three sampled kebele pinpoint the economic, social, cultural and political factors that affect stability of community participations in sustainable soil and water conservation activities. The small land size, the low annual agricultural income and wealth per individual farming HHs was categorized under economic factors. The low level of awareness, low status of education, health and low status of women and youth participation were classified under social factors, whereas, the reactive culture of community towards land degradation was considered as cultural factors. The front line leaders and mobilization agent low level capacity and commitment in performing efficient community mobilization towards sustainable soil and water conservation was classified as political factors that affect consistency of community participation in sustainable soil and water conservation activities. Similarly, the key informant interview results show that the low level of annual agricultural income per house hold, women occupation with home work load, the weak empowerment of youth and women participations in decision making process are major factors that affect consistency of com-

munity participation in sustainable soil and water conservation activities. In addition, the low level of wealth (indicated by number of livestock and crop land size), illiteracy and lack of ownership right/use right on closed individual farm land strongly affect community sense of ownership in practicing sustainable conservation activities, whereas, unexpected funeral ceremony and outbreak diseases temporally affect community participation in sustainable soil and water conservation activities. Furthermore, the survey conducted shows the factors that influence the consistency of community participation in sustainable soil and water conservation activities. Hence, from 167 surveyed farming HHs, 95% of farming HHs mentioned economic, social, cultural and political issues as major factors that hinder consistent participation of community in sustainable soil and water conservation of activities.

The economic factors influence sustainable participation of community for sustainable soil and water conservation activities. Hence, the study conducted in similar area indicated that economic factors comprised the small size of farm land, low level of annual agricultural income and low wealth status per HHs which hinders stable participation of community towards sustainable soil and water conservation activities (Tadesse, 2014).

Therefore, the livelihood of 97% of farming HHs’ depend on farm less or equal to 0.25ha which is below an average standard land holding size of farming HHs which is 0.5-2.8 ha. This small size of farm land may create low level of annual agricultural income. The low level of an-

nual agricultural income may push farming HHs including youth to participate in daily income generating off farming activities to compensate the food gap created on average for 6 months.

Moreover, from 167 surveyed farming HHs, 99% of them classify the small size of farm as economic factor that affects consistency of community participation in sustainable soil and water conservation activities, whereas, 1% of surveyed farming HHs answered the question as small size farm did not affect consistency of community participation in sustainable soil and water conservation activities. This shows that the small size of farm land is accepted and recognized by the majority of surveyed farming HHs as economic factor that affects sustainable participation of community in conservation activities.

On top of fragmented and small size of crop land, the loss soil nutrient is a major challenge that causes the low level of annual agricultural income.

As result, from 167 surveyed farming HHs, 54% of them were pushed to participate in daily income generating off farm activities which hinders them permanently participate in soil and water conservation activities. Furthermore, the above finding is justified by survey conducted with 167 farming HHs to react on the question about “low level annual agricultural income affects consistency of community participation in sustainable soil and

water conservation activities”. Hence, from 167 surveyed farming households, 98% and 2% of them answered the question by saying “yes” and “no” respectively. This implies the low level of annual agricultural income affects consistency of community participation in sustainable soil and water conservation activities.

The low level of annual agricultural income affects regularity of civic/community participation in sustainable soil and water conservation process. Also, the result indicated that from the 136 farming HHs earning annual agricultural income between 1000-16,999 birr, 50% of them participated unevenly and the insignificant 1% of them did not participate. Also, from 28 farming HHs earning annual agricultural income between 17000- 33900 birr, 16% of them participated evenly and the rest 0.6% of them participated unevenly.

Similarly, from the 3 farming HHs earning annual agricultural income greater than 34,000 birr, 1% of them consistently participated and 0.6% of them unevenly participated in conservation activities.

To sum up, the above result supports the fact that the low level of annual agricultural income pushed farming HHs to participate at daily income generating off farm activities to cover the food gap prevailed. This situation affects the sustainable participation of community in conservation activities (table 6).

Table 6. – Cross tabulation of the relationship between the level of education and participation

Level of education	How often do you participate in soil and water conservation practices at both communal and individual land?							
	Usually		Some times		Not participated		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
No schooling	25	14.9	48	28.7	1	0.6	74	44.3
Read and write	23	13.7	14	8.3	0	0	37	22
Elementary	17	10.1	12	7.1	1	0.6	30	17.8
Secondary school	15	8.9	11	6.5	0	0	26	15.5
Total	80	47.9	85	50.8	2	1.2	167	100

Source: Own survey, May 2017

The wealth status of farming household determines dependability of community participation in sustainable soil and water conservation. The wealth indicator used to measure the wealth status of societies varies among communities.

Therefore, the researchers rely on socially developed and accepted indicators used in specific sample kebele. The number of livestock and size of farm land owned by individual farming HHs has been used to measure wealth status of farming HHs. Hence an individual farming HHs owned a pair of oxen (two oxen), two milk cow and ≥ 1 hectare of cultivable land with chat plantation socially classified as prestige (better of all).

Also an individual HHs owned one ox, one milk cow and ≥ 0.5 and < 1 hectare of cultivable land with chat plantation socially characterized as middle level wealth status. And an individual farming households owned either an ox or a cow milk and < 0.5 hectare of cultivable land with chat plantation socially characterized under low level of wealth.

Therefore, from 167 surveyed farming HHs, 97% of them has been categorized under low level of wealth status. This may limit the farming HHs to invest conservation activities in sustainable way. Moreover, the survey conducted concerning the wealth status of farming HHs as a major factor that affecting community participation in

sustainable soil and water conservation activities shows that from 167 surveyed farming HHs, 99% and 1% of them answered the question by saying “yes” and “no” respectively. This implied that the low wealth status of individual farming HHs limits sustainable investment of conservation activities because the low income and wealth status force the farming HHs to participate in daily income generating activities to fill food gap created within family.

The small size of land crates low level of annual agricultural income which leads to creation of low status of wealth. This situation forced 54% of surveyed farming HHs to participate in daily income generating off farm activities to cover food gap created because of low level annual agricultural income. Due to different factors the rest 46% of surveyed farming HHs were not engaged in daily income generating off farm activities.

The social factors influence sustainable participation of community in soil and water conservation activities identified. Hence the result of the study conducted in similar area shows that the low level of education, health and low status of women and youth participation characterized under social factors affects sustainability of communities' participation in sustainable soil and water conservations activities (*Berhanu and Swinton, 2002*). Moreover, the demographic data of this study indicated that from 167 surveyed farming HHs 66% did not attend formal education. These create the inconsistency of community participation in sustainable soil and water conservation activities. Moreover, the survey conducted confirms the low status of education affecting consistent participation of community towards sustainable soil and water conservation activities. Hence, from 167 surveyed farming HHS 99 % of them supports the fact that low education affects sustainability of community participation, whereas insignificant 1% answered the question by saying that low level of education did not affect sustainability of participation in conservation activities.

In conclusion of the above findings, the low educational status affects awareness level of farming communities' which leads to creation of inconsistency of community participation in sustainable soil and water conservation activities.

The wealth status of surveyed farming HHs analyzed, hence, the focus group discussions conducted in three sampled kebele thoroughly discussed and recognized the low status of health affecting the consistency of community participation in sustainable soil and water conservation activities. Moreover, they explain the importance health by saying that “health is our wealth”. It means that loss of health even for day resulted in loss of income and encore expense may create reduction of wealth among family members. Also, the group mentioned the health status of their area by saying that:

Even though, health coverage of a village placed at a better status, unpredictable health problems have been prevailing. These health problems affect not only sustainability of participation in sustainable soil and water conservation activities but also decreasing annual income and wealth of farming communities.

This implies that the unpredictable outbreak disease such as common cold and Dehydration disease may affect the consistency of community participation in sus-

tainable soil and water conservation activities. The same way, the survey conducted with 167 farming HHs indicated that the health problem basically affects sustainability of community participation in sustainable soil and water conservation activities. Hence, from 167 surveyed farming HHs, 99% of them support the low health status as factor that affect consistency of participation, whereas 1% of them oppose the above idea by justifying unpredictable health problem influencing participation insignificantly.

To windup, the above mentioned results support the fact that the health problem (low health status) in the village not only affects sustainability of community participation but also devlines family annual income and wealth.

The status of women participation in sustainable soil and water conservation activities was investigated. Hence, the three conducted focus group discussions pinpoint that house work load and low level of family income affects women participation in sustainable conservation activities. Also, the KII result shows that the house work load, participating in daily income generating off farm activities and child care affect women participation in sustainable conservation activities, whereas, the weak attitude existing among community towards women participation affects sustainable participation of women in conservation activities.

Furthermore, from 167 surveyed farming HHs, 88% of them justified house work load as major factor that influenced women participations, whereas 12% of them reason out the low capacity of women in performing conservation structures as major factor that affect women participations (table 7).

By the same token, result of the study conducted in similar area indicated that weak empowerment of women participation and low status of women participation leads to creation of inconsistent community participation (*Bezuayehu et al., 2002*).

At the end, the above results support low status of women participation in each stage of conservation which creates inconsistency of community participation in sustainable soil and water conservation activities.

The status of youth participation in sustainable soil and water conservation activities was examined. Hence, discussions undertaken within focus groups show that the small size of farm, low annual income and requiring better income affect youth participation in sustainable soil and water conservation activities.

In addition, the survey result indicated that from 167 surveyed farming HHs 74% of them comprised youth in their family, whereas, 26% did not comprise youth in their family. As a result, from 123 farming HHs comprised youth in the family, 58% of them did not empower youth to participate in conservation activities despite the fact that empower them to participate in daily income generating activities, whereas, 42% of them empowered youth to participate in conservation activities.

To sum up, the data supports the fact that less empowerment of youth participation in conservation activities may affect the consistency of participation in conservation activities.

The cultural factors influenced the sustainable participation of community in sustainable soil and water conservation investigated. Hence, the conducted focus group discussion indicated that the not proactively reacting

Table 7. – Respondent response about women participation in sustainable SWC activities

	Question about women participation	Frequency	Percent
1	Do women (both household headed and spouse) similarly participate in SWC work?		
	Yes	5	3
	No	162	97
	Total	167	100
2	If women do not equally participated what is the reason behind		
	men are more effective	12	7
	house work load	147	88
	lack of capacity in practicing conservation structures	8	5
	Total	167	100
3	Do women in your locality/ village equally participate in share and control of resource (plant, fodder and water) of conserved communal land?		
	Yes	56	33
	No	111	66
	Total	167	100
4	Are women equally represented in the leadership of the village in sustainable soil and ware conservation activities?		
	Yes	21	12
	No	146	87
	Total	167	100

Source: Own survey, May 2017

against land degradation despite of acting on rehabilitation land degradation affects sustainable management of natural resources.

Also, the effect of community culture towards sustainable soil and water conservation was examined through survey. Hence, from 167 surveyed farming HHs, 87% of them confirm the fact that existing culture did not pro-actively react against land degradation.

The relation between political factors and sustainable soil and water conservation activity were examined through focus group discussion. Hence, the result of focus group discussion shows that, even though, the existing natural resource management policy and strategies were conducive, the low capacity and commitment of the front line leaders and mobilization agent to materialize the existing community mobilization strategies are the major factors that affect the consistency of community participation in sustainable soil and water conservation activities.

Furthermore, the survey conducted confirms the above findings with justification of the low capacity and commitment of front line leaders in materializing the community mobilization strategies to wards conservation

activities affects the sustainable participation of community in practicing sustainable conservation activities. To summarize, from 167 surveyed farming HHs 89% of them confirm the idea that the existing policy is conducive, whereas 11% oppose as the existing policy is not conducive. By the same token, from 167 surveyed farming HHs 87% and 81% of them approve the idea that front line leaders and mobilization agent are placed under low level of capacity and commitment to implement mobilization strategies towards sustainable soil and water conservation activities, on the other hand 13% and 32% of them are capable and committed respectively.

The statistical significance of perception of informants about the factors that influence the sustainable participation of community in sustainable soil and water conservation tested by Kruskal Wallist Test based on three agro-ecological zones of study area. Therefore, the result indicated that all P-values (1.00, 1.00, 1.00, 0.193, 0.17, 0.11, 0.49) are >0.05 which implied that there is no statistical significance perception difference between informants gathered from three agro-ecological zones of the study (table 8).

Table 8. – Kruskal Wallist Test on Respondent perception of factors that affect CP

Variables	Response				chi-square	D/freedom	P-Value
	Yes		No				
	Frequency	%	Frequency	%			
Do you think small size of land affect your level of participation	167	100	0	0	0.00	2	1.00

(table 8 continued)

Variables	Response				chi-square	D/freedom	P-Value
	Yes		No				
	Frequency	%	Frequency	%			
Do you think low level of income and wealth affect your participation	167	100	0	0	0.00	2	1.00
Do you think low status of education and health affect your participation	167	100	0	0	0.00	2	1.00
Did women equally participate	21	12.6	146	87	1.78	2	0.49
Are women equally represented in leadership of conservation activities	56	33.5	111	66.5	13.45	2	0.001

Source: Own survey, May 2017

Discussion

The unstable and irregular participation of civic society in process of sustainable soil and water conservation measures is taken as the central problem of the study area. Therefore, identifying and measuring the importance of civic participation in the process of sustainable soil and water conservation measures and factors affecting their sense of ownership participating in the process of soil and water conservation measures considered as the general objective of this study has been investigated through exploratory sequential mixed research approach in which the qualitative data followed by quantitative data collected and analyzed initially. Then the analyzed qualitative and quantitative data results were presented in the way supported by quantitative data and the qualitative data results.

The importance of measuring community/civic participation, factors that affect sense of ownership among community/ civic participating in the process of sustainable soil and water conservation measures have been addressed by this study. So, mobilizing and measuring genuine participation of community/civic in the process of sustainable soil and water conservation measures has significant importance for developing the level of civic awareness which leads to enhance their sense of ownership in mobilizing and monitoring the required resource (land, tool and labor) used for implementing conservation activities sustainably. Besides that, the community has been gained economic, social and environmental benefit from participating in conservation activities. On the other hand, the level of sense of ownership among community/civic society which has been most important to mobilize participation in the process of sustainable soil and water conservation mostly affected by unfair distribution of resource produced on rehabilitated land, unreasonable mobilization of civic resource for far distant conservation area which lead to exhaust their time and energy which weaken effective participation of local community in the process of sustainable soil and water conservation measures, predominantly at planning and evaluation stage of soil and water conservation measures which leads to decreasing the level of community awareness in the process and implementation of soil and water conservation measures.

To sum up, community participation in the process of sustainable soil and water conservation is mostly affected

by small size of farmland which leads to having small amount of income and wealth per year considered as economic factors, whereas, low level community awareness, low status of community education and health, low status of women and youth participation in conservation activities are classified as social factors, similarly, reactive action of community toward land degradation is considered as cultural factors that affect sustainable participation of community, at the end the low capacity and commitment of frontline leaders and mobilization agent in sustainably mobilizing community is categorized as political factors that affect sustainable participation of community toward conservation activities. To sum up, unconvincing mobilization of community resource (labor, tools and finance) to far distant conservation activity as well as the low capacity and commitment of front line leaders and mobilization agent has been identified in addition to other economic, social, political and cultural factors already identified in the study conducted in similar agro ecological zone (*Bezuayehu et al., 2002*) as factors that affect community sustainable participation and sense of ownership in practicing conservation activities sustainably. This study finding expected having a great contribution for future researcher to investigate more and come up with most possible alternative concerning the small size of farm land identified and indicated by this study as economic factors that affect sustainable participation of community towards conservation activities. Also, the study findings are useful to local leaders and mobilization agent as input used for creating effective community mobilization towards sustainable conservation activities.

Conclusions

The general objective of this study is measuring the importance of community participation and identifying factors that affect community sense of ownership participating in the process of sustainable soil and water conservation measures. The work has been done through exploratory sequential mixed research approach in which the qualitative data was followed by quantitative data which had been collected and analyzed initially. Then the analyzed data had been presented in the way that the quantitative data result supported the qualitative data results.

Therefore, it is possible to conclude that the awareness level of community/civic can determine their sense

of ownership in mobilizing and monitoring their effective participation in the process of soil and water conservation measures, specifically mobilizing resource (land, farm tools and labor) used for practicing in soil and water conservation measures from which the local community has gained economic, social and environmental benefit.

On the other hand, the level of sense of ownership existing among civic/ local community has a significant role in transforming community participation in sustainable soil and water conservation process which has mostly been affected by unfair distribution of resource produced on rehabilitated land, unreasonable mobilization of civic resource for far distant conservation area which lead to exhaust their time and energy which, in turn, weaken effective participation of local community in the process of sustainable soil and water conservation measures, predominantly at planning and evaluation stage of soil and water conservation measures which leads to decreasing the level of community awareness in the process and implementation of soil and water conservation measures.

Also, local community leaders and mobilization agent were considered as the most possible options that could be used for transforming civic participation and monitoring at all stages of sustainable soil and water conservation process.

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УЧАСТЬ ГРОМАДИ У СТАЛОМУ ЗБЕРЕЖЕННІ ҐРУНТУ ТА ВОДИ: КЕЙС ГОРО ГУТУУ ВОРЕДА ОРОМІЯ

Одним із проявів глобальної екологічної кризи є проблема зниження якості ґрунтів і скорочення водних ресурсів на Африканському континенті. Автори статті звертаються до досвіду громадянських спільнот Ефіопії в організації стійких громадських заходів із збереження ґрунтів і води. Адже це питання є центральним для виживання значної кількості населення Ефіопії. Для вивчення ставлення

громадськості до екологічних ініціатив були залучені методи анкетування, аналізу документів і польові спостереження. В ході комплексного дослідження було проведено 203 заміри, під час яких 24, 12 і 167 респондентів, відповідно, взяли участь в FGD, KII та опитуванні. Отримані дані були якісно та кількісно проаналізовані. Статистична значимість різниці у сприйнятті респондентів, опитаних в трьох агроекологічних зонах, перевірена за допомогою тесту Краскала Уолліста. Це дослідження фіксує надзвичайну важливість суспільної участі у вирішенні екологічних проблем, включаючи такі операціональні складові як: обізнаність, почуття причетності до спільної справи, прозорість, впевненість у правильності власних дій. Були встановлені та підтверджені кореляційні залежності між незначними розмірами агроферм – з одного боку та низьким рівнем річного прибутку й добробуту – з іншого; між низьким загальноосвітнім статусом господаря – і реактивним культивуванням фермерських угодь, низьким рівнем залученості до природоохоронної активності, слабким потенціалом громади. Лідери думок вказували на конкретні економічні, соціальні, культурні й політичні чинники, які впливають на постійність участі громад у стійкій діяльності з охорони ґрунтів і водних ресурсів. За результатами проведеного дослідження розроблена низка рекомендацій для Бюро сільського господарства і природних ресурсів Ефіопії. Зокрема, пропонується переглянути та визначити чіткі стратегії щодо права власності/права використання ресурсів на закритих сільськогосподарських ділянках. Крім того, районне і зональне управління сільського господарства і природних ресурсів має популяризувати передовий мобілізаційний досвід громад, застосовувати освітні та мотиваційні заходи. Перспективами продовження даного дослідження є розробка альтернативних сценаріїв, спрямованих на мінімізацію впливу малих розмірів агроферм на рівень річного прибутку і, як наслідок, на нерівномірність участі в стійкій громадській діяльності із збереження ґрунтів і водних ресурсів.

Ключові слова: громадська участь, екологічні проблеми, захист ґрунтів і вод, Ефіопія.

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