Journal of Academia and Industrial Research (JAIR)
Volume 7, Issue 2, July 2018



ISSN: 2278-5213

Research Article

# Effect of Land Tenure Systems on Soil and Water Conservation Practices in North Gondar, Ethiopia

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*Received: May 03 2018/Accepted: 16 June 2018/Published: 07 July 2018*

## Abstract

Land tenure systems are often seen as a precondition for intensifying agricultural production and are now increasingly stressed as a prerequisite for natural resource management and sustainable development. The study was conducted in Telemt, Wogera, Chilga and West Belesa districts of North Gondar zone, Ethiopia. The study was aimed to identify the land tenure system operated, examining the effect of land tenure systems on soil and water conservation practices and identifying the roles of the government and other institutions in promoting soil and water conservation practices in the study area. To attain stated objectives two multistage sampling was employed, purposive sampling for the selection of districts and simple random sampling for the selection of kebeles (villages) and sample respondents have been utilized for data collection for the study. The descriptive statistics mainly percentages and means were used for analysis of quantitative data collected. Qualitative data were analyzed through narration from sample respondents. Data were collected primarily through questionnaire by trained enumerators. The finding of the research indicates that farmers can or cannot transfer their land through inheritance for their children. But most of them reported that as they can use land throughout their life time. The common types of the land tenure which exist in the study area were private owned, state owned, communal and open access. Land tenure ownership enables farmers to increase production, conserve natural forest, conserve soil fertility and increase their participation. However, shortage of labour, lack of grazing, over grazing and damage of constructed soil and water conservation practice (SWCP) were the side effects of some land tenure ownership types. Extension service (advice and training), material support and credit were the major SWCP service provided by governmental, non-governmental and institutions.

**Keywords:** Land tenure systems, agricultural production, North Gondar zone, conservation practices.

## Introduction

Land is considered as the most fundamental resource to the poor and is essential for enabling them to lift themselves out of poverty. More than 80% of the active population in Ethiopia is dependent on land for livelihood. Land tenure is the system of rights and institutions that govern access to and use of land (Adams *et al.*, 2001). It can be further defined as the terms and conditions under which land is held, used and transacted and is one of the principal factors determining the way in which resources are managed and the manner in which benefits are distributed. Providing land tenure systems is often seen as a precondition for intensifying agricultural production and is now increasingly stressed as a prerequisite for better natural resource management and sustainable development. Rural people generally need both secure individual rights to farm plots and secure collective rights to common pool resources upon which whole villages depend.

Currently there is a massive mobilization of the community in soil and water conservation activities for better productivity of the land. According to Lovo (2013), providing land title increases security for small holder farmers and lead to greater investment. Tiffen *et al.* (1996), Mwakubo (2002) and Lovo (2013) suggested that secure land tenure is important for sustainable land use through implementation of soil and water conservation practices. According to Kahsay (2011), land tenure system was not precondition to farmers' decisions on soil conservation practices but additional factors like non-farm income generating activities, availability of labour at household level and education levels have positive effects on determining farm households' decisions to invest in soil. Land tenure system as factor affecting the decisions of farm households on soil conservation practices vary from area to area and are diverse in nature as reported by Sabita (2010).

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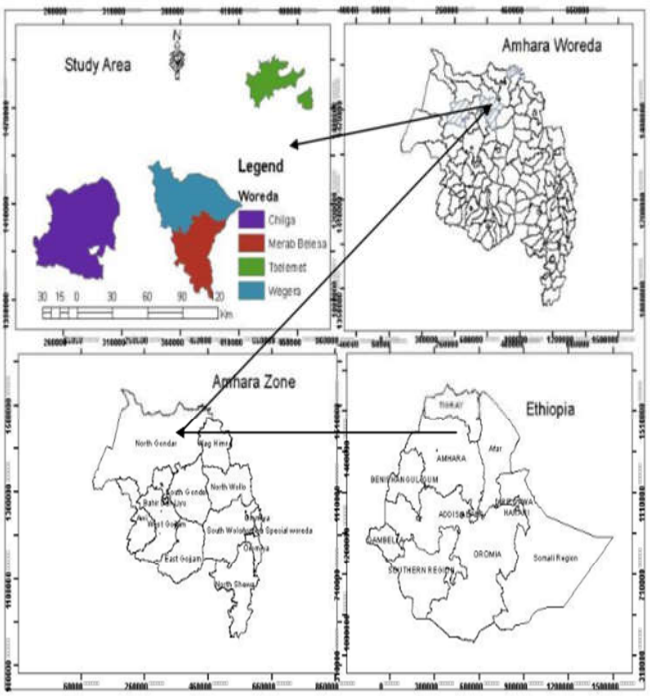
Fig. 1. Map of the study area.




The empirical evidence indicates that land tenure system may or may not have effect on SWCP. But different research studies lack information regarding to effect of different types of land tenure system on SWCP rather generalizing of land tenure system on SWCP. In addition to these research gaps in the study areas there was no much research conducted related to effect of land tenure system on SWCP. Therefore, there is a need to study the effects of land tenure systems on soil and water conservation practices to fill information gap in the North Gondar, Ethiopia. Hence the present study was aimed, to identify the land tenure system operated in the study area; to examine the effect of land tenure systems on soil conservation practices in the study area and to identify the roles of the government and other institutions in promoting soil and water conservation practices.

## Materials and methods

***Sampling techniques and sample size:*** Farmers who live in four districts of North Gondar, Ethiopia were selected for the study. The sampling procedure used was two stage random sampling. In the first stage the four districts were purposively selected. Purposive and simple random sampling techniques have been employed. Four districts from North Gondar Zone were selected purposively. Simple random sampling was used to select kebeles (villages) and sample respondents. Accordingly 600 farmers were selected from four districts (Chiliga, Telemit, Wogera and West Belesa districts) (Fig. 1).

***Data collection:*** As sources of information primary data sources was used. The primary data such as Tenure arrangement (types of land tenure system), institutional support, and effect of land certification on SWCP and extension services provided were collected by using structured questionnaire. Schedule interview was used to collect data from the 600 farmers through trained enumerators. Descriptive statistics such as percentage and frequency were used to analyze the socio-economic characteristics and effect of land tenure systems on SWC practices of small holder farmers.

## Results and discussion

***Demographic characteristics of sample household:*** The study was conducted in four districts having total of 243 sample respondents. From the total sample household 86.0% sample respondents were male headed households where as 14.0% of sample respondents were female headed households (Table 1). From the sample respondents 85.6%, 3.3%, 3.7%, 3.3%, 3.3% and 4.1% were married, divorced, single, widowed, widowed and separated, respectively. The 29.2%, 51.9%, 0.4%, 16.9% and 1.6% no schooling, read and write, elementary, secondary school and higher education, respectively.

***Land tenure right, use and registration:*** Among the respondents, 99.2% said that they can transfer their land through inheritance but only 0.8% said as they cannot transfer land through inheritance for their children. The result of the study also indicates that 98.8% of the respondents can use the land throughout their life time. Only 1.2% responds as they cannot use the land throughout their life time. In the present research for a question asked that, if the government allows the farmers to sell their land, 20.6% of the sample respondents agreed, 71.6% disagreed and 7.8% told it is difficult to decide. In the study areas there was land rented in and rented out trend where in 47.3% and 39.1% of the sample respondents rented in and out land respectively. But 52.7% and 60.9 % of the individual did not rent in and out land, respectively. As research result indicates rented in and rented out individuals have their responsibility for keeping land quality. According to the study 98.4% of the sample respondents registered their plots. But 1.6% of the respondents did not register their plots. From the registered land/plots 96.7% and 3.3% the respondents said that they had certificate and had not certificate for their plots respectively. The 95.0% sample respondents said that having certificate on their plots increases participation on SWCP. Only 5% of the respondents said that having certificate did not increase participation on SWCP.

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Table 1. Marital status and educational level of sample household.

| Marital status | Married | divorced | single | widowed | separated | Total |
|---|---|---|---|---|---|---|
| Frequency | 208 | 8 | 9 | 8 | 10 | 243 |
| Percentage | 85.6 | 3.3 | 3.7 | 3.3 | 4.1 | 100% |
| Educational level | no schooling | read and write | elementary | secondary school | higher education | Total |
| Frequency | 71 | 126 | 1 | 41 | 4 | 243 |
| Percentage (%) | 29.2 | 51.9 | 0.4 | 16.9 | 1.6 | 100% |

***Strategies for access to land and land right:*** From the total sample respondent 69.1%, 8.2%, 25.9%, 18.9%, 25.5% and 45.3% of the farmers have gained land access through customary rights, purchase, adverse possession or prescription, leasing, share cropping and inheritance, respectively. From these 83.3%, 80.0%, 54.0%, 87.0%, 75.8% and71.8% of the sample respondents applies SWCP on their land they got by customary rights, purchase, adverse possession or prescription, leasing, share cropping and inheritance, respectively. But only 16.7%, 20.0%, 46.0%, 13.0%, 24.2% and 28.2% of the respondents did not apply SWCP on the land acquired through customary rights, purchase, adverse possession or prescription, leasing, share cropping and inheritance, respectively. According to the research result farmers who gain access to land through variety of strategies have three major types of land rights such as use right, transfer right and control right. A single farmer might have combination of land rights who access land currently. From the total sample respondents 34.6% of the farmers gained land through land redistribution. Among these respondents 96.4% and 3.6% apply and did not apply SWCP. The 5.8% of the sample respondent got land through resettlement. All farmers who gained land through resettlement applied SWCP to keep their land from degradation. Like individual /group strategies farmers who gain land through government intervention strategies such land redistribution and resettlement had also three major types of land rights such as use right, transfer right and control right. And farmer used combination of land rights who access land currently.

***Overview of land tenure system in Ethiopia:*** Because of the country's geographical, ethnic and cultural diversity, the pre 1975 land tenure system in Ethiopia was generally noted as the most complex in the world but it was not studied in detail (Cohen and Weintraub 1975; Dejene 1999 quoted in Nega *et al.,* 2002). During that period a variety of classifications and approaches were employed to describe the land tenure system. Rist/ kinship, communal, private, state and church land tenure holding were the most common ones (Admassie, 2000; Nega et al., 2002; Kahsay quoted in 2011). The 1975 land reform measure by the 'Derg' mainly abolished tenant landlord relationships in the nation. This was designed with the aim of distributing land to the tillers, to increase agricultural production, create employment and provide a basis for expansion of agriculture. Since the 1975 land reform the right to own land is vested in the state. Article 40 of the 1995 constitution (which concerns property rights) of Ethiopian People's Revolutionary Democratic Front (EPRDF) provides that "the right to ownership of rural and urban land, as well as of all natural resources, is exclusively vested in the state and in the people of Ethiopia". Through state appointed Peasant Associations (PA) farmers have open-ended usufruct rights (the right to use another's property) to land in the areas where they physically and permanently live. It includes criteria like the ability to farm continuously and meet administrative dues and obligations. These use rights are inheritable (Nega *et al.,* 2002). The constitution also states (Article 51) that the Federal Government shall ratify laws for the utilization and conservation of land and other natural resources. Article 52 also states that Regional Governments have the duty to administer land and other natural resources according to federal laws. This law was enacted in July 1997 through the "Rural Land Administration Proclamation, No. 89/1997" (Nega *et al.,* 2002).

***Types of land tenure ownership in the study area:*** This study revealed that the most common types of the land tenure which exist in the study area were private owned, state owned, communal and open access. All of the land tenure ownership has its own effect on the soil and water conservation practices. Among the land tenure type's private ownership was the most practiced one. All sample respondents said that private owned, state owned and communal land tenure ownership have and have no effect on soil and water conservation but all sample respondent said that only open access have effect on soil and water conservation. The 80.8% of the sample respondents who owned land privately said that private ownership have effect on SWC but 19.2% of the respondents said that it has no effect on SWC. The 97.4% and 88.2% of the sample respondents who owned land through sate and communal have effect on SWC but 2.6 and 11.8 have no effect on SWC. All i.e. 100% of sample respondents who owned land through open access said that it has effect on SWC practices.

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Table 2. Land tenure ownership effect on SWC.

| Type of land tenure | Positive effect | Negative effect |
|---|---|---|
| Private | Increase production, yield, conserve soil, fertility, enable to work any SWCP, work on principle of water shade principle | Shortage of labour |
| Sate owned | Productivity, fertility | Plot size decrease, drainage problem, labour cost |
| communal | Conserve soil and water, conserve natural forest, community work together | Lack of grazing, lack of ownership, damage by animal, lack of controller |
| Open | All individual may participate | Soil fertility loss, over grazing, constructed SWCP may be destructed by animal, exposed to soil erosion |

Table 3. Benefit and problem of land tenure system.

| Benefit driven | Problem |
|---|---|
| Family depends on land production , sense of ownership, absence of frustration on land ownership, free production of any crop, livestock and economical trees s/he want , food security , reduction of conflict, presence of use and transfer right, increase benefit of women and old people | Government may snatch the land, it does not make youth to be beneficiary, absence of sale and exchange of land, increase dependence of youth on their family |

The 78.6 % of the respondents apply SWCP on private owned land but 21.4% of the respondents did not applied SWCP. The 90.9%, 82.4%, and 60% of respondents apply SWCP on state, communal and open access land, respectively (Table 2). But the 9.1%, 17.6% and 40% of respondents did not apply SWCP on state, communal and open access land respectively. Most sample respondents in study area said that land tenure system has no any threat related to SWCP. Some respondents said that it has threat on SWCP. The 12.3% and 87.7% of the respondents said land tenure system has and has no any threat related to SWCP, respectively. This finding seems to support Kahsay (2011) finding which the majority of respondents, including focus group participants, also revealed that soil conservation measures are beneficial in terms of improving agricultural outputs. Consequently, all farmers in the research area undertake short-term soil and water conservation practices. At the same time a good number of farmers also undertake long-term soil and water conservation measures in addition to the short-term ones. On the other hand, a few respondents revealed that physical structures particularly the long-term ones are labour intensive and therefore those labour-constrained households are finding themselves in a difficult position to implement these activities on their farmlands. Response of the residents on benefit and problem of land tenure system and effect of land tenure system on SWCP are shown in Table 3. As Kahsay (2011) indicated when households were consulted on their tenure security, 17% of them indicated that they felt moderately secure with the land tenure system, and 50% of respondents (two were females) said that the system was very insecure.

The other 33% of respondents (three of them were female headed households) were unable to clearly identify their feeling and replied 'I don't know'. Discussions with focus group participants, however, clearly revealed that their feeling about the land tenure system was very insecure and many felt very uncomfortable with the system. Despite different views provided on the sense of tenure security, the majority of farmers involved in this research were aware of the problem of land degradation. As a result, whatever the land tenure system in place and no matter how farmers felt about it, the majority of the respondents in the research area argued that land tenure security is not a discouraging factor in farm households' decisions to adopt soil conservation practices or not (Kahsay, 2011).

***Access to agricultural service related to soil and water conservation (Roles of the GOs, NGOs and other institutions in promoting water conservation practices):*** Different organizations provide those services for the smallholders. But some individuals did not get any support from organization or institutions. Governmental (Agriculture office, OoAD and rural land administration), nongovernmental organizations (AGP, SLMP, LIP, PSNP, LISRMP, KFW, Tana & Abay) and institutions (Orthodox Church) provide service for farmers related with soil and water conservation practices. 45.7% of the farmers got support from governmental organization and 27.2% farmers got support from nongovernmental organization. Governmental and nongovernmental organization provide for 23.5% of the farmers together. Only 1.6% of sample respondents got soil and water conservation service from institution.

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Table 4. Roles of the GOs, NGOs and other institutions in promoting water conservation practices.

| Type of organization/institution | Name of organization | Support given |
|---|---|---|
| GO | Agriculture office, OoAD , rural land administration | Training, advice, material, tools, capacity building, technical support, awareness creation |
| NGO | AGP, SLMP, LIP, PSNP, LISRMP, KFW, Tana & Abay | Material support, training, financial support for labour work, Improved seed and breed support, food support, road construction |
| Institution | Orthodox church | nursery establishment by supporting financially, Improved seed and breed support, flour and oil support, motivating , supportive education, coordination |

However, 2.1% of respondents did not get any support related to soil and water conservation practices. Among the services on SWC provided by those organizations were extension service, extension advice, training and credit. Sample respondents got such services in different percentage level (Table 4). The 95.5% of the sample respondents got extension service on SWC. From total sample respondents only 4.5% of the respondents did not get extension service. Governmental organization, nongovernmental and institution provides extension service for 81%, 6.9% and 1.7% of sample respondents, respectively. But all of the organizations and institution gives service for 10.3% of respondents. Only 19.8 % and 14.0 % of the farmers have been visited by DA and not got extension advice on SWCP. But rest of the sample respondents got service in different percentage level. Besides to these training on soil and water conservation and access to credit were also other services provided by different organization and institutions. The 93.8% of the respondents were participated in training of soil and water conservation but only 6.2% of the sample respondents did not participate in training of soil and water conservation practices. 93.0 % of the sample respondents said that training given was useful to conserve soil and water in their locality but rest of the sample respondents said that training given was not useful for their SWCP. In study areas, farmers use credit for different purpose to improve their livelihood. Among respondents 46.1% of respondents have access to credit whereas 53.9% of them did not have access to credit. This study confirms that the findings of Kahsay (2011) which indicated that governmental and nongovernmental organizations in the study area played a significant role in promoting soil conservation practices. Support from these institutions positively contributed to farm household decisions to conduct a range of short and long-term soil and water conservation practices.

## Conclusion

The finding of the study indicates that farmers can or cannot transfer their land through inheritance for their children, but can use land throughout their life time.

More than 50% of the respondents did not agree if the government allows the farmers to sell their land. It was also concluded that there was shortage of land because most of the farmer rented in the land. Almost all farmer land was registered with certificate and having the certificate on their land increases their participation on SWCP. In the study area sample respondents used a variety of strategies to gain access to land such as individual /group strategies and government intervention strategies. Customary rights, purchase, adverse possession or prescription, leasing, sharecropping and inheritance were some of individual /group strategies. But land redistribution and resettlement were the government intervention strategies. The private, state owned, communal and open accesses of the land were the major common types of the land tenure which exist in the study areas. All of the land tenure ownership has its own positive and negative effect on the soil and water conservation practices. The positive effect of land tenure owner ship on SWCP enables farmers increase production, conserve natural forest, conserve soil fertility and increase their participation SWCP. However, shortage of labour, lack of grazing, over grazing and constructed SWCP may be destructed by animals were the major negative effect of some land tenure owner ship types raised by respondents.

In the study areas most of the farmers have access to different agricultural services related to SWCP. Governmental (Agriculture office), nongovernmental (AGP, SLMP, LIP) and institutions (Orthodox Church) provide those services to farmers but some individuals did not get any support from organization or institutions. Among the services on SWC provided by those organizations were extension service (advice, training), material support and credit.

## Recommendations

In study areas small holder farmer said that can or cannot transfer their land through inheritance for their children. However, the government of the Ethiopia said that they can transfer their land through inheritance for their children. There is contradiction of the policy and farmer.

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This indicates that farmer's lacks awareness of land policy of Ethiopia. Therefore, government should organize awareness creation sessions to make law, policy and strategies practical. Entire land should be registered and certified hence it increases their participation on SWCP. The land of the study areas were owned through the private, state owned communal and open accesses of the land tenure system. All of the land tenure system has their effect on SWCP. Therefore GOs, NGOs and institutions should fill the gaps which were identified by the present research by appropriate means of extension services in participatory manner. All the individuals should also get those service provided by organizations or institutions equally.

## Acknowledgements

Authors are very grateful to the University of Gondar authorities for funding this research.

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***Cite this Article as:***

Molla, D., Fekadu, G., Awoke, W. and Raffi, M.M. 2018. Effect of Land Tenure Systems on Soil and Water Conservation Practices in North Gondar, Ethiopia. *J. Acad. Indus. Res.* 7(2): 26-31.

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