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THE ROLES OF PRODUCTIVE SAFETY NET PROGRAM (PSNP) ON THE PRACTICES OF SOIL AND WATER CONSERVATION IN THE CASE OF SEKELA DISTRICT, AMHARA STATE, ETHIOPIA

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ABSTRACT

The introduced Soil and Water Conservation (SWC) techniques, practices in the study area were started through the Productive Safety Net Programme (PSNP) from the year 2008 through cash or money incentives. The majority of the conservations were practiced on communal lands. The reason for investing on communal lands was that there was little or no care for conserving and managing communal lands by the individuals. Therefore, the objective of this research was carried out to analysis the roles of Productive Safety Net Program (PSNP) on the practices of soil and water conservation in the case of Sekela District, Amhara State, Ethiopia. Household questionnaire, focus group discussion, case study and Key informants interview methods were applied to collect the necessary information from farm households. A total of 90 households were selected in both served and not served by the program. The survey result shows that in the study area in addition to efforts made by the government soil and water conservation techniques were implemented by the PSN program. But now, the soil conservation techniques practiced by the program was discontinued today. Therefore, before starting to practice of any conservation activity, awareness creation to the people in relation to the use of the technology; and investigate the socio-economic and biophysical variables is very essential.

Keywords: PSNP, Soil conservation, Served by the program, Not served by the program, Case study, Ethiopia.

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Contribution/ Originality

This study contributes in the existing literature for the program involving in soil and water conservation practices. This study is important to investigate the roles of the Productive Safety Net Program on soil conservation.

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1. INTRODUCTION

Ethiopia is one of the most well endowed countries in Sub-Saharan Africa in terms of natural resources including fauna and flora (Gete *et al*., 2006). However, it faces different problems in related to natural resources. From this, soil erosion is one of the most serious environmental problems (Million and Kassa, 2004). The cause of this is associated with low adoption and/adaptation SWC technology, topographical factor, the increasing of population and institutions and policy issues (Gizachew, 1994; Gete *et al*., 2006; Gizaw *et al*., 2009). The causes of soil erosion is also related to surface run-off draining to neighboring countries by trans-boundary rivers, land cover change (Woldeamlak, 2002) Land degradation was not giving attention by policy makers until the 1970s (Genanew and Alemu, 2010) and by the components of climate (rainfall and wind) (Bezuayehu *et al*., 2002).

Due to the above factors, soil erosion results roughly two billion hectares of land were being affected by soil degradation in the world (Hurni, 2002) milk yields decline about one to fourth of the average for all developing countries in each year (Pender *et al*., 2002) and in Ethiopia results crop yield per year is expected to decline by one to three percent (Mitiku *et al*., 2006).

Due to this, Ethiopia faces the challenge of achieving food security. Recognizing the seriousness of its soil fertility problems and the necessity of improving agricultural productivity, the Ethiopian government and international donors have initiated a number of programs that promote yield-enhancing and dissemination of soil and water conservation techniques (Mahmud and Kohlin, 2009). According to Zenebe (2009) there are three categories of SWC extension program in Ethiopia, i.e. pre- 1968, between 1968 and 1991 and post-1991. It is reminded that 1968 was a year underlying a relative change in emphasis both to agriculture, in general, as well as to conservation, in particular (Zenebe, 2009).

In due course, the national SWC and afforestation efforts were induced in response to the 1972/73 drought and its consequences (Slegers *et al*., 2004). For the afforestation programme, *Eucalyptus* species became the centre of endeavor throughout large-scale plantation schemes in the country (Feyera *et al*., 2010). The efforts make in to practices in soil conservation was started since the 1970s and 1980s through food-for-work payments for motivating farmers (Abera, 2003; Ludi, 2004) and supported by donor and non-governmental organization in areas where the problem of soil erosion is destructive and food deficit is widespread (Bekele and Holden, 1998; Gizaw, 2010).

From the year 1971- 1993, a massive soil conservation programme was launched in Ethiopia using the food-for-work incentive. During that period, 15% of the Ethiopian highlands that required conservation efforts were covered (Hurni, 1998). In terms of physical works:

- About 600 km of earth and stone bunds were constructed on cultivated lands;
- About 300,000 km of hillside bunds were built for the afforestation of steep slopes;
- About 100,000 ha of hilly land were closed for regeneration of natural vegetation;
- Thousands of tree seedlings were raised in nurseries and transplanted on the afforestation sites and

- Thousands of check dams have been constructed in gullies

However the food-for-work program often regarded by the local people merely as a way to get food for survival (Yibabe, 2002). When the food-for-work program was discontinued do to the fall of the durg régime, the conservation measures failed to give the expected output (Woldeamlak, 2003). Due to the failure of the SWC, a slogan which was often cited in the environmental movement of the 1980s and 1990s is *'think globally -act locally'* (Hurni, 2002).

The introduced SWC techniques practices in the study area were started through the Productive Safety Net Programme (PSNP) from the year 2008 through cash or money incentives. The majority of the conservations were practiced on communal lands. The reason for investing on communal lands was that there was little or no care for conserving and managing communal lands by the individuals. However, now a day, the soil conservation techniques are practicing on communal lands, individual farmlands, in gully areas and mountain or sloppy areas through community mobilization and individual farmers in his/her lands without any payments made since the Productive Safety Net Programme (PSNP) was discontinued today.

1.1. Objectives of the Study

1.1.1. Main Objective of the Study

The main objective of this study is to analysis the roles of Productive Safety Net Program on the practices of soil and water conservation in the case of Sekela District, Amhara State, Ethiopia

1.2. Site Description (Location) 10°55'00"

The study area is located in Amhara state; north western Ethiopia within the geographical grid coordinates of 10°55'00" to 11° 05'00" North latitude and 37°05'00" to37°15'00" East longitude.

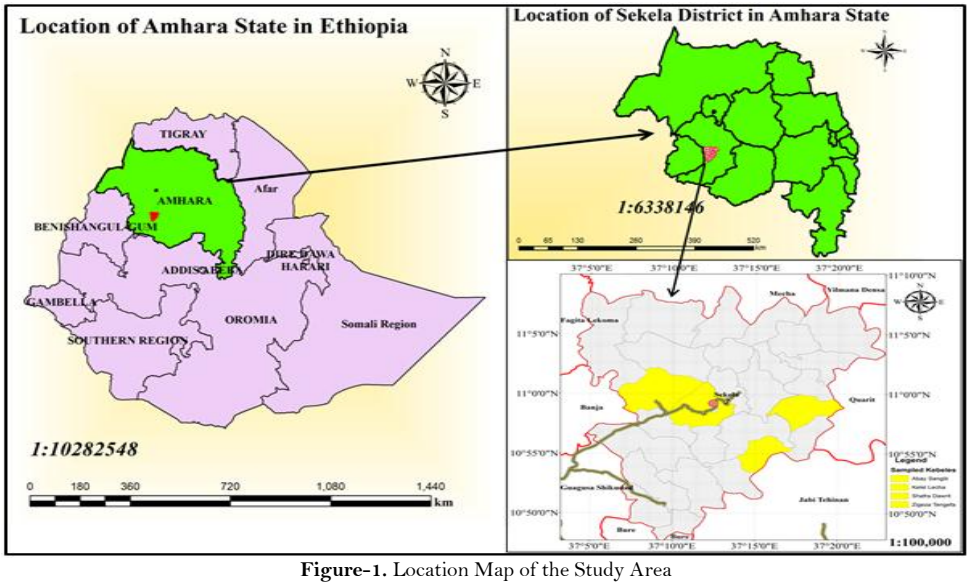

Figure-1. Location Map of the Study Area

1.3. Topography, Agro Ecology, Climate and Water Resources

Steep slope and undulated topography is a typical characteristic of the study area. The majority (75%) of the study area is mountainous and consists of dissected terrain with steep slopes, and the remaining (25%) has an undulated topography with gentle slopes. The study area is located in altitude ranges from 2000-3400m Above Sea Level (ASL) (fig. 2). According to the traditional agro-climatic classification, the study area lies within *dega* (cool to cold humid) and *woina dega* (warm to cool semi humid). The climate is humid with an average annual rainfall of more than 1600 mm.

In Sekela District, there are 5 major rivers that flow permanitilly, 38 small tributaries, 105 springs and one lake are found. The major rivers are Abbay, Guder, Lahie and Jemma. Despite the widely held view that the Blue Nile originates from Lake Tana, the local people and District level officials strongly believe that the Gish Mountain is the true source of Blue Nile.

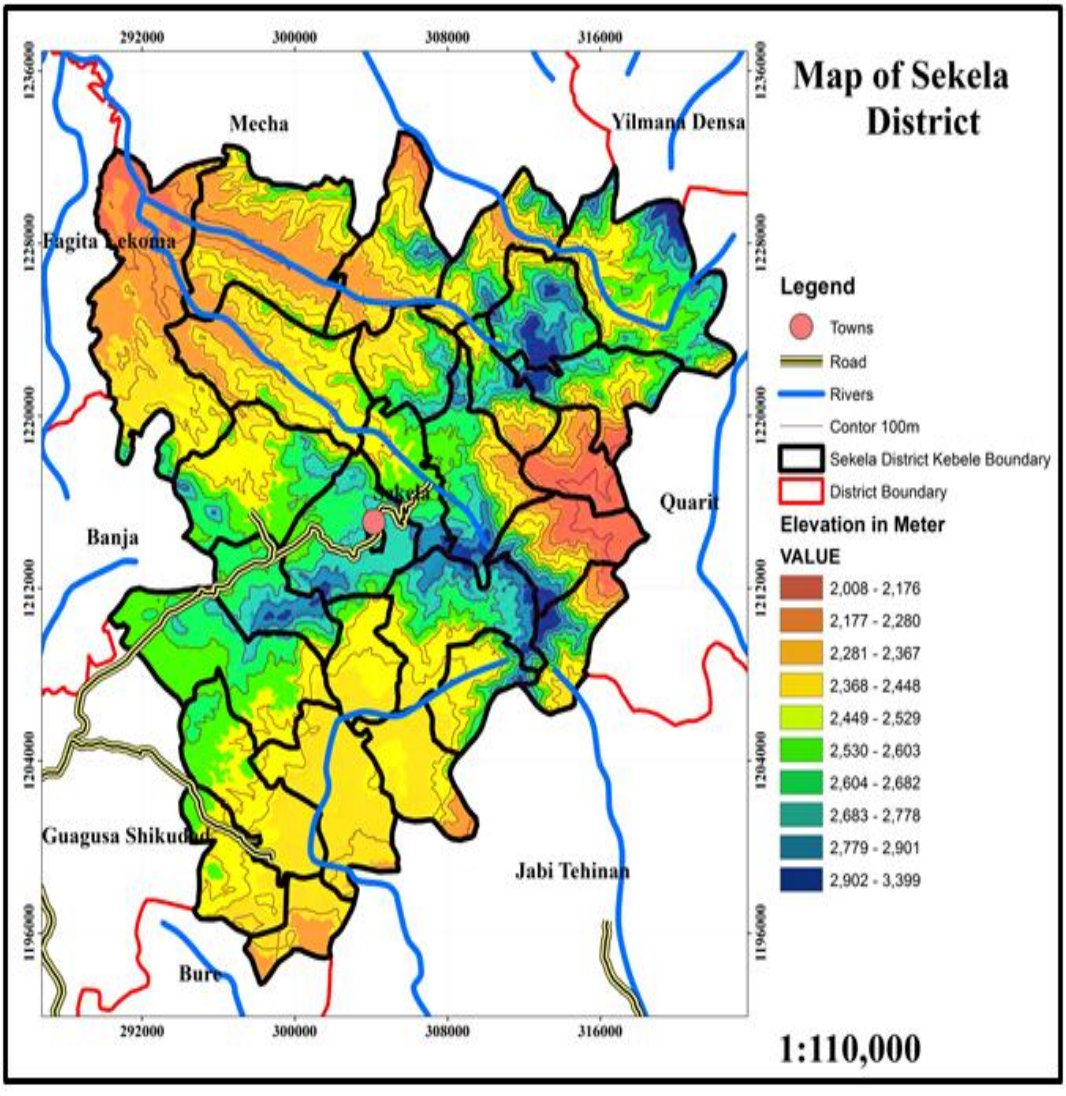

Figure-2. Elevation, Contour, Road and River map of Sekela district

2. MATERIALS AND METHODS

2.1. Sampling Techniques and Designs

The study was conducted in Sekela District, West Gojjam zone of Amhara State during 2012. The district was selected due to the fact that in the area, there is great soil erosion takes place. And in some extents there is the practicing of some coping mechanism works has been undertaken (indigenous and introduced) at the current time due to high soil erosion. Once the district was selected, purposive sampling was employed to identify Kebele Administrations in which previously served and non-served by the PSNP. In this study, four Kebele Administrations were selected; those two (2) Kebele Administrations from the served and two (2) Kebele Administrations from not the served once. The size of the sample depends on the available fund, time and other reasons and not necessarily on the total population. Hence, the total sample size for the study was 90 household heads were selected in the four Kebele Administrations by using random sampling from the list of all farm households available in the selected Kebele Administrations. Based on their total population of each Kebele Administration, proportional sampling methods were used for household survey study.

Table-1. Sample respondent selection across each Kebele Administrations

No.	KAs	Served by the PSNP	Total Household	n	%
1	Abay-Sangib	✓	1150	28	31.11
2	Kolelie- Lecha	✓	1119	27	30
3	Shafra-Dawurit	*x*	795	19	21.11
4	Zegeza-Tenigefa	x	648	16	17.77
	Total		3712	90	100

Source: from each Kebele Administrations, 2012; n- sample size

2.2. Methods of Data Collection

Both primary and secondary sources of data were used in this study. Secondary sources of data were obtained from various published and unpublished sources of the governmental and nongovernmental organizations. Internet sources and research reports were employed for acquiring the necessary information. Information was also obtained from reports of District agricultural and rural development office and finance and economic development office about the socioeconomic, demography, educational, and other information related to the District. The above information was collected through household questionnaire, focus group discussion, case study and ***Key informants interview.*** Key informants interview were carried out purposefully with elder peoples those are served by the PSNP and gets cash or money.

3. RESULTS AND DISCUSSION

3.1. Organizations Working On Soil and Water Conservation Techniques in the Study Area

In the study area, in addition to governmental organization, there are non-governmental organizations working on soil and water conservation activities. Some of these Non-

Governmental organizations that work on soil and water conservation techniques in the study area are GTZ which started in 2007, PSNP started in 2008, and FAO started in 2010.

3.2. Productive Safety Net Programme (PSNP)

In Ethiopia, food insecurity has long been a wide spread problem. In 2005, to combat the persistent problem of food insecurity and to move away from the previous system of annual emergency petition, the Ethiopian government and association of donors launched a new social protection program called Productive Safety Net Program (Gilligan *et al*., 2008; Andersson *et al*., 2009a). This program is the largest social protection scheme in Africa social grants schemes. The PSNP delivers social transfers to some eight million Ethiopians each year, either through public works activities or as direct support for households that are labour – constrained (Devereux and Guenther, 2007).

Productive safety net program (PSNP) in the study area creates awareness for soil and water conservation techniques in 2011but now this program was discontinued. From the survey results it can be concluded that those farmers participating in PSNP have adopted the introduced soil and water conservation techniques. One of the objectives of PSNP is awareness creation concerning to soil and water conservation activities and increasing and assuring food consumption. From table 4.9, 50% of the adopters and 33.3% of the non-adopters are served by the PSNP; where as 50% of the adopters and 66.7% of the non-adopters are not served by the programme.

Table-2. The relation between Participated and/or served and not served by the PSNP

Participated and served by the PSNP	Adopters; n=60		Non-adopters; n=30		χ^2	P
	Frequency	Percent	Frequency	Percent		
yes	30	50	10	33.3	1.111 NS	0.292
No	30	50	20	66.7		
Total	60	100.0	30	100.0		

Source: own survey, 2012. NS: Not *Significant at 5% level*

From the group discussions and survey results we concluded that those farmers participating and served by the program, they said that we have practicing and adopting and/or adapting the introduced soil and water conservation techniques.

When we see participated and served by the PSNP and the adoption of soil and water conservation in each category (adopters and non-adopters), there is statically insignificant between them. This result indicates that there is no deference in the adoption and/adaptation of SWC between the adopters and non-adopters, (χ^2- value = 1.111, P = 0.292). This implies there is no difference in participating and server by the PSNP and not served by PSNP for the adoption of soil and water conservation techniques because the p-value is greater than 0.05.

According to Devereux and Guenther (2007) Productive Safety Net Programme (PSNP) has *three distinct objectives.* These are: *smoothing food consumption* in chronically food insecure smallholder households by transferring food or cash to buy food during the 'hunger gap' months;

Protecting household assets by avoiding damaging 'coping strategies' such as selling productive assets or taking on high-interest loans to buy food; and *Building community assets* by selecting public works activities that create infrastructure with developmental potentials (e.g. feeder roads). These objectives correspond to the three functions of 'protection'; 'prevention' and 'promotion', as identified in some conceptual frameworks of social protection (Fig. 3) which illustrates that Social protection as an *upside-down traffic light* from *red for crisis to green for growth.*

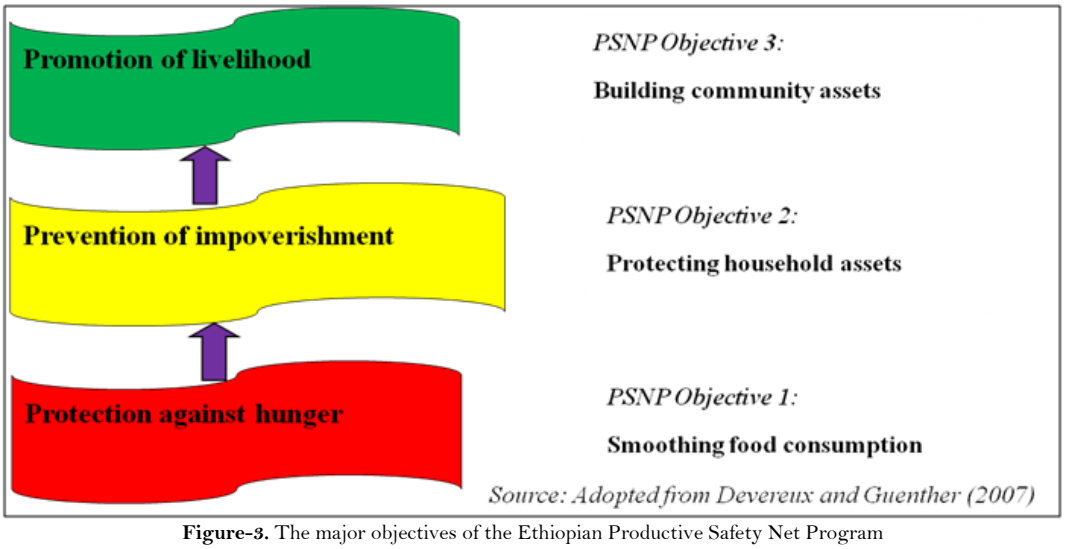

Figure-3. The major objectives of the Ethiopian Productive Safety Net Program

From the interview results with the Developmental Agents and Kebele Managers in Kolelie Lecha Kebele Administration it was possible to understand that, GTZ works on soil and water conservation methods such as check dam, stone and soil bunds. These methods are supported through biological methods such as planting of tees and grasses strips (tree looser (*yekebit meno*), roder grass (*zihonie sar*) on the constructed physical soil-water conservation structures. And also from the interview results with the Developmental Agents of Abay-Sangib Kebele Administration it was possible to understand that, GTZ works on restoring the degraded lands through both by physical and biological conservations. In this Kebele Administration, FAO and PSNP work on sustaining food security. From the interview results with *Woreda* experts, it was possible to understand that the major task of the PSNP in the study area is facilitating access to credit, strengthen agricultural extension, technology dissemination on soil and water conservation, and irrigation and water harvesting schemes. In addition to these activities, the PSNP works on rural road construction (foot paths), fencing and construction of satellite schools.

3.3. Case Study

W/ro Sewunet Mengist is a farmer living in Abay-Sangib Kabele. Her husband died 10 years ago and she is widowed woman. She explains about what she gets from the Productive Safety Net Programme as follows:-

"The source of income for me is simple distillation of local alcohol drink (Arekie) and by cultivation of my small farmland 0.5 hectare (2 Gezim). I have no oxen and horse for ploughing, so the only means is digging by hoe and requesting others who have oxen and horse for assistance. In the year 2008, I was participated in the PSNP on soil conservation and other works and gained 1580 birr. I bought cow and sheep by this birr gained from the programme. At the current time my living standard is somewhat better and I had replaced my house roofing by corrugated Iron roofing house which was with thatched grass roofing". She pointed out that the PSNP contributes a lot in changing the living standard of economically poor farmers including her by assuring food security. She also illustrated that the program had invested high money for functioning the practices of soil and water conservation, but she didn't see any change in the protection of soil erosion and rehabilitation of degraded land. But today the program was discontinued and she is protecting soil erosion on her small plots of land and participating in mass mobilization with assistance of experts.

From the focus group discussion and interview with the farmers it was possible to understand that, the Productive Safety Neat Programme (PSNP) was not fruit full in soil and water conservation techniques. That means the constructed soil-water structures are not sustained to achieve the expected out comes. This is due to: *Firstly*; at the preliminary stage, the program does not create awareness among farmers regarding soil and water conservation techniques and the program itself. The program was not considering the sustainability of the conservation structures. That means the programme was focused on quantity than quality. The participants are not works on behaves of themselves due to lack of effective supervisors and the amount of cash that gained from the program was decreasing from year to year. The amounts of money given to the HHs are determined based on the family size. The larger the family size, the more they get money. An individual household head works 17 days per year. The amounts of money given to the farmers were 240 birr, 170 birr, 13.50 birr from the year 2008, 2009 and 2010 respectively per day based of the family size. They were constructing these structures because of the cash they would earn per day but not because of preventing of soil erosion problems in the area. Porras *et al.* (2007) in this regard also advocates that various short-term incentives have been provided by various agencies. These have enhanced the adoption of conservation measures in the short-term but some direct incentives like cash and Food-For-Work has resulted in weak ownership of the process once the incentives are withdrawal. *Secondly*; the program has suffered from corruption. From the questionnaire results it was possible to understand that, the participant farmers have been selected when they are kingship and close relatives with the bosses or supervisors. This leads to interest conflict between the participants and the others; and which resulted the breaking of the SWC structures by the nonparticipant in the night time. *Thirdly*; after the conservations are done, the areas was not protected from any contact (no area closures). *Fourthly*; lack of the principles of constructing know how and finally lack of management activities. That means once the SWC techniques are implemented, there is no maintenance is done when they are damaged. Plus to this, high soil erosion process and sedimentation on the constructed structures are leads to fail for soil and water conservation techniques.

4. CONCLUSION

In addition to efforts made by the government, there are NGO that practiced on soil and water conservation techniques. Some of these organizations are German Agency for Technical Cooperation which was started in the year 2007, Productive Safety Net Program start working in the year 2008, Sustainable Land Management started in the year 2011 and Food and Agricultural Organization started in the year 2010. But the works which was done by the above program was not fruitful. Therefore, before starting to practice of any conservation activity, awareness creation to the people in relation to the use of the technology; and investigate the socio-economic and biophysical variables is very essential.

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