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Research Article

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The Role of Amhara Credit and Saving Institution in Improving Rural Households Livelihood

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Abstract

In Ethiopia only 7% rural community have ever received loan from microfinance. Some researchers argue that microfinance is not a silver bullet or panacea of poverty alleviation. The main objective of this study is to investigate the role of Amhara Credit and Saving Institution in improving livelihood of rural households. Cross sectional design and mixed research approach were used. The target population of the study was rural household clients and samples were selected by systematic random sampling. Data were gathered from primary sources via structured questionnaire and by in-depth interview. Data were analyzed quantitatively and qualitatively. Percent from descriptive and related paired t-test and Pearson correlation from inferential were mainly used. Amhara Credit and Saving Institution is not effective in improving saving habit of rural client's ad their saving amount is not enough to minimize livelihood vulnerability. The institution is not effective in helping rural clients to convert their loan for livelihood asset building and creation. The improvement of rural household's livelihood assets after they became a client is limited mainly to human, social and financial assets. There is no significant improvement in natural and physical livelihood assets. Therefore, the institution must work with different offices agriculture office specially to bring improvement on natural and physical livelihood assets.

Introduction

Providing financial service to the poor start at the threshold of new era. Decades after the first experiment in non-collateralized credit in Bangladesh by Mohammed Yenus and the approach went on to proliferate throughout Asia and Latin America, microfinance has yet to reach those who need it most; millions of the world's poorest people in Africa [1]. Today, MFIs serve many poor households in Africa with opportunities to save and to receive loans. As of August 2014, 262 MFIs reported to the Microfinance information exchange Market with a total of 7.4 million borrowers and US$7.8 billion in gross loan portfolio

Beginning in the 1970s, microfinance revolution swept through Asia and Latin America, helping countless millions of poor people gets the economic boost they needed to start small business and work their way out of poverty [2]. Somehow, the revolution by pass Africa, while there are among 300 million economically active individuals in Sub Sahara Africa, only about 20 million of them less than 10% have access to any kind of formal financial services [1]. Today, most of Africans- well over 50% live with less than $ 2 per day. Moreover, all of the 21 countries listed in the UN low human development rank are in sub Saharan Africa. However, there are several positive signs. However, the continent is still under served financial services. The cost of microfinance service to Africa is higher than other regions of the world because Africa has many vast and sparsely populated rural areas, higher rate of illiteracy and wide spread lack of identity documents [1].

At Satkghira District southwest Bangladesh, investment was the most commonly cited reason for obtaining loans (45%) but consumption (35.22%) and repayment (19.91%) were also common reasons. The majority of loans for investment and repayment were obtained from MFIs as expected, as they are the largest providers of loans. However, consumption loans were most often obtained from informal sources. Consumption loans were used for purchasing food (65%) or medicine (30%) at time of livelihood shocks. Therefore, they are a suitable proxy for loans obtained by households to cope with livelihood shock [3]. Agricultural microfinance is not business as usual but requires a different approach from that typically applied in many microfinance organizations. Due to the limited capacity of micro finances and rural saving and credit cooperatives (RuSACCOs) and the lack of incentives for them to work with food insecure rural households, the vast chronically food insecure households are excluded from formal financial services. Recent studies have shown that only 7% of rural Ethiopian households have ever received on microfinance institutions loan and one can safely assume that most of the 7% are not safety net households [4].

Formal microfinance in Ethiopia started in 1994 and 1995. The licensing and supervision of microfinance institutions No 40/1996 encourage the spread of microfinance institutions. Currently, there are 28 microfinance institutions operating in Ethiopia in which Amhara Credit and Saving Institution (ACSI) is the largest, providing micro credit service for about 2 million clients. The operation of ACSI, the main rural financial intermediary in rural Amhara region was initiated in1995 by the organization for rehabilitation and development in Amhara (ORDA), an indigenous NGO engage in development activities in the Amhara region. ACSI has under taken its pilot activities in 1996 and licensed as microfinance Share Company in 1997. ACSI is operating in all Woreda of the region [5].

Method

Cross sectional research design as it is possible to give generalization. All data was collected at one time from primary sources of in-depth interview and questionnaire. For this study mixed research approach was used. In-depth interview and open-ended questions from questionnaire were treated by qualitative approach. Close ended and open-ended questions interval and ratio from questionnaire considered by the quantitative research approach. So, it was possible to overcome the limitation of both approaches. The target populations for this study are rural Kebeles households in the woreda. The survey populations were ACSI client rural Kebele households who took loan from the institution in which ACSI can have a direct access to them. Seven sample Kebeles were chosen by simple random method because homogeneous population and agro climate. Out of 2454 clients in the sample Kebeles 109 rural Kebeles households were selected by systematic sampling technique using Kothari sample size determination formula **(Kothari, 2004).**

$$n=\frac{(Z^2)(p)(q)(N)}{e^2(N-1)+Z^2(P)(q)} \quad n \quad = \frac{(1.96.)^2(0.05)(1-0.05)2454}{0.04^2(2454-1)+(1.96)^2\,(0.05)(1-0.02)}$$

$$n=\frac{447.55}{4.106+0.182}$$

$$n=\underline{109}$$

Where, n= sample size of the population

N= total population of the study /2454/

e = margin of error in sampling /0.04/

z = confidence level /1.96/

q= (1-p), sample of proportion /0.95/

p= precision level /0.05/

Data analysis was made by using qualitative analysis, percentage, mean, chi- square bivariate, Pearson correlation, paired t-test were used to analyze data. Excel and SPSS version 20 was used to process and analyze data. Results were presented by table, graph, and pie chart.

Result and discussion

Socio-Demographic Characteristics of Respondents

Most of respondent household heads are male; i.e 78% of them are male whereas the rest 22% of them are females. Besides, the age of large number (80.7%) of respondent household heads is from 36 - 65 year showing that 92.3% of household head respondents are economically active. they can use their loan from microfinance institutions for productive purposes. Moreover, pronounced number of respondents are marred household heads which (79.8%). In addition, there is high distribution in number of family size of respondents. The average family size of rural households is six individuals per household. Therefore, most sample households have large family size, which has direct relation with consumption level and economic productivity (Table 1).

Table 1: The socio-demographic backgrounds of respondents

	Sex category	**Frequency**	**Percent**
Sex	Male	85	78%
	Female		24
	Total	109	100%
Age	Age group	Frequency	Percent
	24 -35 year	13	11.9%
	36 - 65 year	80	80.7%
	>65 year	8	7.4%
	Mean age	Mini and max age	Std. deviation
	48.4 year	24 – 80 year	11.3 year
Marital status	Marital status	Frequency	Percent
	Married	87	79%
	Single	4	3.7%
	Widowed	12	11%

	Divorce	4	3.7%
	Other	2	1.8%
	Total	109	100%
Family size	Family size	Frequency	Percent
	1 – 3	10	9.2%
	4 - 5	27	24.8%
	6 – 8	60	55%
	> 9	12	11%
	Total	109	100%

The educational status of rural household is nearly half (46.7%) of household head respondents are illiterate, that cannot read or write. Only 16.6% 0f respondent household heads has been attending formal school. It is clear that educational status has great role in financial and economic decisions (Figure 1).

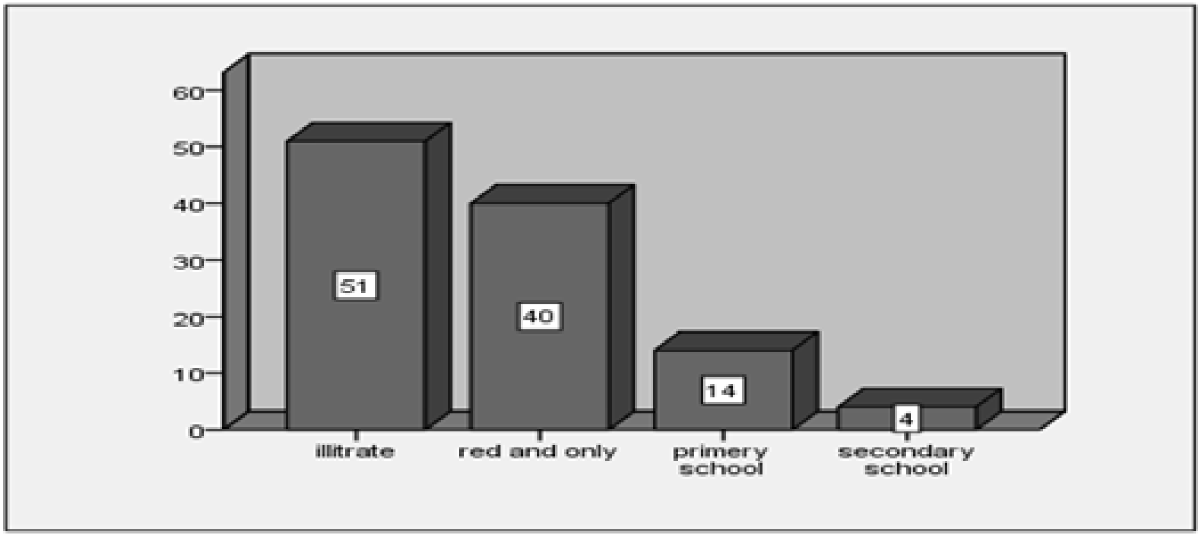

Figure 1: Educational background of respondents

Sources of Livelihood

The main livelihood of more than half of respondent's is mixed farming (both crop production and livestock husbandry) accounting 63%. It helps them generate income for their livelihood to reduce vulnerability compared with those respondents that involve in only one main livelihood. Animal husbandry, land renting and daily work is not significant livelihood of large number of rural households as they cannot reduce rural livelihood vulnerability (Figure 2).

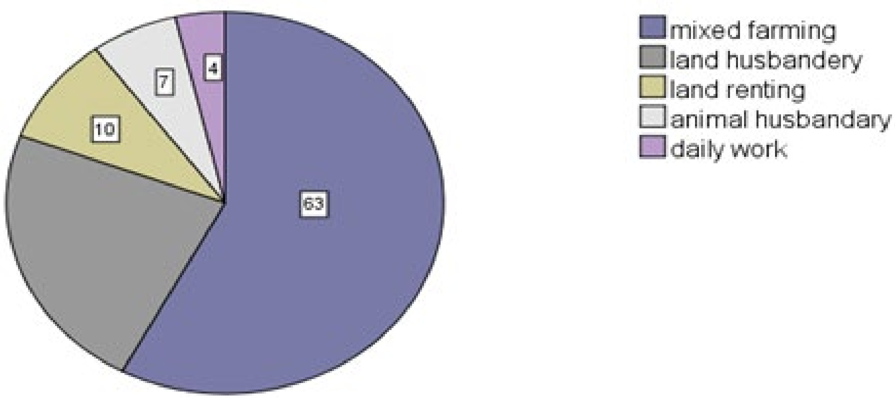

Figure 2: Sources of household's livelihood

Role of ACSI on the Saving Habit Rural Households

Via closed ended question respondents were asked about the role of ACSI in improving the livelihood of rural clients 79.8% believe that ACSI is important to improve the livelihood of rural clients. Most explain that before and without ACSI they were unable to get credit freely and easily and even if they got credit it was small and the repayment period is too short with too maximum interest rate and usually it was from informal money lenders. Sometimes they were selling their livestock to pay back their loan from informal money lenders. ACSI prevents rural households from informal money lenders. They explain that they can get credit easily and safely from ACSI but informal money lenders force to pay from 30% to more than 100% interest and they do not give loan if they have no asset like land or livestock but ACSI give them in group without collateral.

In contrast 41.3% respond ACSI further expose rural community for informal money lenders. If they fail to pay loan on time ACSI can sell their asset usually livestock via legal procedure forcefully. About 84.4% respond that saving is important for rural community to minimize vulnerability of their livelihood. But the saving practice and habit of credit or saving only clients is similar as the institution manager responds. About 79.8% respondents believe that ACSI is important to improve the livelihood of rural community. Overall 89.9% reported that the participation in the microfinance program has changed their live positively; 3.3% actually experienced worst life as result of credit.

In in-depth interview the ACSI branch manager respond the following. *"Our institution gives education to save their money for rural community. We give education about how to save in ACSI and the benefits of saving. We promote to save regularly and inform saving is a precondition to take loan in the institution for any client whether it is rural or urban dweller. We do this at Sunday in their residential rural Kebeles by deploying our employees. All our credit clients have voluntary saving account and in addition all of them have compulsory saving account. In their compulsory account they must save 10% of their loan amount and they can use it when they totally off from ACSI credit service by paying their entire loan. But almost all clients do not save any money on their compulsory saving beyond 10% of their loan size".*

About 57% of respondents accept the existence of compulsory saving they explain that it helps them to save some of their loan and it prevents them from using and consuming their total loan. *"Compulsory saving is for rural clients only and concerning its important yes, it is important. For rural clients we give credit in group without collateral, clients form group based on their preference by screening their member background and does he/she have ambition to improve his life and work. But if one of the group members cannot pay his loan or if he/she haven't asset to be sell the rest group members will pay it; in such cases compulsory saving is very important. In addition, it prevents them from using their total loan once. Moreover, it is the part of the regulation the institution".* **(Table 2)**

Table 2: The Role of ACSI on saving and saving habit

	Frequency			Percent		
1 Accepting the importance of ACSI in improving livelihood.	87	22	109	79.8%	20.8%	100%
2 Importance of saving to improve rural household's livelihood.	92	17	109	84.4%	15.6%	100%
3 The role of ACSI in educating and promote to save regularly.	94	15	109	86.6%	13.3%	100%
4 The role of ACSI in educating how and when to use your money.	53	56	109	48.6%	51.4%	100%
5 Having compulsory saving account.	109	0	109	100%	0.0%	100%
6 Accept compulsory saving.	63	46	109	57.8%	42.2%	100%
7 Need to stop compulsory saving if it is not a precondition for saving.	49	60	109	45%	55%	100%

Chi square test were computed to check whether there is association in opposing the existing of compulsory saving and need to stop if it is possible. There is association at 95% confidence level (x2 =31.174, df = 1, and P<0.00). Means those who oppose compulsory saving want to stop it if it is possible so they are saving without their willingness because ACSI enforce them in the form of precondition to take loan. **(Table 3)**

Table 3: Chi Square test of compulsory saving acceptance

Response	Accepting compulsory saving		Need to stop to stop compulsory saving		Significance level 95%		
	Frequency	Percent	Frequency	Percent	Df	x^2	p-value
Yes	63	57.8%	49	76.5%	1	31.174	.000
No	46	42.2%	60	55%			
Total	109	100%	109	100%			

Purpose of Rural Households Saving

In sum 51.4% of the respondents are saving in associate with loan, either to get loan or to pay loan (29.4% for credit taking and 22% to pay their loan on time). About 44.2% respondents are saving for productive purposes and this can minimize their livelihood vulnerability compared to those who save for unproductive purposes. (Figure 3)

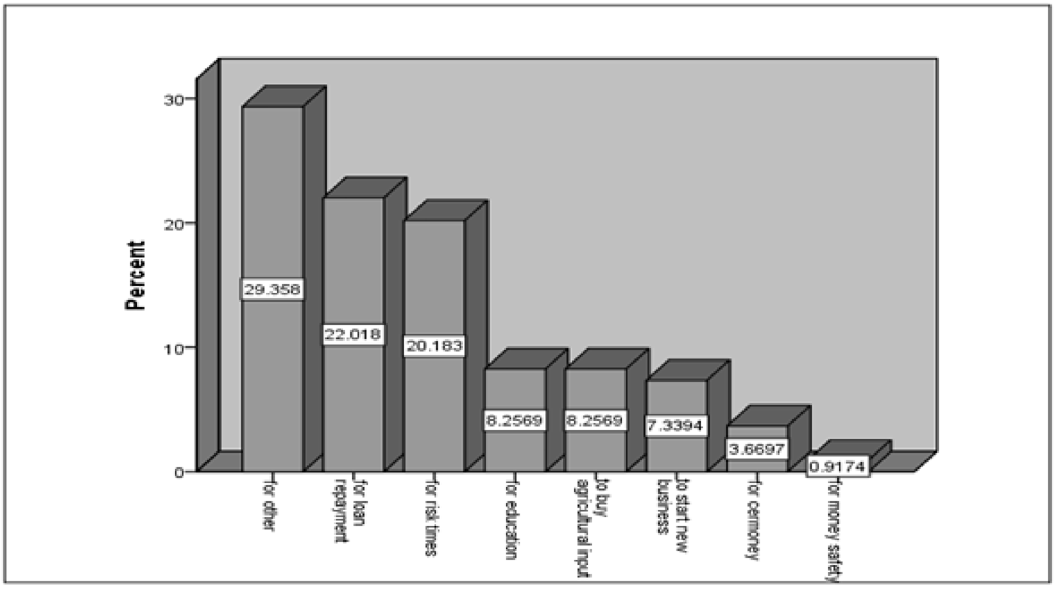

Figure 3: Purpose of household saving

Saving Practice of Rural Households

Only 7.3% of respondents save money in ACSI regularly, this shows the saving practice of credit clients is poor. However, their mean saving is high compared to others with 12150 birr in average. The other 48.6% of them respond that they save money some times in a year. Those who save rarely has small amount of saving deposit with 146.7 birr in average. This manifests that saving practice and habit of credit clients in ACSI is not such satisfactory. Although the role of ACSI in creating awareness on saving is good, it does not bring significant improvements in saving amount and practice. (Figure 4)

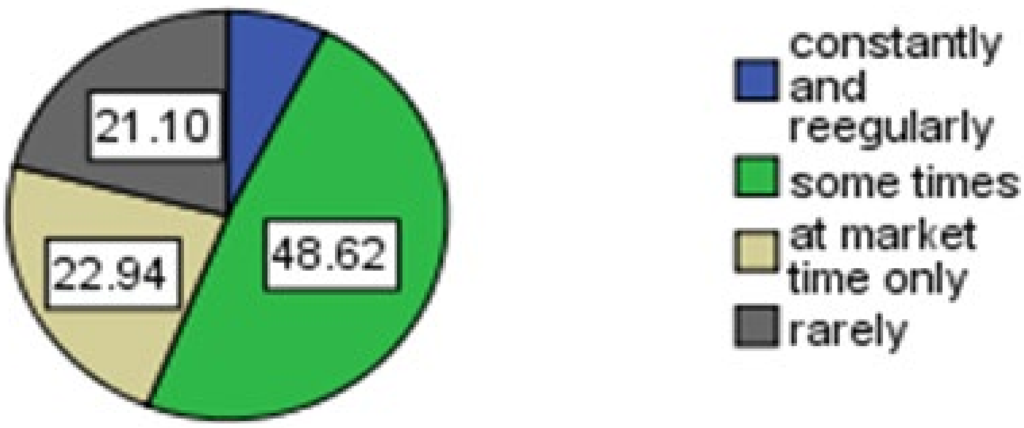

Figure 4: Saving practice of rural households

Saving Institution Preferences

Accordingly, 79.8% of respondents start institutional saving at ACSI for the first time meaning that they have no saving experience before ACSI in institutional level. Compared to ACSI, 44%clients prefer to buy assets like livestock if the get extra money and the rest 27.5% of them need to save at Commercial Bank of Ethiopia. Rural communities do not consider cash saving important (Table 4). In Bangladesh rural farmers did not give value cash as an asset, preferring to stock in the form of physical asset predominantly livestock [6].

Table 4: Saving institution preferences

Where do you save at institution level at the first time	Frequency	Percent
At Amhara credit and saving institution (ACSI)	87	79.8%
At commercial bank of Ethiopia	15	13.8%
At other institution	7	6.4%
Total	109	100.0%
Saving preference if there is extra money from livelihood	Frequency	Percent
At Amhara credit and saving institution (ACSI)	18	16.5%
At home	11	10.1%
At commercial bank of Ethiopia	30	27.5%
At relative or friend	0	0.0%
Buying assets	48	44.0%
Lend to others	2	1.8%
Total	109	100.0%

The mean of first saving of rural households is 184.4 birr. The current saving amount is 574.6 birr this indicates there is clear difference in first saving amount and current saving amount. The standard deviation proves that there is high dispersion or variability of current saving than rural clients first saving with standard deviation of 152 and 766.9 respectively. In depth interview also show similar result with this result as follows: *"Though all credit has saving almost all of them started saving when they need credit and their first saving amount is small. But after that some clients save money and dispersion in saving can be observed as they become familiar with the institution but there also clients that do not save in addition to their first saving. Still there are clients that use some of their first saving in the place of adding on it".*

The study in Zanzibar also supports this results that before the loan some clients were not able to save any amount, where only 25 members were able from 45 clients. But after the loan all 45 sampled clients are able to save. The value of the standard deviation shows how much variation or dispersion exists from the average or the mean. Saving before loans, the value was 8103 and saving after loan was 10,471.2 indicating that the data point tend to be very close to the mean which implies the amount of saving between clients was almost on the same distribution [7].

In the past 12 months clients withdraw 420.6 birr in average from their ACSI saving account but the data analysis shows that from 109 respondents 39.5% clients do not withdraw money from their ACSI saving account and this can potentially result high dispersion of current saving than first saving. Compared to current saving the current compulsory saving of respondents 1623.7 birr which greater than their current saving account many times. The standard deviation is also less than current saving which are 357. So, clients voluntary saving is less than their compulsory saving this shows that they do not prefer to save large amount of money in the institution. **(Table 5).**

Table 5: Mean and Standard Deviation Analysis of Saving

No	Item	Mean in Birr	Std. deviation	C.V
1	First saving amount of clients in ACSI	184.4	152	82.4
2	Current saving amount of clients in ACSI	574.6	766.9	133.6
3	Current compulsory saving amount of clients in ACSI	1623.7	357.3	22.1
4	Money with draw from your ACSI saving account in the last 12 months	420.6	632.5	150

Role of ACSI in Reducing Rural Livelihood Vulnerability

Respondents were asked whether they use money from their ACSI saving account to maintain their livelihood at shocks or problems or not and for those who use their saving for the shock, again they were asked is the money was enough for the problem or not. Respondents were also asked whether they believe that their current saving amount is enough to reduce their livelihood vulnerability or not.

During their ACSI experience only 41.3% of respondents use their saving in ACSI to maintain their livelihood ever during livelihood shock times such as in bad harvest, livestock death, family member illness or death and in buying agricultural inputs. About 40% of them agree that their saving was enough to maintain their livelihood. It was only 16.5% of them who use their ACSI saving to maintain their livelihood ever. This indicates ACSI saving amount of rural credit clients is not enough to reduce livelihood vulnerability because 37.6% of respond that their saving is enough to minimize their livelihood vulnerability.

In depth interview result also confirm this result as:
"It is true that all of our credit clients have saving account but I don't believe saving of most of clients can reduce their livelihood vulnerability. The saving amount of most of rural clients is small which cannot even buy one ox if their ox dies. Also, none credit clients in rural area saving amount in ACSI is not significant and most rural community do not prefer to save more money in our institution we know that they prefer banks. Usually they start to

*save when they need loan in our institution. Therefore, for rural community both for credit clients and saving only clients their saving amount in our institution cannot potentially reduce their livelihood vulnerability. (***Table 6).**

Table 6: Role of ACSI in Reducing Rural Livelihood Vulnerability Via Saving

		Frequency				Percent			
1	Use of saving to maintain livelihood at shock times.	45	46	18	109	41.3%	42.2%	16.5%	100%
2	Is saving enough to maintain your livelihood shock?	18	27	-	45	40%	60%	-	100%
3	ACSI saving amount is enough to minimize livelihood vulnerability happen.	41	68	-	109	37.6%	62.4%	-	100%

Role of ACSI on Loan Management and Livelihood Asset Building Loan Access of Rural Households from ACSI

Alefa ACSI branch give loan service only for 14 rural Kebeles. ACSI manager respond the reason as follows in in depth interview:

ACSI provide loan only at 14 rural Kebeles it is because of distance, lack of transport access, the limited capacity of the branch institution and the productivity of other Kebeles. But for households from those 14 Kebeles we provide loan for every household who need loan if he or she meets the criteria.

About 81.7% respond that they took loan for the productive purpose (to improve their livelihood) and 18.3% of them were took loan for consumption purposes or for none productive purposes for the first time. For the first time 71.6% of clients respond that they use their loan for the intended purpose. For 80.7% of them the usual purpose of loan taking is to improve their livelihood and this is almost similar result with the first purpose of loan taking **(Table7).**

In Ebinat the survey result shows the total credit beneficiary households, about 79% bought at least one animal. About 90% of better off households bought livestock compared to 69% of poor households [7]. During loan taking 60.6% of households decide to take and manage the loan together (the wife and the husband) but in 32.1% and 7.2% house holds the household head and the wife only respectively decide to take and manage the loan. It also increases female's empowerment indecision making in financial issues in households **(Table7).** In Meskan Woreda women gave different productive purposes for utilizing the financial loan in which 22 percent used it to start their businesses whiles 32 percent used it to expand existing businesses [9].

Table7: Purposes of Loan Taking

No		Frequency			Percent		
		To improve livelihood	For consumption	Total	To improve livelihood	For consumption	Total
1	Main purpose loan for the first time	89	20	109	81.7%	18.3%	100%
2	Usually main purposes took loan	88	21	109	80.7%	19.3%	100%
Percent							
		Yes	No	Total	Yes	No	Total
3	Use of first loan for productive purpose.	78	31	109	71.6%	28.4%	100 %

In addition, respondents were asked loan amount taking frequency that in average 7.17 times with standard deviation 3.22 indicating that there is small variation in loan taking frequency among clients. More loan taking frequency is concentrated around the mean value. The mean of first loan of respondents were 3137.6 birr while their current loan mean is 16137.6 birr indicating clients loan taking performance is increased highly. The standard deviation of current loan is greater than standard deviation the first loan because after the first loan clients have freedom to increase their loan up to 30,000 birrs (Table 8).

The in-depth interview also supports "For the first time clients were taking small amount of loan and they can increase it year to year if they turn the previous loan effectively, but since 2008 E.C they can take up to 30000 birr whether they are new or matured clients."

Table 8: Loan size

No		Frequency	Mean	Std. deviation
1	First loan amount	109	3137.61 birr	27403.2
2	Current loan amount	109	16137.6 birr	3618.32
3	Loan frequency	109	7.17	3.22

Role of ACSI on Clients Asset Building

Of all 94.5% of respondents agree that prior to being a client ACSI give them enough education about how to manage their loan and how to use their loan for productive purposes and to build their livelihood assets, showing that ACSI give education for credit clients when they take loan about how to use it properly. The data analysis shows in each loan period clients attend ASCI education 2.88 days in average. About 42.2% respond ACSI do not attend them after they take loan but 29.4% respond ACSI help them in loan use some times. Therefore, according to rural household results the role of the institution is at good **(Table 9).**

In depth interview indicates the following.

"For rural clients before giving loan ACSI give education to use the loan for building their livelihood assets and how they can use the loan for productive purposes. The institution staffs give education for rural clients for three days when they take loan and it is if they attend the education they can take loan. After they took the loan ACSI staff members attend for what purpose they use the loan and help them to use the loan for livelihood asset building by went to each client home within 60 days after they take the loan. For those who are using the loan for consumption we give advice to improve and if they do not show improvement in loan management and utilization they cannot take the next loan".

Regarding to loan repayment 57.8% respond that the loan repayment time is not enough and 58.7% respond that the loan interest rate they pay is high while 41.3% agree the interest rate for rural clients is fair. As in-depth interest rate of ACSI for rural clients is 10% with one-year loan repayment period. About 43.1% respondents face loan paying problem 7.17 times average in their ACSI loan experience at list one time. Those who face problem were asked the solution they took to their problem and the data analysis shows they cover it bay selling asset (44.7%), by borrowing with interest temporarily (19.3%) and by borrowing from their relatives (36%). About 37.6% respondents face indebtedness problem at list once in their loan experience in average 1.78 times **(Table 9).**

Respondents borrow money from informal money lenders (22%), from different source without interest (34.1%) and from family/ relative (43.9%) to pay their ACSI loan and pay it back for their lenders by taking loan again from ACSI. So, they take loan from different sources to pay their ACSI loan and again they take other loan from ACSI to pay back the loan they take from other sources and paying interest for the institution without use their loan for improving their livelihood, instead this expose them for livelihood vulnerability indebtedness cycle. In Ebinat in ability to pay loan back, force households to dispose their assets at risk of increasing their vulnerability, sale of livestock to pay back loan. Specially, the sale of plough oxen means that the poor households may be obliged to rent their land to another farmer to only to get one fourth up to half of the product as rent. This put poor households further in to poverty [7].

Table 9: Role of ACSI on Educating Clients about Loan Management and Repayment

Items		Frequency				Percent			
1	ACSI give enough education and training to use loan and how to create productive asset	103	-	6	109	94.5%	-	5.5%	100%
2	ACSI attend after loan taking to check for what purposes clients are using the loan.	29	34	46	109	26.6	26.6%	42.2%	100%
3	ACSI help and monitor to use the loan for the intended purposes frequently.	24	32	53	109	22%	29.4%	48.6%	100%
		Frequency				**Percent**			
4	ACSI loan repayment time is enough for rural clients.	46	63	109		42.2%	57.8%	100%	
5	Knowing the interest rate of ACSI.	90	19	109		82.6%	17.4%	100%	
6	ACSI interest rate is fair as rural client.	45	64	109		41.3%	58.7%	100%	
7	Facing loan repaying problem ever	45	64	109		43.1%	56.9%	100%	
8	Facing indebtedness ever in your ACSI experience.	41	68	109		37.6%	62.4%	100%	

Chi squared test were computed to check whether there is association between short loan repayment time and problem in paying the loan for rural households. It indicates at 95% confidence level ($x2 = 0.698$, $df = 1$ and $P > 0.0$), so it is not statistically significant. So, there is no association between short loan period and loan paying problem. Those 43.1% who face loan repaying problem ever cannot be because of shortage of loan repaying time as 57.8% responded loan repaying time is short (Table 10).

Table 10: Chi Square Test on Loan Repayment

Rsponse	ACSI loan repayment time is enough		Facing loan repaying problem ever		Significance level 95%		
	Frequency	Percent	Frequency	Percent	df	x^2	p-value
Yes	46	29	34	46	1.698	.698	.397
no	63	24	32	53			
Total	109	42.2%	64	109			

Role of Loan Size and Frequency on Asset Building

Correlation was done between loan frequency with total number of livestock after loan (r = 0.22, P =0.818, R2 = 4.84, CL = 95%) and P > 0.05, it is not statistically significant meaning taking loan frequently from ACSI had no role in building or increasing the livestock of rural households in the study area. Also, the coefficient of determination (R2) proves loan taking frequency has no significant power to determine the number of livestock for rural households. Correlation was also done between loan amount with total number of livestock after loan (r = -0.001, P =0.993, R2 = -0.0001, CL = 95%) and P > 0.05, though the correlation is extremely weak negative it is not statistically significant thus taking large loan from ACSI is not role in building or increasing the livestock of rural households. Coefficient of determination (R2) proves loan taking frequency has no significant power to determine the number of livestock for rural households. Correlation was done between loan frequency with total agricultural product after loan (r = 0.001, P =0.845, R2 = 0.0001, CL = 95%) and P > 0.05, it is not statistically significant. Therefore, taking loan frequently from ACSI had no role in building or increasing the agricultural product of rural households. The coefficient of determination (R2) proves loan taking frequency has no significant effect to determine the agricultural product of rural households In addition, correlation was also done between loan amount with total agricultural product after loan (r = -0.156, P =0.106, R2 = -2.43, CL = 95%) and P > 0.05, though the correlation is extremely weak negative it is not statistically significant. Therefore, taking large amount of loan from ACSI had no role in building or increasing the agricultural product of rural households in the study area. Also, the coefficient of determination (R2) indicates loan taking frequency has no significant role to determine the agricultural product of rural households. Correlation was done between loan frequency with total cultivated land after loan (r = 0.174, P =0.710, R2 = 3.02, CL = 95%) and P > 0.05, it is not statistically significant. Therefore, taking loan frequently from ACSI had no role in increasing the cultivated land of rural households' coefficient of determination (R2) manifests loan taking frequency has no significant role to determine the cultivated land of rural households. Correlation was also done between Loan amount with total cultivated land after loan (r = -0.024, P =0.807, R2-0.058, CL = 95%) and P > 0.05, though the correlation is extremely weak negative no statistically significant correlation. Therefore, taking large loan from ACSI had no role in increasing the cultivated land of rural households in the study area. Also, the coefficient of determination (R2) proves loan taking frequency has no significant power to determine the cultivated land of rural households (Table 11).

Loan number of rural households from ACSI has a very weak negative correlation with their total number of livestock, total main agriculture product and total cultivated land loan taking frequency has a very week positive correlation not statistically significant with total number of livestock, total main agriculture product and total cultivated land. Because most meaning full statistics is likely to be correlation coefficient square R2 shows in all correlations no variance of livestock, agricultural product and cultivated land was significantly accounted by determine by loan amount or/and loan taking frequency. Since correlation cannot show causality linear regression were analyzed at 95% confidence level and the regression value of all relations is not statistically significant, P > 0.05. Generally taking large amount of loan and taking loan frequently do not predict or increase number of livestock, agriculture product and cultivated land of rural households. Linear regression is selected because the variables in the table are continuous (Table 11).

Table 11: Correlation of loan size and loan frequency on livelihood asset building

No	Relations	No	Bivariate P. Correlation (r)	P value (at 95% CL)	Coefficient of determination (R^2)
1	Loan frequency with total number of livestock after loan	109	0.22	0.818	4.84
2	Loan amount with total number of livestock after lo	109	-0.001	0.993	-0.0001
3	Loan frequency with total agricultural product after loan	109	0.001	0.845	0.0001
4	Loan amount with total agricultural product after loan	109	-0.156	0.106	-2.43

5	Loan frequency with total cultivated land after loan	109	0.174	0.710	3.02
6	Loan amount with total cultivated land after loan	109	-0.024	0.807	-0.058

Livelihood asset improvement of rural livelihood after being ACSI Client

This is to compares the five livelihood assets (human, physical, natural, social and financial capital) of households after being ACSI client.

Human Capital Livelihood

Table 12: Human Capital of Livelihood after Being ACSI Client

	Items	Frequency					Percent				
		HI	I	NC	D	T	HI	I	NC	D	T
1	Productivity performance after ACSI.	17	48	36	8	109	15.6%	44.0%	33.0%	7.3%	100%
2	Financial literacy after ACSI.	16	66	23	4	109	14.7%	60.6%	21.1%	3.7%	100%

	Items	Frequency			Percent		
		Yes	No	Total	Yes	No	Total
3	Health insurance because of ACSI role.	81	28	109	73.3%	25%	100%
4	Diversification of your economic activity because of ACSI loan.	53	56	109	48.6%	51.4%	100%

KEY: HI= highly improved, I = Improved, CN= Not changed, D= Decrease, T= Total

In sum most clients agree ACSI loan improve their productivity performance so ACSI has role in improving productivity skill (15.6% and 44%). ACSI has good role in improving financial literacy of rural household's (14.7% and 60.6%). Almost 73.3% respondents are keeping their health by the health insurance showing that ACSI roled in keeping the health condition of its clients. Regarding economic activity diversification 48.6% rural households respond their economic activity is diversified after ACSI loan. It is clear that rural economic activity diversification has role in improving livelihood and reduce risk of vulnerability. ACSI do not bring significant economic diversification improvement (Table 12).

Social Capital of Livelihood

Table 13: Social Capital of Livelihood after Being ACSI Client

	Items	Frequency					Percent				
		HI	I	NC	D	T	HI	I	NC	D	T
1	Social participation and linkage after ACSI loan.	23	47	37	2	109	21.1	43.7	33.9	1.8	100

		Frequency			Percent		
		Yes	No	Total	Yes	No	Total
2	Social problem because ACSI loan.	28	81	109	25.7	74.3	100

KEY HI= highly improved I= Improved CN= Not changed D= Decrease T= Total

Therefore, 64.8% of rural household's social linkage with others and with the community is improved and highly improved, their social and community participation also improved. ACSI has positive role in improving social livelihood asset because 74.3% of rural households do not face any social problem or ignorance by the society because of ACSI loan this can prove taking loan from ACSI is not a shame by the society (Table 13).

Natural Capital of Livelihood

Table 14: Cultivated Land Before and after ACSI Loan

Pair NO	Variables in kada/timad	Mean	Std. deviation	Paired sampled t-test	Bivariate Pearson correlation	
				P value (95% CL)	Correlation	P value (95% CL)
1	Cultivated before loan	6.72	4.087	.000	.867	.000
	Cultivated land after loan					

The parameters show for rural households cultivated land increase after ACSI loan but 58% of households respond that increase in cultivated land is not associated with ACSI as indicated by t-test for cultivated land before and after ACSI loan. There is significance mean difference between cultivated land by kada/timad it is 6.72 per household before loan and after loan it is 7.88 kada/timad per household. The correlation between them is 0.867 at 95% confidence level. Though cultivated land increase after ACSI loan it may not be by the role of the loan may be by increase in agricultural packages and extension program (Table 14).

Physical Capitals of Livelihood

Table 15: Physical capitals after being ACSI Clienta

	Items	Frequency					Percent				
		HI	I	NC	D	T	HI	I	NC	D	T
1	Access to potable water after ACSI loan	7	28	58	16	109	109	25.7%	53.2%	14.7%	100%
2	Family sanitation care after ACSI loan	16	66	23	4	109	11.0%	36.7%	50.5%	1.8%	100%
	Items	Frequency					Percent				
		Yes		No		Total	Yes		No		Total
3	Housing condition after ACSI loan	73		36		109	67.0%		33.0%		100%
4	Use mobile phone because of ACSI	75		34		109	68.8%		31.2%		100%
5	Improvement of livelihood	33		76		109	30.3%		69.7%		100%

KEY HI= highly improved I= Improved CN= Not changed D= Decrease T= Total

Access to potable water is not significantly improved after the loan (53.2%). Rural household's sanitation improvement after the loan is considerable but it is not satisfactory (50.5%). Besides housing condition of 67.0% of rural households is improved after the loan. In addition to the above elements of physical capitals livestock and agricultural product is analyzed by related paired t-test, this is because livestock and agricultural products are very important assets of rural households like farm land in Ethiopia (Table 15).

Table 16: Livestock before and after being ACSI Client

Pair NO	Variables (livestock in number)	Mean in	Std. deviation	Paired sampled t-test	Bivariate Pearson correlation	
				P value (95% CL)	Correlation	P value (95% CL)
1	Oxen before loan	1.57	1.013	.000	0.591	.000
	Oxen after loan	2.15	1.035			
2	Cow before loan	1.98	2.219	.000	0.903	.000
	Cow after loan	2.42	2.159			
3	Calf before loan	1.98	1.91	.030	0.566	.000
	Calf after loan	2.39	2.18			
4	Sheep and goat before loan	3.12	3.57	.000	0.569	.000
	Sheep and goat after loan	6.39	4.69			
5	Pack animal before loan	0.66	0.61	.000	0.779	.000
	Pack animal after loan	0.94	0.93			
6	Chicken before loan	2.48	3.86	.003		.000
	Chicken after loan	3.94	5.10			
7	Total livestock before loan	8.98	6.67	.000	0.730	.000
	Total livestock after loan	11.3	6.22			

The mean of all types of livestock of rural households after loan is greater than the mean before loan, regarding the standard deviation there is slightly more dispersion of all types of livestock after loan compared to the condition before loan except cow. When we look the total mean of livestock before the loan it was 8.98 livestock per households and after loan it is 11.3 livestock per household this high increase is because most clients have goat, sheep and chicken after loan than oxen, cow and calf. It shows there is clear mean difference before and after the loan. The paired sample t- test for all types of livestock (CL = 95% and P < 0.05) is statistically significance, the correlation is 0.73 at 95% confidence level P < 0.05 it indicates that there is strong positive relation between number of livestock before and after loan. Though the data analyses indicate that 58% rural households do not associate the increase or change of livestock with the loan in addition as indicated at Table 14 number of livestock has no significant correlation with loan size and loan taking frequency and also loan size and frequency has no a power to determine or predict number of livestock and agricultural products (Table 16).

In this study it was also found that most of ACSI clients have at list one type of livestock which is similar with the study in kobo. At kobo of the total matured clients, about 83% own at least one cow/ox/camel, 39% own at least one Sheep or Goat. Similarly, among the new incoming clients 33% own at least one cow/oxen/camel and 33% own at least one Goat and Sheep [11]. In the study area increase in the number of livestock for rural household ACSI clients after they joined the institution compared to before the join the institution is not purely because of ACSI role maybe it has in direct role.

Table17: Crop Product Before and After Being ACSI Client

Pair NO	Variables (crop product quintal)	Mean	Std. deviation	Paired sampled t-test	Bivariate Pearson correlation	
				P value (95% CL)	Correlation	P value (95% CL)
1	Teff before loan	2.25	2.247	.007	.660	.000
	Teff after loan	2.275	2.384			
2	Maize before loan	5.11	3.876	.000	.828	.000
	Maize after loan	7.61	4.921			
3	Sorghum before loan	3.33	2.677	.000	.708	.000
	Sorghum after loan	4.55	3.743			
4	Niger seed before loan	0.79	1.163	.000	.769	.000
	Niger seed after loan	1.27	1.771			
5	Total product before loan	11.98	7.600	.000	.880	.000
	Total product after loan	15.94	8.947			

The above table indicates Paired sampled t-test and bivariate Pearson correlation were computed for all types of main types of agricultural product before and after the loan or before and after they become ACSI client (for all crop product CL = 95% and P < 0.05), it is statistically significant, means there is mean difference before and after rural households become ACSI client. Before loan the mean total crop production for rural household is 11.98 quintal per household and after loan it is 15.94 quintal per household with strong positive correction (0.88). Agricultural product in average increase by 4.04 quintal per household after ACSI loan especially maize increase than Teff, Sorghum and Niger seed in comparison. There is improvement of agricultural products in quintal after the loan the paired sample t – test result indicates however, 58% of rural households agree that increase in crop products after ACSI loan is not associated with ACSI loan (Table17).

In Ganta Afeshum Woreda, Tigray regional state DECSI did not enable rural frequent clients to diversify the livelihood. But it also improved the diet of urban clients but no significant change on the diet of rural clients [101]. Therefore, even though agricultural products increase after ACSI loan at the study area it cannot be by the role of ACSI loan, it can be by increase in agricultural packages and extension program or other means implemented by ministry of agriculture and rural development. As different research results show that microfinance has positive impact on crop production but the results of this study do not show that the improvement of rural household's crop products after they become ACSI client is not directly associated.

Financial Capitals of Livelihood after Being ACSI Client

The human capital of livelihood after they become ACSI client 14.7% responds their financial literacy is highly improved. In depth interview also show the following.

"In terms of client's financial knowledge, the branch institution is working hard to develop their money management and promote to save and to take loan. Rural clients know can take credit up to 30,000 and they can save any amount of birr at any time. So, it is possible ACSI in the Woreda increases financial capital of rural households. No bank other microfinance provide loan for rural households in the Woreda except ACSI."

This indicates ACSI has good role in improving financial capital of rural households. For those 14 Kebeles which are covered by ACSI loan service the institution provide credit up to 30,000 birrs for rural households and promote them to save and all credit clients has saving account. So ACSI increase of the financial capital of rural households in the study area but it is limited to 14 Kebeles, it does not include all Kebeles of the Woreda, so rest eleven rural Kebeles the institution has no significance role in improving financial capital. Therefore, financial capital of client is improved after rural households became ACSI client.

Declaration: I hereby declare that the article entitled as "The role of Amhara credit and saving institution in improving rural households' livelihood" is genuinely our original work. I also declare and confirm that no part of this paper either in completely or in part is lifted or incorporated from any earlier works conducted by others or me [11-41].

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