IMPACT ANALYSIS OF SAVINGS AND CREDIT COOPERATIVE SOCIETIES IN COMBATING POVERTY AMONG CROP FARMERS IN THREE LOCAL GOVERNMENT AREAS OF NIGER STATE, NIGERIA

BY

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DECLARATION

I hereby declare that this thesis titled "**Impact Analysis of Savings and Credit Cooperative Societies in Combating Poverty among Crop Farmers in Three Local Government Areas of Niger State, Nigeria"** has been written by me and it is a record of my research work. No part of this work has been presented in any previous application for another degree or diploma at any institution. All citation and sources of information are duly acknowledged by means of references.

_____ _____

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CERTIFICATION

This thesis titled '**Impact Analysis of Savings and Credit Cooperative Societies in Combating Poverty among Crop Farmers in Three Local Government Areas of Niger State, Nigeria',** by Abel **GOMINA** meets the regulations governing the award of the Degree of Master of Science, Ahmadu Bello University, Zaria, and is approved for its contribution to scientific knowledge and literary presentation.

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DEDICATION

This thesis is dedicated to God Almighty who made it possible. Also to my endearing parent and Elder brother, Mr. Samson Gomina and Mrs. Flourence Gomina and Mr. Danasabe Gomina for being source of my inspiration.

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Abstract

The focus of this study is impact analysis of savings and credit cooperative societies in combating poverty among crop farmers in three Local Government Areas of Niger State, Nigeria. Primary data were collected from two categories of farmers; beneficiaries and non-beneficiaries of savings and credit cooperative societies (SACCOS) lending activities through the use of structured questionnaires. Combinations of purposive and random sampling techniques were used in selecting respondents. Tools of analyses used were description statistics such as frequencies, percentages, Foster-Greer-Thorbecke indices, double difference estimators, paired t-test and multiple regressions. Results of data analysis reveal that the mean ages of the farmer beneficiaries and non-beneficiaries were 41 and 38 years respectively. The results of poverty severity index revealed that about 2% of the beneficiaries constitutes the poorest among the respondents while, about 4% of the non-beneficiaries constitutes the poorest among the respondents after obtaining credit. The results from double difference estimator revealed that SACCOS Credit impacted positively on the beneficiaries' crop output and per capita annual farm income with a positive mean value of 290.03kg and ₦2054.77, respectively. The results from multiple regression analysis revealed that household size, farm income, non-farm income, educational level and interest rate charged on credit were the significant factors that influence the level of participation in SACCOS at 1% and 10% levels of significance respectively. Many about (39%) of the beneficiaries and non-beneficiaries ranked high cost of farm inputs such as fertilizer and agrochemical as the foremost constraints. It was therefore recommended that the Savings and credit cooperative societies could link –up the farmers with sources of quality input for bulk purchase. This will enable the groups to buy inputs at factory cost thereby helping to reduce cost of production.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Savings and Credit Cooperative Societies (SACCOS) are important in the provision of financial and banking services to low income households who for economic reasons cannot be covered by the activities of formal banks and financial institutions (Mwakajumilo, 2008). SACCOS performs three major functions in relations to its members and general economic development of the country. In particular, these functions are collecting savings from its members, giving loans to its members and giving financial and non-financial advice to its members in order to facilitate SACCOS members utilize well the micro credit they have borrowed from SACCOS. In some cases, some government and private institutions may also give financial assistance to SACCOS in order to enable them give micro credit to their members (Mwakajumilo, 2008). According to Mwakajumilo (2008) the different activities done by households in both urban and rural areas also mean the existence of different SACCOS. Thus we have SACCOS for food crop producers, cash crops SACCOS, traders SACCOS, fishermen SACCOS, Teachers SACCOS, Armies (e.g. Police) SACCOS with the Aim of assisting the Government to reduce high level of poverty and income inequality in the society.

Unemployment breeds a lot of private and social consequences which are negative (Alam *et al.*, 2009; Alam, 2009).These includes poverty, crime, social inequality, loss of output, family disintegration, among others. Governments all over the world make concerted efforts to mitigate these problems (Alam, 2009). In Nigeria, several efforts have been made to create jobs for the teaming able bodied people who are available

for work but who are yet to find jobs (Goodluck, 2011). One key source of unemployment in Nigeria is dearth of capital required to combine with other factors of production, which are land, labour and entrepreneurship (Nieman *et al.*, 2003). Although growth is critical for poverty reduction, focus on growth alone is not enough (Almas 2003). Micro-lending has been considered as the latest panacea for poverty alleviation (Magbagbeola *et al.*, 2010). There has been a growth in the recognition of the importance of empowering all people of their access to all the factors of production including credit (Ahmad, 2004). Cooperative Societies all over the globe have been seen as one of the ways of reaching out to the un-banked and the neglected in the society and not a few have come to see it as an alternative to the regular banking, since it, in most case provides members of the group the financial incentives without the rigours usually experienced in banking halls (Adewakun, 2012).Traditional cooperatives are common throughout Nigeria, but these groups tend to be small, with a common bond based on membership of a kinship, societal and low professional group (Adewakun, 2012). Savings and Credit Cooperative Societies are known to provide funding to their members at reasonable interest rate and without requirement of collateral. They are therefore vital organs for financing food crop production (Mavimbela *et al*., 2010). However, no known work have been done on the extent to which these organs have been helpful towards combating poverty in Nigeria. This study would attempt to fill this gap

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1.2 Problem Statement

The concern about the threat posed by poverty has led the Nigerian government to devote considerable attention to alleviating its scourge through various aid programmes, some of the time in collaboration with the civil society and donor agencies (Girei *et al* ., 2013). According to Girei *et al.*, (2013) some of these

programmes include: Agricultural Development Programme (1975), Operation Feed the Nation (1986), National Directorate for Employment (1987), National Fadama Development Programme I (1992), Family Support Programme (1996), National Poverty Eradication Programme (2001), Special Programme on Food Security (2001), National Fadama II Programme (2004), National Special Food Security Programme (2005), National Fadama III Programme (2009) and Sure-P programme (2013). Despite all these programmes, the percentage of the population living below the poverty line in Nigeria is still a subject of concern to government and donor agencies (National Bureau of Statistic, 2011). The willingness of the low income group to borrow and repay at seemingly high interest confirm the view that their financial problems has more to do with access to funds as put by (Anyanwu, 2004). According to Jidenma (2007) the poor lacked good credit history because they never gained access to credit in the first place, thus the poverty level continues to aggravate as observed by Akanji (2006) and Ojo (2009). Also small and medium enterprises that have been described as the nerve of a nation's economy are suffering from poor funding (Basu, Balvy and Yulek, 2004; Oladejo and Dada, 2008).

Over time, savings and credit cooperative societies have been trying to address members' demands by mobilizing funds and granting credit to members. However, they have not been able to grow their wealth sufficiently through accumulation of enough institutional capital to finance non-withdrawable capital funded assets, provide cushion to absorb losses and impairment of members' savings. However, previous studies (Agrawal *et al*., 2002; Adeyemo & Bamire, 2005; Deji, 2005; Asher, 2007; Ogsi *et al.*, 2007) have shown that lack of growth of savings and credit cooperative societies wealth has threatened their sustainability such that they have not been able to absorb their operational losses. As a result of this the small holder crop

farmers' cooperatives societies such as savings and credit cooperative societies received financial assistance from World Bank in which the Fadama development association serve as a link (National Fadama Development Program III, 2009).

The National Fadama Development Program (NFDP III) is an international development association (IDA) credit facility which represents the World Bank. It is co-financed by the federal government of Nigeria, state government, local government and communities in terms of their counterpart contributions. The NFDP III was declared effective in March, 2009 as the base line and 2013 being the end line (National Fadama Development Program III, 2009).The aim is to increase the incomes of farmers, the program uses the community driven development approach which is being supported by an international development association credit facility (National Fadama Development Program III, 2009). The development objective is to increase the incomes of users of land and water resources on a sustainable basis that relies on facilitation for demand driven investments and empowerment of local community groups and to improve productivity and land quality (National Fadama Development Program III, 2009).

The micro finance power of cooperative societies cannot be overemphasized. Apart from ready access to micro credits, Small Scale Enterprises (SSEs) obtain loans with soft and convenient term. The major emphasis in cooperative is on self-help, thus people cooperate because they realize that it is extremely difficult to achieve some goals alone (Ayoola 2006, Alabi and Ahiawodzi, 2007, Oladejo 2008; Yunus, 2008). The best way of pushing the limit of economic problem of scarcity is by working together. This is because more can be accomplished when people coordinate their efforts with each other take concerns and talents of other into considerations (Reeve,

2003). Invariably, cooperative societies remain the better alternative to economic reconstruction of the government, but its vast potentials have always been jettisoned by the Nigerian Government (Zarafshani *et al*., 2010). This study therefore, analyze impact of savings and credit cooperative societies' in combating poverty .As such the study provides answers to the following research questions.

(i) What are the socio-economic characteristics of beneficiaries and non-beneficiaries of SACCOS Credit in the study areas?

(ii) What are the poverty status of beneficiaries and non-beneficiaries of SACCOS Credit?

(iii) What is the impact of credit on the crop output of beneficiaries and non-beneficiaries of SACCOS Credit?

(iv) What is the impact of credit on poverty status of beneficiaries and non-beneficiaries of SACCOS Credit?

(v) What are the factors influencing the level of participation in SACCOS?

(vi) What are the constraints faced by beneficiaries and non-beneficiaries of SACCOS in the study areas?

1.3 Objectives of the Study

The broad objective of the study was to analyze the impact of savings and credit co-operative societies in combating poverty among farmers in Bosso, Lapai and Wushishi local Government Areas of Niger State, Nigeria. However, the specific objectives were to:

(i) describe the socio-economic characteristics of beneficiaries and non-beneficiaries of SACCOS Credit in the study areas;

(ii) determine the poverty status of beneficiaries and non-beneficiaries of SACCOS Credit;

(iii) analyze the impact of credit on the crop output of beneficiaries and non-beneficiaries of SACCOS Credit;

(iv) analyze the impact of credit on poverty status of beneficiaries and non-beneficiaries of SACCOS Credit;

(v) determine the factors influencing the level of participation in SACCOS; and :

(vi) describe the constraints faced by beneficiaries and non-beneficiaries of SACCOS in the study areas.

1.4 Justification of the Study

Cooperative organizations seem to be veritable sources of funding for smallholder farmers to earn extra income and to grow their own food (Mavimbela *et al.*, 2010). Nigerian government at different times has been launching different poverty alleviation programmes at different times by different regimes of government; yet the outcome is always a deviation from expectations (Girei *et al.*, 2013). Policy maker and governments have neglected these veritable sectors.

The World Bank in its 'May 2013 Nigeria Economic Report' said the number of Nigerians living in poverty was increasing too rapidly. A grim statistics of the population of Nigerians in abject poverty released by the National Bureau of Statistics which said that about 112million Nigerians live below the poverty line (National Bureau of Statistics 2013).This followed another depressing disclosure by the World Bank, which also said that the population of Nigerians in poverty has increased considerably. The figure represents about 67% of the entire population and that the scourge will continue to rise if nothing is done to arrest it (World Bank 2013). This bizarre picture requires an urgent intervention of which the proposed study on the savings and credit cooperative societies is one. The preponderance of the poor population in the activities of the informal sector of the Nigeria economy implies that

any meaningful effort to reduce the incidence of poverty in the country most necessarily be focused on participants in this unrecognized yet important sector. Currently, there is a relatively scanty research on the activities of the informal financial institutions in most developing countries including Nigeria, especially as it relates to poverty reduction. This study was meant to fill this gap by providing first hand data and analyze the impact of Savings and Credit cooperative societies in combating poverty.

1.5 Hypotheses of the Study

The following hypotheses were tested in line with the objectives (iii) and (iv). The annual farm income was used as proxy for poverty status:

Ho: there is no significant difference between the crop outputs of beneficiaries and non-beneficiaries of SACCOS Credit.

Ho: there is no significant difference between the per capita annual farm income of beneficiaries and non-beneficiaries of SACCOS Credit.

CHAPTER TWO

LITERATURE REVIEW

2.1 The Concept of Savings

According to FAO (1995) savings are resources which one decides to put aside for investment purposes and not for luxury. What people save, avoiding consuming all their income, is called "personal savings". These savings can remain on the bank accounts for future use or be actively invested in houses, real estate, bonds, shares and other financial instruments. A study by EFINA (2011) found both savers and non-savers agreeing that personal savings plays an important role in people‘s lives. Savings ensures the continuity of a business as it provides fresh funds to grow the business. It helps in the attainment of set goals, and at the same time encourages financial discipline. Savings also act as a means of insurance, so that emergencies can be dealt with as they arise.

2.2 Informal Rural Finance Providers in Nigeria

In developing countries, about 70% of adults have no access to financial service (Richter, 2011) and this could be higher in rural areas, while about 90% of the rural sector financial needs are satisfied by informal rural finance providers (World Bank, 1994). The report specifies that the informal sources provide the bulk of rural dwellers’ financial needs for five active occupational groups, namely: farmers, artisans, market women, traders and local manufacturers. World Bank (2000) and Akingunola and Onayemi (2010) identified informal rural finance providers in Nigeria to include: trade and input supply financing, cooperative societies, nongovernmental organizations (NGOs), *esusus*, families, friends and money lenders.

Informal finance providers identified by Buckley (1997) include supplier's credit, money lenders and rotational savings scheme.

Iganiga (2008) identifies NGOs, money lenders, friends, relatives, savings collectors, rotating savings and credit association, credit unions and cooperative societies as main providers of rural finance in Nigeria. These informal finance providers provide their savings and loan services on favourable terms and at cheaper cost (Oloyede, 2008).

2.3 Concept of Cooperative Societies

Finding a universally acceptable definition for cooperative societies is difficult if not impossible because a cooperative society means different things to different people. Cooperative societies are community based, self-controlled and self-funded microfinance institutions (Simkhada, 2004) because they are meant to operate at the micro level in most cases to serve the low level strata of the economy, to people who in most cases lack access to formal banking system. Cooperatives are financial organizations that are owned and controlled by the members and they provide savings and credit services to their members in the community (Sharma *et al*., 2005).

Cooperatives are a form of microfinance institutions owned by group of people who are the members and they provide small scale financial services – majorly savings and loans – just like any other microfinance institutions to their members. Cooperatives are voluntary associations that are members owned, self-managed and democratically controlled within a specific location (Adebayo and Yusuf, 2004).

Cooperative can be seen as an arrangement designed to improve the lot of individuals and enhance micro and small scale entrepreneurs both in the rural and urban areas in mobilizing savings and accessing fund as loan as at when needed from the scheme.

Cooperative societies are privately organized association of individuals of like minds who come together to operate a savings and loan program among themselves (Oluyombo, 2010). Co-operative societies in Nigeria operate at three levels: the primary, secondary and tertiary. The primary societies operate at the level of a community, the secondary society operate at the level of the local government area, while the tertiary or apex co-operative organization operates across the local government areas but within the state (Ukpere *et al*, 2011).

2.4 Concept of Poverty

According to Hazell and Haddad (2001) poverty consists of two interacting deprivations- physiological and social. Physiological deprivation describes the inability of individuals to meet or achieve basic material and physiological needs which can be measured either as a lack of income, which limits access to food and to education, health, housing, water and sanitation services or by the failure to achieve desired outcomes, such as a high quality diet rich in micronutrients, health status, educational attainment and the quality of health, water and sanitation services received, while social deprivation refers to an absence of elements that are empowering, such as autonomy, time, information, dignity and self-esteem.

2.5 Poverty in Rural Nigeria

About 53% of Nigeria's population resides in rural areas, which is characterized by limited access to social services and infrastructures such as drinking water, electricity supply, decent accommodation, well-equipped schools, motor-able roads and modern healthcare facilities. Despite its abundant human and natural resource endowments, poverty is widespread in Nigeria. Several surveys have established that majority of Nigerian people live below the national poverty line and possess little or no formal

education, land and other resources with which to earn a decent living and extricate them from the vicious grip of poverty. Poverty in Nigeria is more austere in the rural areas. The bulk of the rural populace lives in abject poverty. They rely on agriculture for food and income. Rural farmers provide about 90% of the country's food from rain-fed agricultural system. The majority of these farmers (estimates says 44% of male and 72% of female [IFAD, 2004]) cultivate small plots of land not exceeding I hectare. Yet hunger, malnutrition and illnesses are wide-spread among rural farmers.

Majority of these farmers have been stricken down by HIV/AIDS. Poverty defines a general condition of deprivation involving inability to meet one's basic needs such as food, shelter, water sanitation and health care. It results from various factors that interact with and reinforce each other in ways that deepen the precarious living conditions of the poor. For several years, successive governments in Nigeria concentrated development programs and activities in the urban sector, neglecting the rural areas (Olaniyan, 2000).

2.6 Measurement of Poverty

The purpose of poverty measurement is to find out who is poor, how many people are poor, and where the poor are located. There are two approaches to the construction of poverty line, the absolute poverty approach and the relative poverty approach. The former is based on cost of basic needs (CBN) approach in which some minimum nutritional requirement is defined and converted into minimum food expenses. A household is then defined as poor if its income or consumption level is below this minimum. The relative approach which this study adopted takes a proportion of mean annual income as the poverty line. For example, one -third and two-thirds of mean annual income is popular, the former defines core poverty line and the latter

defines moderate poverty line (Durojaiye, 1995; World Bank, 1996; Ayinde, 1999; Omonona, 2001). The most frequently used measurements are:

1. The head count poverty index given by the percentage of the population that live in the household with annual income per capita less than the poverty line.
2. The poverty gap index which reflects the depth of poverty by taking into account, how far the average poor person's annual income is from the poverty line.
3. The distributionally sensitive measure of squared poverty gap which reflects the severity of poverty.

Though some studies have used income as indicator for poverty line (Aromolaran *et al.*, 2002; Ayinde, 2003), this study however adopted annual farm income to construct the poverty line.

2.7 Impact Evaluation of Informal Credit on Poverty Reduction

Arguments in favour of informal credit being a mechanism for reducing poverty has been made and there is strong opinion that the productive base of the poor will improve if given access to credit which will in turn enhance income growth (Montgomery and Weiss, 2005). In general, access to credit by the poor will improve their social networks, serve as cushion against unforeseen events (risk management) and enhance consumption smoothing. In other words, the availability of credit will help the poor to meet 'promotional' (income creating) and protectional (consumption smoothing) purposes.

The transformation and emerging trends in the micro finance industry have brought to bear the need to ascertain if the original poverty focus of informal credit is still being

maintained. Thus, it has become imperative and of great policy interest to answer the question of the impact of informal credit on the poor (particularly the core poor). Hence, there is the need to assess both the depth and breadth of outreach of informal credit programme, the impact of access to informal credit services on the welfare of clients and the costs of achieving the impact. Several tools are available to measure different forms of impact and several empirical studies have been undertaken in this direction using a mixture of qualitative and quantitative econometric tools. In the Latin America region, the logit, longitudinal model have been undertaken by Hulme and Mosley (1996), Mosley (2001), Dunn and Arbuckle (2001) and MKNelly and Dunford (1999). All through the empirical literature, the procedures adopted have been a mix of both qualitative and quantitative methods of analysis. Skoufias *et al*., (2004) observe that despite a plethora of informal financial institution projects around the world and related impact studies, much debate remains as to the benefits for poor participants and the economy from further expansion of microcredit.

2.7.1 Impact assessment methods

According to Haggblade and Hazel (1989), impact assessment method is classified into three broad methods namely quantitative method which include first: (i) social experiments (ii) cross sectional and longitudinal comparison (iii) econometrics (iv) propensity score matching (v) double difference estimator: Secondly, qualitative method and : third the combination of quantitative and qualitative methods:-

(a) Social Experiment

This involves the use of experiment designs also known as randomization. In this method, intervention program is randomly allocated among eligible beneficiaries such that the assignment processes itself will create comparable treatment and control

groups that are statistically equivalent to one another, given appropriate sample size. Theoretically, the control groups generated through random assignment serve as a perfect counterfactual, free from the troublesome selection bias issues that exist in all evaluation (Haggblade and Hazel 1989). The main benefit of this method is said to be simplicity in interpreting results, because the program impact on the outcome being evaluated can be measured by the difference between the means of the treatment group and the control group. However, while experiment designs of social experiment methods are considered the optimum approach to estimating project, in practice there are several problems (Haggblade and Hazel 1989). These problems include the fact that randomization may be unethical owing to the denial of benefits or services to otherwise eligible members of the population for the purposes of the study. Secondly, it can be politically difficult to provide an intervention to one group and not another. Third the scope of the program may mean that there are non-treatment groups such as with a project or policy change that is broad in scope. Fourth, individuals in control group may change certain identifying characteristics or contaminate the results. Fifth, it may be difficult to ensure that assignment is truly random. Finally, experimental designs can be expensive and time consuming in certain situations, particularly in the collection of new data.

(b) **Cross-Sectional and Longitudinal Comparison Methods**

These techniques are used to evaluate impact assessment of project when it is not possible to construct treatment and comparison groups through experimental design (Haggblade and Hazel 1989). Cross-sectional comparison compare households in program to those not in program as such the expected income of those not in programs. It was however argued that non-participants may differ from participant

and those cross-sectionals differences may not only be due to the intervention program.

On the other hand, longitudinal otherwise called reflexive is an impact assessment method in which a baseline survey of participant is done before the program and a follow-up survey is done after. The baseline provides the comparison group, and impact is measured by the change in outcome indicators before and after the program (Baker, 2000).

2.7.2 Double difference method

According to Nkonya *et al.,* (2008), double difference methods compares change in outcomes pre and post program for participant and non-participant. It is mostly used especially if selection bias is additive and time invariant. Using this techniques\ outcome is not affected by expectations of participation because it's usually nets out the selection bias (Nkonya *et al.,* 2008). This method is said to be sensitive to data quality as measurement error is likely more serious in comparing change in variables than comparing levels.

2.7.3 Econometrics methods of impact evaluation

The method according to Nkonya *et al.,* 2008 is developed to address selection biases. Econometrics is said to account for effects of differences in observable characteristics across individuals or over time and it has controls for many variables simultaneously. Maredia *et al.,* (2003) on the other hand view econometric methods of impact evaluation as an approach that employs a production function, cost function, or total factor productivity analysis to estimate the change in productivity due to investment in programme. Using the same data base, econometric studies of research impacts are conducted within the framework of a production that incorporates conventional inputs

(land, labour fertilizer, etc.), non-conventional inputs (education, infrastructure, etc.), and the stock of technical knowledge (investment in research and extension). However, the problems associated with the use of econometrics method are the fact that parametric approaches often used depend on valid parametric assumptions (Nkonya *et al.,* 2008). Secondly, there is problem of validity of heterogeneity and exclusion assumptions about instrumental variables. Third, there is need to address endogeneity of participant in projects. Forth, biases often introduced by comparing non-comparable observations.

2.7.4 Qualitative methods of impact evaluation

Qualitative techniques are used for carrying out impact evaluation with the intent to determine impact by the reliance on something other than the counterfactual to make a casual inference. The focus instead is on understanding processes, behaviours, and conditions as they are perceived by the individuals or groups being studied. Qualitative methods and particularly participant observation can provide insight into the ways in which households and local communities perceive a project and how they are affected by it (Baker, 2000). Qualitative approach is useful for organizational approach have limited ability to attribute impacts to interventions and have problems of sampling and interviewer biases.

Nevertheless, qualitative impact assessment techniques are the techniques developed for rapid rural assessment, which rely on participants knowledge of the conditions surrounding the project or program being evaluated, or participating evaluations in which stakeholders are involved in all stages of the evaluation, determining the objectives of the study, identifying and selecting indicators to be used, and participatory in data collection and analysis (World Bank, 1996).

2.8 Factors Influencing the Participation of Members of Agricultural Cooperatives

Arayesh and Mammi (2010) in considering the factors influencing the participation of members of agricultural cooperatives in decisions concerning the management of agricultural cooperatives in Tehran concluded that there is significant and positive relationship between the member's age, educational level, number of shares (in cooperative) and the resulting profits from the one hand and the level of their participation in decision-making of the cooperative company from the other.

Olawale (2012) in considering the assessment of women's participation in cooperative societies And Its Determinants In Yewa North Local Government Area of Ogun State, Nigeria concluded that cooperative societies, years of business experience, and educational level attained were statistically significant in relation to women's participation in cooperative societies. Years of business experience is statistically significant at 10% and positive which shows a direct relationship with participation in cooperative societies as a woman. This implies that as years spent in business increases, women increase their participation in cooperative activities. Educational level is statistically significant at 10% and positively related with women's participation in cooperative societies. Form of cooperative societies especially producers and credit and thrift were statistically significant and positively related with women's participation in cooperative societies.

Muhammad et al., (2011) observed that household size is a significant factor ($p < 0.05$) influencing participation in Fadama II project. The positive coefficient (0.0193) suggests that individuals with large household size were likely to participate in the project as they appeared to have more family burden to contain

with, in terms of social and economic services, and therefore need support to meet their family daily needs. Educational level was also found to be a positive significant factor ($P<0.01$) influencing beneficiaries' participation. This was measured in terms of number of years spent in school. The results reveal that the beneficiaries possessed one form of education or another and this affirms that the beneficiaries have spent some number of years in school. This educational attainment was likely to assist them in understanding the objectives of the project and in records keeping. Membership of cooperative society has positive coefficient (0.379) and was a significant factor ($P<0.01$) influencing beneficiaries' participation in Fadama II project. The positive coefficient reveals that the more an individual participate in cooperative associations the more likely he is to benefit in the project. This result further affirms that individuals that benefited in the project have been members of cooperative societies for certain period of time.

A study by Oboh and Kushwaha (2009) employing the Multiple regression analysis on a data set of 300 farm households revealed that income, distance between home and bank, farm size and evidence of previous loan as having significant effects on the size of loan received. The study recommended that government should increase the volume of loan facilities to the Nigerian Agricultural Cooperative and Rural Development Bank (NACRDB) for onward disbursement to qualified applicants. By so doing, the individual loan size of farmers will increase and this may lead to increased farm output, productivity and income.

CHAPTER THREE

METHODOLOGY

3.1 Study Area

Niger State lies in the north central part of the country's geopolitical zones, between Latitude 9° 30" north of the equator and Longitude 6° 15" east of the prime meridian. It is one of the 36 States of Nigeria, created out of the defunct North- Western State. It shares border with the Republic of Benin (West), Zamfara State (North), Kebbi (North West), Kogi (South), Kwara (South West), Kaduna (North East) and the FCT (South East) . It comprises 25 local government areas (LGAs) grouped into 3 administrative zones; A, B, C with 8, 9 and 8 LGAs respectively. It is the largest state in Nigeria, as it covers about 86,000Sqkm (or about 8.6 Million hectares) representing about 9.3% of the total land area of the country. The major food crops produced are: maize, sorghum, millet, melon, soya bean, beniseed, cowpea, groundnut and rice at subsistence level. At the end of 2012, the poverty rate of Niger State was estimated at 33.8% (National Bureau of Statistics 2012). Based on the annual growth rate of 3.4%, the state has a projected population of 5,235,294 and 5,416,354 by 2014 and 2015 respectively (UNFPA 2009).

3.2 Sampling Procedure

Combinations of purposive and random sampling techniques were used to select respondents for this study. The first stage involved a purposive selection of these three (3) local government areas because of the availability of more members of Savings and Credit Cooperative Societies (SACCOS) with documented records among the three senatorial zones of the state. The three (3) local government areas selected represent the three (3) senatorial zones of the state.

The local government areas covered include; Lapai (South), Bosso (East) and Wushishi (North). In the second stage, about 10% of the respondents from the beneficiaries and non-beneficiaries of SACCOS Credit from each of the three (3) LGAs were randomly selected with the aid of lottery method from the list of cooperators provided by the desk officer from Niger state Fadama coordination office as shown on Table 1.

Table3.1: Distribution of farmers according to membership of SACCOS

L.G.As	**Beneficiaries of SACCOS Credit**		**Non-Beneficiaries of SACCOS Credit**	
	Sampling Frame*	Sample Size (10%)	Sampling Frame*	Sample Size (10%)
Lapai	270	27	230	23
Bosso	310	31	280	28
Wushishi	270	27	210	21
Total	850	85	720	72

*Source: Agricultural Development Programme–Niger State Fadama Coordination Office (ADP-NSFCO, 2013).

3.3 Methods of Data Collection

Primary data were used for this study. These were collected with the aid of structured questionnaire. Information collected include: socio-economic characteristics of beneficiaries and non-beneficiaries of SACCOs credit such as age, education level, household size, secondary occupation, farms size, farming experience, annual income, farm and non-farm income, amount of contribution by members of savings and credit cooperative societies.

The outputs of the major crops grown by the respondents were determined (maize, sorghum, millet, melon, soya bean, beniseed, cowpea, groundnut and rice) into kg-Grain Equivalents.

3.4 Analytical Techniques

3.4.1 Descriptive statistics

Descriptive statistics such as; percentages, frequency distribution table were used to achieve objectives (i) and (vi).

3.4.2 Foster-Greer-Thorbecke (FGT) poverty measures;

Foster-Greer-Thorbecke (1984) was used to achieve objective (ii).This was used to determine the Poverty Status of beneficiaries and non-beneficiaries of SACCOS Credit before and after obtaining credit. The model is specified as:

$$P_\alpha = \frac{1}{N}\sum_{i=1}^{Hi}\left(\frac{Z - Y_i}{Z}\right)^\alpha$$

$$P_0 = \frac{H_0}{N} \quad \text{.....(i)}$$

$$P_1 = \frac{1}{N}\sum_{i=1}^{Hi}\left(\frac{Z-Y}{Z}\right) \quad \text{.....(ii)}$$

$$P_2 = \frac{1}{N}\sum_{i=2}^{Hi}\left(\frac{Z-Y}{Z}\right)^2 \quad \text{.....(iii)}$$

Where,

P is the poverty index, α is a non-negative parameter, which takes the values 0, 1 and 2. As the exponent increases the "aversion" to poverty as measured by FGT index increases. When α =0, this index gives the head count ratio or the incidence of poverty which will be the percentage of beneficiaries and non-beneficiaries of savings and credit cooperative societies that are classified poor in the area. When α =I, this index measures the poverty depth that is the proportion of the poverty line that the average poor will require to attain to the poverty line while severity of poverty is measured when α =2, Which is the mean of square proportion of the poverty gap.

When multiplied by 100, it gives the percentage by which a poor household's per capita annual farm income should increase to push them out of poverty.

N= No of Respondents.

Hi = Head count of the poor (Number of poor farm household).

Yi = Per capita annual farm income in Naira.

Z = Poverty line using 2/3 of mean per capita annual farm income of beneficiaries and non-beneficiaries of savings and credit cooperative societies in the study areas.

Construction of the Poverty Line

According to (FOS, 1999) and (Canagarajah and Thomas, 2002), there is no official poverty line in Nigeria and as such many earlier studies have used poverty lines which are proportions of the average per capita income or expenditure. However, in this study per capita annual farm income was used. Therefore, the poverty line was defined as the two-thirds (2/3) and one-third (1/3) of the mean value of per capita annual farm income for beneficiaries and non-beneficiaries before and after obtaining credit in the study area.

PCFI = TFI/HHS…….. (iv)

MPCFI = TFI /TNR …… (v)

PL = 2/3 or 1/3 * MPCFI…… (vi)

Where:

PCFI = Per Capita Annual Farm Income

TFI = Total Farm Income

HHS = Household Size

MPCFI = Mean Per Capita Annual Farm Income

TNR = Total Number of Respondent

PL = Poverty Line

The Poverty line was placed at two-third and one-third mean per capita annual farm income of respondents as adopted by FOS (1999) and the World Bank/FOS/NPC (1998). Based on this, the respondents were classified into three groups:

- Non-Poor: those with annual farm income above two-third mean per capita annual farm income, i.e. (above ₦192,885.30 and ₦193,409.70 per annum before and after obtaining credit).
- Moderate Poor: those with annual farm income between one-third and two-third mean per capita annual farm income, i.e.(between ₦96,442.66 and ₦192,885.30 per annum before while between ₦96,704.86 and ₦193,409.70 per annum after obtaining credit).
- Core poor: those with annual farm income below one-third mean per capita annual farm income, i.e. (below ₦96,442.66 and below ₦96,704.86 per annum before and after obtaining credit respectively).

3.4.3 Double difference estimator of the impact of credit on the crop output of beneficiaries and non-beneficiaries of SACCOS Credit

This model was used to achieve objective (iii) that is to analyze the impact of credit on the crop output of beneficiaries and non-beneficiaries of SACCOS Credit. Information on both beneficiaries and non-beneficiaries were provided for before and after obtaining credit, it is literally a "difference of difference" (Albouy, 2010). The outputs of the major crops grown by the respondents were determined (maize, sorghum, millet, melon, soya bean, beniseed, cowpea, groundnut and rice) into kg-Grain Equivalents.

A positive mean double difference indicates a credit impact on beneficiaries, while a negative mean double difference indicates that the credit had no impact on beneficiaries (Nkonya *et al* ., 2008)The model is specified as:

$$DDE = \left[\left(\frac{1}{p}\sum_{i}^{p}\left(\overline{Y}_{tia} - \overline{Y}_{tib}\right)\right) - \left(\frac{1}{c}\sum_{j}^{c}\left(\overline{Y}_{oja} - \overline{Y}_{ojb}\right)\right)\right] \ldots\ldots\ldots\ldots\ldots\ldots (vii)$$

Where:

$\overline{Y}_{tia} - \overline{Y}_{tib}$ = difference of mean crop output of beneficiaries after and before obtaining credit, respectively.

$\overline{Y}_{oja} - \overline{Y}_{ojb}$ = difference of mean crop output of non-beneficiaries after and before obtaining credit, respectively.

P = number of beneficiaries.

C = number of non-beneficiaries.

DDE = the difference between the mean changes in crop output for beneficiaries and non-beneficiaries.

3.4.4 Double difference estimate of the impact of credit on the poverty status of beneficiaries and non-beneficiaries of SACCOS Credit

This was used to achieve objective (iv) that is to analyze the impact of credit on the poverty status of beneficiaries and non-beneficiaries of SACCOS Credit. Per capita annual farm income was used as a proxy for Poverty Status.

The model is specified as:

$$DDE = \left[\left(\frac{1}{p}\sum_{i}^{p}\left(\overline{Y}_{tia} - \overline{Y}_{tib}\right)\right) - \left(\frac{1}{c}\sum_{j}^{c}\left(\overline{Y}_{oja} - \overline{Y}_{ojb}\right)\right)\right] \ldots\ldots\ldots\ldots\ldots\ldots (viii)$$

Where:

$\overline{Y}_{tia} - \overline{Y}_{tib}$ = difference of per capita annual farm income of beneficiaries after and before obtaining credit, respectively.

$\overline{Y}_{oja} - \overline{Y}_{ojb}$= difference of per capita annual farm income of non-beneficiaries after and before obtaining credit, respectively.

P = number of beneficiaries.

C = number of non-beneficiaries.

DDE = the difference between the mean changes in per capita annual farm income for beneficiaries and non-beneficiaries.

Athey and Imbens (2006) worked on non-parametric approaches to difference-in-differences and it was adopted by Khandker *et al.*, (2012). The regression model serve as a supporting technique to that which has been obtained by the double difference estimate (Khandker *et al.*, 2012). However, in order to take observable heterogeneity of individuals into account, Verners calculated the double difference estimator from a regression model including other personal characteristics. It is specified as:

$$Y_{it} = \alpha + \beta T_i + \gamma P_t + \delta (T_i * P_t) + \beta_1 X_1 + \beta_1 X_{2+\ldots\ldots\ldots+} \beta_6 X_{6+} \varepsilon_{it} \quad \text{(ix)}$$

Where Y is the outcome of interest, T is the treatment and control groups which is indicated by dummy with equal one for those observations in treatment group and zero for control groups; P is the time period (first period is for before and second period is for after project) which is indicated by dummy with equal one for those observations in the treatment and control group in the second period (after) and zero for first period (before). The coefficient of interest, is the interaction term which is (T_i*P_t).

Y_{it} = crop output and per capita annual farm income in period t of the project.

T_i = Dummy (1 if respondent *i* is beneficiaries and 0 otherwise)

P_t = Dummy (1 indicating after obtaining the credit and 0 before obtaining the credit).

(T_i*P_t) = An interaction term between the treatment and time period.

β_i=Coefficient for the respective variables

X_1= Age (years)

X_2= Educational Level (years of schooling)

X_3= Household Size (numbers of persons)

X_4= Farming Experience (years)

X_5= Secondary Occupation (Civil Servant=1, Artisan=2, Trading=3, Fishing=4, Others=5).

X_6= Income Size (Naira/Annum)

ε_{it} = the error term of the regression with the variance σ^2

α, β, γ, δ are the regression parameters to be estimated.

3.4.5 Test of difference between means of crop output and per capita annual farm income of beneficiaries and non-beneficiaries of SACCOS Credit

Paired t-test was used in testing the two hypotheses for this study. That is no significant difference between the crop output and per capita annual farm income of beneficiaries and non-beneficiaries of SACCOS Credit. The per capita annual farm income was used as proxy for poverty status. A paired t-test was used to compare two population means where you have two samples in which observations in one sample can be paired with observations in the other sample. It is used for before-and-after observations on the same subjects.

The model is specified as follows:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt{\frac{{S_1}^2}{n} + \frac{{S_2}^2}{n}}} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (x)$$

Where;

t = paired t-statistic

Specification of paired t-test variable for crop output of beneficiaries and non-beneficiaries of SACCOS Credit. The Crop output was measured in grain equivalents.

$\overline{X}_1$ = Mean crop output of beneficiaries of SACCOS Credit.

$\overline{X}_2$ = Mean crop output of non-beneficiaries of SACCOS Credit.

S_1^2 = Variance of crop output of beneficiaries of SACCOS Credit.

S_2^2 = Variance of crop output of non-beneficiaries of SACCOS Credit.

n = Number of selected members of beneficiaries of SACCOS Credit.

n = Number of selected members of non-beneficiaries of SACCOS Credit.

While the Specification of paired t-test variable for the per capita annual farm income (Naira/annum) of beneficiaries and non-beneficiaries of SACCOS Credit. The per capita annual farm income was used as proxy for poverty status.

$\overline{X}_1$ = Mean per capita annual farm income of beneficiaries of SACCOS Credit.

$\overline{X}_2$ = Mean per capita annual farm income of non-beneficiaries of SACCOS Credit.

S_1^2 = Variance of per capita annual farm income of beneficiaries of SACCOS Credit.

S_2^2 = Variance of per capita annual farm income of non-beneficiaries of SACCOS Credit.

n = Number of selected members of beneficiaries of SACCOS Credit.

n = Number of selected members of non-beneficiaries of SACCOS Credit.

3.4.6 Multiple regression analysis

This was used to achieve objective (v) that is to determine the factors that influence the level of participation of members in saving and credit cooperative societies. Amount of contribution by members of savings and credit cooperative societies was used as proxy for the level of participation of members in saving and credit cooperative societies.

The regression model specification is

$Y= \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + e$…….. (xi)

Where;

$Y_{i=}$ Amount of Contribution by Members (Naira/Month).

X_1=Age (Years).

X_2= Sex (Male=1, Female=0).

X_3= Secondary Occupation (Civil Servant=1, Artisan=2, Trading=3, Fishing=4, Others=5).

X_4=Household Size (Number of Persons).

X_5=Education (Year of Schooling).

X_6= Total Farm Income (Naira/annum).

X_7=Total Non-Farm Income (Naira/annum).

X_8=Interest Charged on Credit (Naira/annum).

β_i = The coefficients for the respective variables.

3.4.7 Operationalization and measurement of variables

Impact: Impact refers to the outcome, effect or resultant situation of the programme implementation on the livelihood of respondent in befitting communities. In order to examine the impact, the “before” and “after” concept was used. However, in this

study indicators of livelihood impact were output and Annual farm income, defined and measured as follows:

Crop Output: This variable was measured as total output of the following crop grown (maize, sorghum, millet, melon, soya bean, beniseed, cowpea, groundnut and rice) 100kg/bag-Grain Equivalents accruing to the farmer during 2009 cropping season for before and 2013 cropping season for after.

Annual Farm Income: In this study annual farm income referred to the total money in naira that accrues to the farmer as a result of the sale of crops in the periods under review (2009 and 2013). It was measured in Naira.

Per Capita Annual Farm Income: In this study the per capita annual farm income referred to the total annual farm income divided by the household size.

Mean Per Capita Annual Farm Income: In this study the mean per capita annual farm income referred to the total annual farm income divided by the total number of respondents.

Dependent and Independent Variables

The variables selected and included in the multiple linear regression model are as follows:

1. **Amount of contribution (Y):** This was used as proxy for the level of participation of members in savings and credit cooperative societies as the dependent variable. This is the amount of money contributed by members of savings and credit cooperative societies on monthly basis.

2. **Age(X_1):** This is the age of the household head in years. An inverse relationship is expected between the age and the level of participation of members in savings and credit cooperative societies.

3. **Sex (X_2):** The sex of the respondents was included in the model. A direct relationship is expected between sex and the level of participation of members in savings and credit cooperative societies.

4. **Secondary Occupation (X_3):** This is the economic activities engaged by farmers apart from farming. These include trading, artisans, fishing and civil servant.

5. **Household Size(X_4):** This is the total number of members in the household of the farmer (wives, children, and other dependents) living in a household at the time of investigation. A direct relationship is expected between the household size and the level of participation of members in savings and credit cooperative societies**.**

6. **Educational level (X_5):** This is the number of years that the household head had spent in formal school, which was stated as primary education, secondary education and tertiary education. A direct relationship is expected between the educational level and the level of participation of members in savings and credit cooperative societies**.**

7. **Income(X_6 and X_7):** This is the income (both farm and non-farm) accruing to the respondents over a period. A direct relationship is expected between the income (both farm and non-farm) and the level of participation of members in savings and credit cooperative societies.

8. **Interest Rate(X_8):** This is the amount of interest charged on the credit, measured in naira. An inverse relationship is expected between the interest rate charged on credit and the level of participation of members in savings and credit cooperative societies.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Socio-Economic Characteristics of Respondents

In this section the general socio-economic characteristics of beneficiaries and non-beneficiaries of SACCOS Credit is provided. These include age, and household size, farming experience, secondary occupation, farm size and educational level as shown in table 4.1.

4.1.1 Age distribution

The result in table 4.1 revealed that majority (61%) of the beneficiaries and non-beneficiaries were between the ages of 37-48 years. The mean ages for beneficiaries and non-beneficiaries of SACCO's credit were 41 and 38 years respectively. This implies that majority of respondents were still within a productive and active working age range, hence to participate or produce to earn some income from farming and non-farming activities. This finding concurred with the findings of Windapo and Olowu (2001) and Bzugu *et al.,* (2005) who reveal that productive and active persons participates more in agricultural and community development activities of such cooperative societies.

4.1.2 Educational level

It was found that about 40% of the beneficiaries and 38% of the non-beneficiaries had secondary education. About 36% of the beneficiaries and 46% of the non-beneficiaries had primary education. Also 11% of the beneficiaries and 6% of the non-beneficiaries had tertiary education. Majority (76%) of the beneficiaries and the non-beneficiaries (84%) had some form of formal educational qualification. This might be because most of those who understand the value of cooperative societies and

join them were those who had a certain level of education and that explained civil servants participation. The educational background would no doubt help in decision making especially in terms of meaningful managerial decisions, leadership and investments. This result concurred with the finding of Idrisa *et al.,* (2007) who reported that more than half (63%) of the respondents having attained formal education.

4.1.3 Household size

Majority 62% of beneficiaries and 78% of non-beneficiaries had between 2-13 household sizes. The mean household size for beneficiaries and non-beneficiaries of SACCO's credit were 11 and 10 respectively. This shows that there is no much difference in the household size among the two categories of the respondents. The implication is that the household size may likely enhance the family labour supply on the farms, hence supporting favorably, productive capacities of the farmers already enhanced by their age. This corroborate with the findings of Adegbite and Oluwalana 2004; Adegbite *et al.,* 2007 that the larger the household size, the higher the likelihood of sustainable labour efficiency on farmers' farm, given the constant labour supply.

4.1.4 **Farming experience**

It was found that about 66% of the beneficiaries and 76% of non-beneficiaries had between 11-34 years of farming experience. The mean farming experience for farmers beneficiaries and non-beneficiaries of SACCO's Credit were 25 and 23 years, respectively. This shows that there is no much difference in the years of experience among the two categories of the respondents. Farming experience is used as a measure of management ability, the more experience the farmer is, the more his

ability to make farm decision. This result showed that most of the respondents had long years of farming experience, implying that such farmers are likely to make decisions that would increase their output and income. This finding is in tandem with the findings of kebbeh *et al*., (2003) which found an average of 21 years of farmers' experience in rice farming in Kaduna and Niger States of Nigeria.

4.1.5 **Secondary occupation**

It was found that about 49% of the beneficiaries and 54% of non-beneficiaries had trading as secondary occupation, while about 16% of the beneficiaries and the non-beneficiaries (17%) had fishing as secondary occupation. It reveals that most of the respondents in the study area engaged in one or more economic activities such as artisan, trading, fishing and civil service. This could be regarded as a positive development because there would be no time for idleness. The implication for this is that farmers with other sources of income may be motivated to save as a result of the extra income compared to what farming alone would have provided.

4.1.6 **Farm size**

It was found that most (67%) of the beneficiaries and 71% of non-beneficiaries had between 3.0-4.9 hectares of farmland while about 19% of the beneficiaries and 1% of non-beneficiaries had 5.0 or more hectares of farmland. The mean farm size for beneficiaries and non-beneficiaries were 4 and 3 hectares respectively. This implies that majority of the respondents still fall within the range of small-medium holder farmers (Geofrery, 2004). This findings agrees with Okunlola and Adekunle, (2000) that majority of the Nigerian farmers are the small scaled.

Table 4.1: Socio-Economic Characteristics of Respondents in the Study Area

	Beneficiaries		**Non –Beneficiaries**	
Characteristics	Frequency	Percentage (%)	Frequency	Percentage (%)
Age				
25-30	7	8	12	17
31-36	12	14	13	18
37-42	31	36	31	43
43-48	21	25	12	17
49-54	12	14	2	3
55-60	2	2	2	3
Mean	41		38	
Standard Error	0.75		0.80	
Educational level				
No formal education	11	13	8	11
Primary education	31	36	33	46
Secondary education	34	40	27	38
Tertiary education	9	11	4	6
Household size				
2-7	28	33	25	35
8-13	25	30	31	43
14-19	23	27	11	15
20-25	9	11	5	7
Mean	11		10	
Standard Error	0.60		0.61	
Farming experience				
3-10	10	12	5	7
11-18	14	16	24	33
19-26	25	29	20	28
27-34	17	20	11	15
35-42	13	15	10	14
43-50	6	7	2	3
Mean	25		23	
Standard Error	1.19		1.14	
Secondary occupation				
Civil servant	10	12	13	18
Artisan	8	10	7	10
Trading	42	49	39	54
Fishing	14	16	12	17
Others	11	13	1	1
Farm size				
1.0-1.9	0	0	13	18
2.0-2.9	12	14	7	10
3.0-3.9	28	33	39	54
4.0-4.9	29	34	12	17
5.0 and above	16	19	1	1
Mean	10.84		10.42	
Standard Error	0.53		0.58	
Total	**85**	**100**	**72**	**100**

4.2 Poverty Status of Beneficiaries and Non-Beneficiaries of SACCOS Credit

The study established poverty thresholds based on the 2/3 and 1/3 mean per capita annual farm income (MPCFI) for beneficiaries and non-beneficiaries of SACCOS Credit before and after obtaining credit. The year considered for before is 2009 and after is 2013. It was found that about 33% and 67% of the beneficiaries and about 8% and 18% of the non-beneficiaries fall under the non-poor category before and after obtaining credit, respectively. About 65% and 33% of the beneficiaries' and about 85% and 81% of the non-beneficiaries fall under moderate poor category before and after obtaining credit. Also approximately 2% and 0% of the beneficiaries and about 7% and 1% fall under the core pore category before and after obtaining credit. It indicates that there are higher percentages about 65% of moderate poor and about 67% of non-poor categories among beneficiaries before and after obtaining credit, respectively. Also, there are higher percentages about 85% and about 81% of the moderate poor category among non-beneficiaries before and after obtaining credit, respectively.

It was found that 67% and 33% of the beneficiaries and 92% and 82% of the non-beneficiaries were considered poor before and after obtaining credit respectively. It indicates that larger percentages about 92% and 82% of the non-beneficiaries were considered poor as compared to about 67% and 33% of the beneficiaries before and after obtaining credit respectively. The implication is that there is a reduction in poverty among the beneficiaries after obtaining credit; this could be due to beneficiaries' access to SACCOS Credit.

It was found that the poverty depth index for beneficiaries was 0.13 before and 0.06 after obtaining credit, while, that for non-beneficiaries' was 0.27 before and 0.17

after. It indicates that non-beneficiaries had greater poverty depth index than the beneficiaries which means that the degree of poverty among non-beneficiaries was more compared with the beneficiaries. The implication is that respondents among the beneficiaries need about 6% which translates into ₦11,604.58 while the non-beneficiaries need about 17% which translates into ₦ 32,879.65 annually in addition to their mean per capita annual farm income to attain the poverty line after obtaining credit.

Finally, it was found that the non-beneficiaries' had a poverty severity index of 0.10 and 00.4 while the beneficiaries had a poverty severity index of 0.12 and 0.02 before and after obtaining credit respectively. It indicates that the non-beneficiaries had higher percentage about 4% of the poorest after obtaining credit while the beneficiaries had higher percentage about 12% of the poorest before obtaining credit. Although, poverty is marginally severe among the respondents after obtaining credit but is more severe among the non-beneficiaries after obtaining credit. This implies that about 2% of the beneficiaries constitute the poorest among the respondents while about 4% of the non-beneficiaries constitute the poorest among the respondents after obtaining credit. This result is in consistent with the findings of Adebayo (2004) who reported that though the participating bee farmers had larger number of poor, the degree of poverty among the non-participating bee farmers was more when compared with participating bee farmers and poverty is marginally more severe among the non-participants.

Table 4.2**:** Poverty status of beneficiaries and non-beneficiaries of SACCOS credit

Poverty Category	**Beneficiaries**		**Non-Beneficiaries**	
	Before	**After**	**Before**	**After**
Non-Poor	28	57	6	13
	(32.94)	(67.06)	(8.33)	(18.06)
Moderate Poor	55	28	61	58
	(64.71)	(32.94)	(84.73)	(80.55)
Core Poor	2	0	5	1
	(2.35)	(0.00)	(6.94)	(1.39)
FGT Poverty Indices				
Poverty Incidence (Po)	0.67	0.33	0.92	0.82
Poverty Depth (P1)	0.13	0.06	0.27	0.17
Poverty Severity (P2)	0.12	0.02	0.10	0.04

POVERTY LINES:	BEFORE	AFTER
MPCFI	= ₦ 289,328.00 Per annum	= ₦290,114.60 Per annum
2/3*(MPCFI)	= ₦ 192,885.00 Per annum	= ₦193,409.70 Per annum
1/3*(MPCFI)	= ₦ 96,442.66 Per annum	= ₦ 96,704.86 Per annum

4.3 Double Difference Estimates of the Impact of Credit on Crop Output of Beneficiaries and Non-Beneficiaries of SACCOS Credit

The double differences estimates of the impact of credit on crop output of respondents are presented in Table 4.3. The mean output difference of the beneficiaries was 2187.65 kg and 2761.18 kg before and after obtaining credit. The difference between after and before values is 573.53kg, which is the first single difference. The mean output difference of the non- beneficiaries were 1943.33kg and 2220.83 kg before and after obtaining credit. The difference between before and after values is 277.50kg, which is the second single difference. The double difference, that is, the difference between the two output differences [573.53- 277.50] is 296.03kg. It indicates that the

double difference estimates of the crop output of beneficiaries and non-beneficiaries of SACCOS Credit had a positive value. The implication is that credit had positive impact on the crop output of beneficiaries. A positive mean double difference in output value indicates positive impact of credit on beneficiaries output (Nkonya *et al*., 2008).

Table 4.3: Double difference estimates of the impact of credit on crop output of beneficiaries and non-beneficiaries of SACCOS credit

Group	Crop Output		Difference between Periods
	Before(Kg)	After(Kg)	
Beneficiaries	2187.65	2761.18	573.53
Non-Beneficiaries	1943.33	2220.83	277.50
Difference Between Groups	244.32	540.35	296.03

4.3.1 Impact of credit on crop output of beneficiaries and non-beneficiaries of SACCOS Credit

The estimates of double difference from regression analysis of the impact of credit on crop output of respondents are presented in Table 4.3.1. It was found that the interaction term (T_i*P_t) had a positive coefficient of 296.029 and statistically significant at 5% level of significance. It indicates that of the six (6) variables included in the regression model, educational level, household size and income were statistically significant with crop output at 1% level of significance.

It indicates that the coefficient of the interaction term (*Ti***Pt*) between the crop output of beneficiaries and non- beneficiaries of SACCOS Credit had positive value and statistically significant at 5% level of significance. It means that credit had a positive and significant influence on the crop output of the respondents. The implication is that the crop output of the farmer's beneficiaries is significantly difference from the crop

output of the non-beneficiaries in the study area. This result is consistent with the findings of Ezeh (2004) and Nkonya *et al.,* (2008) who reported that Fadama project beneficiaries were better off than their non-beneficiary counter-part in terms of income and productivity.

The coefficient of educational level was found to be positive and significantly related with the respondent's crop output. This implies that increased level of education will lead to increase in crop output of the respondent. Education produces labour force that is more skilled and adaptable to the need of changing economy. It helps to unlock the natural talents and inherent enterprising qualities of the farmers. It enhances the farmer's ability to understand and evaluate new production techniques. This translates into higher crop output and productivity (Tasie, 2012).

The coefficient of household size was found to be positive and significantly related with the respondent's crop output. Implying that the more the number in the farmer's household the more the crop output. The implication is that the relatively large household size may likely enhance the family labour supply on the farms, hence supporting favourably, productive capacities of the farmers to increase their crop output. This finding is in tandem with the earlier findings of Amos (2007) who noted that farm household size was a significant determinant of cocoa productivity in the study area.

The coefficient of household income size was found to be positive and significantly related with the respondent's crop output. This means that farmer's income is positively related with level of respondents crop output. This implies that any increase in farm income will lead to an increase in crop output of respondents. The result is in agreement with the findings of Nwaobiala *et al.,* (2009) where they found a positive

relationship between income and output of Agip-Green River Project crop farmers in Rivers State, Nigeria.

Table 4.3.1**:** Result of double difference estimates from regression analysis of the impact of credit on crop output of beneficiaries and non-beneficiaries of SACCOS credit

Variable	**Coefficients**	**Standard Error**	**T-Value**
Constant	2207.546***	558.235	3.955
T_i	282.603	775.173	0.365
P_t	277.500	171.485	1.618
(T_i*P_t)	296.029**	133.059	2.225
Age	-21.041	16.913	-1.244
Educational Level	255.227***	99.225	2.572
Household Size	91.325***	19.169	4.764
Farming Experience	-3.604	9.293	-0.388
Secondary Occupation	-13.002	11.590	-1.122
Income Size	0.00065***	0.00016	4.07471
R^2	0.599		
Adjusted R^{-2}	0.573		
F-value	37.534***		

*** Significant at 1%, ** Significant at 5% and * Significant at 10%.

4.4 Double Difference Estimates of the Impact of Credit on Poverty Status of Beneficiaries and Non-Beneficiaries of SACCOS Credit

The double differences estimates of the impact of credit on poverty status of respondents are presented in Table 4.4. The per capita annual farm income was used as proxy for poverty status. It was found that the per capita annual farm income difference of the beneficiaries was ₦21248.41 and ₦26300.32 before and after obtaining credit. The difference between after and before obtaining credit values is

₦5051.91, which is the first single difference. The per capita annual farm income difference of the non- beneficiaries were ₦20131.42 and ₦23128.56 before and after obtaining credit. The difference between after and before values is ₦2997.13, which is the second single difference. The double difference, that is, the difference between the two mean per capita annual farm income differences [5051.91-2997.13] is ₦2054.77. It indicates that the double difference estimates of the per capita annual farm income of beneficiaries and non-beneficiaries of SACCOS Credit had a positive value. A positive mean double difference in per capita annual farm income value indicates increase in beneficiaries' per capita annual farm income (Nkonya *et al*., 2008). The implication is that credit had positive impact on the per capita annual farm income of beneficiaries.

Table 4.4: Double difference estimates of the impact of credit on poverty status of beneficiaries and non-beneficiaries of SACCOS credit

Group	**Per Capita Annual Farm Income**		
	Before (₦)	**After(₦)**	**Difference between Periods**
Beneficiaries	21248.41	26300.32	5051.91
Non-Beneficiaries	20131.42	23128.56	2997.13
Difference between Groups	1116.99	3171.76	2054.77

4.4.1 Impact of credit on poverty status of beneficiaries and non-beneficiaries of SACCOS Credit.

The estimates of double difference from regression analysis of the impact of credit on poverty status of respondents are presented in Table 4.4.1. The per capita annual farm income was used as proxy for poverty status. It was found that the interaction term (T_i*P_t) had a positive coefficient of 2054.77 and statistically significant at 1% level of

significance. It indicates that of the five (5) variables included in the regression model, age, household size and farming experience are positively related and statistically significant with output at 1% and 10% level of significance. It was found that the coefficient of the interaction term (*Ti*Pt*) between the per capita annual farm income of both beneficiaries and non- beneficiaries had positive value and is statistically significant. This implies that credit had positive and significant influence on the per capita annual farm income of the respondents. The implication is that the per capita annual farm income of the beneficiaries is significantly different from the per capita farm income of the non-beneficiaries in the study area. This result is consistent with the findings of Ezeh (2004) and Nkonya *et al.*, (2008) who reported that Fadama project beneficiaries were better off than their non-beneficiary counter-part in terms of income and productivity.

The coefficient of age was found to be positive and significantly related with the per capita annual farm income of the respondents. This implies that as age increases the farmers' level of farm income increases, probably because accumulated knowledge and experience of farming systems a farmer acquired pays off over a long period of time (Bonabana-Wabbi, 2002).

The coefficient of household size was found to be positive and significantly related with the respondent's per capita annual farm income. This means that larger household size also augments the total labour supply of the farm household and thereby enhances its farm income generating potentials. The implication is that majority of the household contributes to farm income by supplementing its labour supply especially during peak period of labour requirement such as harvest and weeding period (Tasie, 2012).

The coefficient of farming experience was found to be positive and significantly related with the per capita annual farm income of the respondents. This implies that farming experience is an important determinant of the respondent's level of farm income. Farming involve a lot of risks and uncertainties, therefore to be competent enough to handle all the vagaries of agriculture farmers must have stayed in farming business for quite some time (Ogundele and Okoruwa, 2006).

Table 4.4.1: Result of double difference estimates from regression analysis of the impact of credit on poverty status of beneficiaries and non-beneficiaries of SACCOS Credit

Variable	**Coefficients**	**Standard Error**	**T-Value**
Constant	53781.27***	5800.988	9.271
T_i	4759.967***	1904.72	2.499
P_t	2997.133	1921.564	1.560
T_i*P_t	2054.772***	611.531	3.360
Age	447.388***	141.816	3.155
Educational Level	-230.585	919.667	-0.251
Household Size	1933.67***	166.373	11.623
Farming Experience	135.164*	75.619	1.787
Secondary Occupation	-48.057	570.429	-0.084
R^2	0.521		
Adjusted R^{-2}	0.507		
F-Value	36.771***		

*** Significant at 1%, ** Significant at 5% and * Significant at 10%

4.5 Hypothesis Testing for Difference in Crop Output of Beneficiaries and Non- Beneficiaries of SACCOS Credit.

The result of the hypothesis testing of crop output of beneficiaries and non-beneficiaries is presented in Table 4.5**.** The value of crop output of beneficiaries and non- beneficiaries of SACCOS Credit before and after obtaining credit was tested. It was found that the mean crop output of beneficiaries and non-beneficiaries was 2761.16 and 2220.83. The t-calculated is 2.00 and t-critical is 1.98 and statistically significant at 5% level of significance. It indicates that the t-calculated is higher than the t-critical and statistically significant. Based on this the null hypothesis which states that there is no significant difference in crop output of beneficiaries and non-beneficiaries of SACCOS Credit is rejected.

Table 4.5: Hypothesis testing for differences in the crop output of beneficiaries and non- beneficiaries of SACCOS Credit

Variable	Beneficiaries	Non-Beneficiaries
Mean	2761.180	2220.826
Variance	1896451	725616.2
N	85	72
Hypothesized Mean Difference	0	
Df	145	
T-Stat	2.00**	
P(T<=T) One-Tail	0.0629	
T Critical One-Tail	1.655	
P(T<=T) Two-Tail	0.0175	
T Critical Two-Tail	1.976	

** Significant at 5%

4.5.1 Hypothesis testing for difference in per capita annual farm income of beneficiaries and non-beneficiaries of SACCOS Credit.

The result of the hypothesis testing of per capita annual farm income of beneficiaries and non- beneficiaries is presented in Table 4.5.1**.** The value of per capita annual farm income of the beneficiaries and non-beneficiaries of SACCOS Credit before and after obtaining credit was tested. It was found that the per capita annual farm income of

beneficiaries and non- beneficiaries was 317750.46 and 244506.94. The t-calculated is 2.33 and t-critical is 1.98 and statistically significant at 5% level of significance. It indicates that the t-calculated is higher than the t-critical and statically significant. Based on this, the null hypothesis which states that there is no significant difference in the per capita annual farm income of beneficiaries and non- beneficiaries of SACCOS Credit is rejected.

Table 4.5.1: Hypothesis testing for differences in per capita annual farm income of beneficiaries and non-beneficiaries of SACCOS Credit

Variable	Beneficiaries	Non-beneficiaries
Mean	317750.46	244506.94
Variance	1470000000	1280000000
Observations	85	72
Hypothesized Mean Difference	0	
Df	145	
T-Stat	2.33**	
P(T<=T) One-Tail	0.093	
T Critical One-Tail	1.655	
P(T<=T) Two-Tail	0.0187	
T Critical Two-Tail	1.976	

** Significant at 5%

4.6 Factors that Influence the Level of Participation in Savings and Credit Cooperative Societies

Factors that influence the level of participation of members in savings and credit cooperative societies are presented in Table 4.6. Amount of contribution by members was used as proxy for the level of participation of members in SACCOS. It was found that the F-value is 32.749 and statistically significant at 1% level of significance with the adjusted R^{-2} value of 0.647. The F-ratio was statistically significant implying that the joint effects of most of the included variables influence the level of participation of members in SACCOS and the Adjusted R^{-2} indicates that the independent variables explained 64.7% of the variations in the dependent variable.

The result revealed that of the eight (8) variables included in the regression model sex, secondary occupation, household size, educational level, farm income, non-farm income, interest rate charged had positive coefficient. Household size, farm income, non-farm income, interest rate charged and educational level are statistically significant at 1% and 10% levels of significance respectively. Only age had a negative coefficient and statistically not significant.

The coefficient of household sizes was found to be positive and significantly influences the willingness of participation of members in SACCOS. This conforms to a priori expectation and confirmed by studies such as NBS (2007). It indicates that household sizes had an influence on the level of participation of members in SACCOS. This is because a large household size means more responsibility to the household head and thereby makes household head depend on SACCOS as source of credit.

The coefficient of educational level was found to be positive and statistically significant. This implies that educational attainment influence the level of participation of members in savings and credit cooperative societies. This conforms to a priori expectation. Education creates awareness about opportunities existing in SACCOS. This result agrees with the findings of Elsie (2006); and Sivaram (2000) that level of education play a significant role in the participation of members in SACCOS.

The coefficient of farm income was found to be positive and significantly influences the level of participation of members in SACCOS. This result conforms to a priori expectation. Thus, farmers with high income are more likely to participate in SACCOs compared with those with low income. It implies that propensity to save

increase with farm income. This confirms the theory that households allocate less of income to consumption and more to saving as income rise.

The coefficient of non-farm income was found to be positive and significantly influences farmers' willingness to participate in SACCOS. This conforms to a priori expectation. That is, farmers who engaged in non-farming activities were more likely to participate in SACCOS than those who did not engage in any non-farm activities. A possible reason is that farmers who engaged in non-farm activities diversify their income sources and have access to more capital for use in farming. Hence these farmers may have greater propensity to save (participate)

The interest rate charged on credit was found to be positive and statistically significant. This does not conform to a prior expectation. It implies that interest rate charged on credit positively influences farmer's willingness to participate in savings and credit cooperative societies. This may be attributed to the fact that the interest rate charged by cooperative societies (15%) is much lower than the going commercial rates of between 25% and 30%. This result agrees with the findings of Adaigho and Izeke (2009) that farmers would like to save even when there is increase in interest rate.

The coefficient of age was found to be negative and statistically non- significant. This result conforms to a priori expectation. It implies that age negatively influenced farmers' willingness to participate in saving and credit cooperative societies. It means that as they get older; their level of participation in savings and credit cooperative societies decreases. The mean age of beneficiaries and non-beneficiaries in the study areas was found to be 41 and 38 years respectively. The implication is that as they get older; the less their diversification in off-farm income activities, the less their income,

propensity to participate in SACCOS and the less their credit. This outcome agrees with the theory of Keynes who opined that old age is associated with less saving and increase consumption. This finding is in consistent with the findings of the studies conducted by Idrisa (2007), Arayesh and Mammi (2010), who reported that educational level, farm and non-farm income, had positive relationship and significantly influence the level of participation in cooperative societies while age had a negative relationship with the level of participation in cooperative societies.

Table 4.6: Factors that Influence the level of participation in SACCOS

Variable	**Coefficients**	**Standard Error**	**T-Value**
Constant	3398.929*	1999.460	1.700
Age(X1)	-1828.970	2699.770	-0.677
Sex(X2)	426.465	623.683	0.684
Secondary Occupation(X3)	3099.834	4376.200	0.708
Household Size(X4)	0.042***	0.0103	4.078
Educational Level(X5)	0.028*	0.015	1.867
Farm Income(X6)	0.046***	0.014	3.286
Non-Farm Income(X7)	0.203***	0.076	2.671
Interest Rate Charged(X8)	0.956*	0.558	1.713
R-Square	0.667		
Adjusted R-Square	0.647		
F-Value	32.749***		

***Significant at 1%,**Significant at 5% and *Significant at 10%

4.7 Constraints Faced by Beneficiaries and Non-Beneficiaries of Savings and Credit Cooperative Societies

The constraints faced by beneficiaries and non-beneficiaries of savings and credit cooperative societies are presented in table 4.7. It was found that about 38% of the beneficiaries and approximately 28% of the non-beneficiaries ranked high cost of farm inputs as the major constraints. About 26% of the beneficiaries and 21% of the non-beneficiaries ranked inadequate capital as the second and third constraints, respectively. Also, about 22% of the beneficiaries and non-beneficiaries ranked poor access to loan as third and second constraints, respectively, while high interest rate charged on credit was ranked by 5% and 18% of the beneficiaries and non-beneficiaries as fifth and fourth constraints, respectively. Finally, illiterate level was ranked by 8% and 7% of the beneficiaries and non-beneficiaries as fourth and fifth. Government interference (government policy) was ranked by 1% and 4% of the beneficiaries and non-beneficiaries as the sixth constraints. The result of the analysis revealed that the non-beneficiaries mentioned poor access to credit, illiterate level and high interest rate charged as constraints they faced as members more than the beneficiaries. This finding agrees with that of Hyun *et al.*, (2008) and Tekana *et al.*, (2011) who observed that high cost of farm inputs, inadequate capital, poor access to loan, high interest rate charged, illiteracy level and government interference were among the constraints faced by members of cooperative societies.

Table 4.7: Constraints faced by beneficiaries and non-beneficiaries of savings and credit cooperative societies

Constraints	**Beneficiaries**			**Non-beneficiaries**		
	Frequency	Percentage	Rank	Frequency	Percentage	Rank
High Cost of Farm Inputs	80	38	1st	69	28	1st
Poor Access to Credit	45	22	3rd	54	22	2nd
Illiterate Level	16	8	4th	16	7	5th
Inadequate Capital	54	26	2nd	51	21	3rd
Government Interference	2	1	6th	11	4	6th
High Interest Rate Charged	11	5	5th	45	18	4th
Total	208*	100		246*	100	

Multiple Response Allowed*

CHAPTER FIVE

SUMMARY, CONCLUSION, CONTRIBUTION TO KNOWLEDGE AND RECOMMENDATIONS

5.1 Summary

This study was designed to analyze impact of savings and credit cooperative societies in combating poverty among crop farmers in three local government areas of Niger state, Nigeria. The three local government areas were purposively selected while the respondents were randomly selected with the aid of lottery method from the list of cooperators provided by the Desk Officer from Niger State Fadama Coordination Office making a total of one hundred and fifty seven respondents. The data for analysis was based on 2009 for before and 2013 for after experience of the respondents and were collected through the use of a structured questionnaires and were analyzed using descriptive statistics such as frequency distribution, percentage, standard error and mean, Foster –Greer- Thorbecke model was used to determine poverty status of respondents, double difference method was used to analyze the impact of credit on crop output and impact of credit on poverty status, paired t-test to test the two hypotheses and multiple regression model was also used to determine the factors that influence the level of participation of members in SACCOS.

The socio-economic characteristics of the respondents revealed that the mean ages of beneficiaries and non-beneficiaries of SACCOS Credit were 41 and 38 years respectively. Majority (76%) and approximately (84%) of beneficiaries and non-beneficiaries of SACCOS Credit did have formal education especially primary and secondary education and were engaged in other economic activities such as civil servants, trading, artisans, fishing with majority (49% and 54%) of beneficiaries and

non-beneficiaries of SACCOS Credit engaging in trading, while, majority (81%) and approximately (99%) of beneficiaries and non-beneficiaries of SACCOS Credit fall within small-medium holder farmer.

It was found that there are higher percentages (67%) of non-poor among the beneficiaries after obtaining credit while, higher percentages (85%) and approximately (81%) of moderate poor among non-beneficiaries before and after obtaining credit. It was found that the non-beneficiaries had higher index of poverty incidence (0.92 and 0.82) while, the beneficiaries had the lowest index of poverty (0.67 and 0.33) both before and after obtaining credit. It was found that the non-beneficiaries had higher poverty depth index (0.27 and 0.17) while, the beneficiaries had the lowest index (0.13 and 0.06) both before and after obtaining credit. Finally, the poverty severity analysis showed that poverty is marginally severe among the respondents but is more severe among the non-beneficiaries by 4% after obtaining credit.

The results of double difference estimator revealed that credit had a positive impact on the beneficiaries crop output and mean per capita annual farm income based on the positive mean value of 290.03kg and ₦2054.77, respectively. The result of the double difference estimate from regression analysis of the impact of credit on the crop output and per capita annual farm income of beneficiaries and non-beneficiaries revealed that the crop output and per capita annual farm income of beneficiaries are significantly difference from that of the non- beneficiaries at 1% and 5% level of significance, respectively.

It was found that the calculated value of t is greater than the critical value of t at 5% level of significance. Based on this the null hypotheses is rejected.

It was found that household size, farm income; non-farm income, educational level and interest rate charged on credit were the significant factors that influence the level of participation of members in SACCOS at 1% and 10% levels of significance, respectively.

High cost of farm inputs was ranked as the foremost constraints faced by members of SACCOS. The result of the analysis revealed that the non-beneficiaries mentioned poor access to credit, illiterate level and high interest rate charged as constraints they faced as members more than the beneficiaries.

5.2 Conclusion

Savings and Credit Cooperative Societies have been able to achieve some of its stated objectives. It has helped to improve crop output and per capita annual farm income of beneficiaries of SACCOS Credit. However, the non-beneficiaries mentioned poor access to credit, illiterate level and high interest rate charged as constraints they faced as members more than the beneficiaries. There is therefore, more room for improvement in crop output and per capita annual farm income of the farmers.

5.3 Contribution to Knowledge

1. The higher severity index of 0.04 existed among the respondents that are non-beneficiaries compared with the beneficiaries with the severity index of 0.02 after obtaining credit. Poverty is marginally more severe among the non-beneficiaries by 4%.These suggests that if the programme continues, the farmers stand a chance of moving out of poverty.

2. The double difference estimates of the crop output and per capita annual farm income of beneficiaries and non-beneficiaries of saving and credit cooperative

society's credit had a positive double mean difference value of 296.03kg and ₦2054.77 and statistically significant at 5% and 1% levels of significance, respectively. It indicates that credit had positive impact on beneficiaries crop output and per capita annual farm income. This means that credit is an effective tool for combating poverty.

3. The factors that influence the level of participation of members in saving and credit cooperative societies in the study areas were: household size significant at 1%, educational level at 10%, farm income at 1%, non-farm income at 1% and interest rate charged significant at 10%.

5.4 Recommendations

Based on the findings, the following recommendations are made:

1 Since the savings and credit cooperative societies' credit had positive impact on the crop output and mean per capita annual farm income of beneficiaries on their small-medium holder farm. It is recommended that savings and credit cooperative societies should source more loans and make it available to members, so that farmers could expand production and embark on large scale crop farming and also mechanized farming; this would further improve their living standard and help combat poverty.

2 Majority of the respondents complained of high cost of farm input such as fertilizers and agrochemical as one of the foremost constraints faced. The Savings and credit cooperative societies could link –up the farmers with sources of quality input for bulk purchase. This will enable the groups to buy inputs at factory cost thereby helping to reduce cost of production.

3 From the result of multiple regression analysis farm and non-farm income significantly influence the level of participation in savings and credit cooperative societies. Efforts should be made by non-governmental Organisation and local government council in the areas to boost the income diversification practices of farmers through provision of infrastructure especially feeder roads. This could enhance the level of farm and non-farm activities that could generate more income for the household and thereby help to combat poverty among the respondents.

4 Most of the respondents among the non-beneficiaries mentioned inadequate capital and poor access to credit as some of the constraints in participating in savings and credit cooperative societies. Since savings and credit cooperative societies cannot provide the entire needed fund for the respondents, farmers should be encouraged to diversify their livelihood activities by engaging in non-farming activities in order to augment farm family income and thereby alleviate poverty among the respondents.

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APPENDICES

Appendix 1: M.Sc Research Questionnaire

IMPACT OF SAVINGS AND CREDIT COOPERATIVE SOCIETIES IN COMBATING POVERTY AMONG CROP FARMERS IN THREE LOCAL GOVERNMENT AREAS OF NIGER STATE, NIGERIA.

Dear Respondent,

This questionnaire was designed by M.Sc. student of the Department of Agricultural Economics and Rural sociology, Ahmadu Bello University, Zaria. Please, fill as appropriate. All information will be treated with confidentiality and strictly for the purpose of research. Thanks for your co-operation.

L.G.A …….

Cooperative society…….

A. SOCIO –ECONOMICS CHARATERISTICS OF THE RESPONDENTS.

1. Sex: Male [ ] Female [ ]
2. Age (years)……
3. Marital status:Married [ ] Single [ ]
4. Highest level of Education:

   (a) No Formal Education [ ] (b) Primary school Education [ ]

   (c) Secondary School Education [ ] (d) Tertiary Education [ ].
5. Household Size (All the number of the people depending on you for living)……
6. How long have you been in farming? (Years of experience)……
7. Secondary occupation: (a) Civil servant [ ] (b) Artisan [ ] (c) Trading [ ]

   (d) Fishing [ ] (e) others (specify)……

8. What is your household's income size per annum (including working members)……?

9. What is the total household's farm income you realized from farming 2013…….....?

10. What is the total household's non-farm income you realized from 2013……?

11. Kindly indicate the ownership type of the land you cultivate?

(a) Borrowed [ ] (b) Purchased [ ] (c) Gift [ ] (d) Rented [ ] (e) Inherited [ ]

(e) Others (specify).....

(B) INFORMATION ON SAVINGS AND CREDIT COOPERATIVE SOCIETIES

12. How long have you been in this cooperative society in years……

13. What was the last annual savings for the cooperative society before obtaining credit in (naira)……?

14 How much credits do you obtained last 2 years from your cooperatives…….?

15. How much interest (total interest) did you paid when you obtained the credit……..?

16. Do you save? (a) Yes [ ] (b) no [ ]

17. If yes, how do you save? (a) At Home [ ] (b) Friends /Relatives [ ] (c) Others (Specify)……..

18. If yes, how Much do you Save per month in naira ……?

19. If yes, what Amount do you keep for saving in the Following Way in naira?

(a)Cash at Home……. (b)Cash in the Bank……

(c) Cash with Friend/Relative……. (d) Others……

20. If yes, what amount are you able to save from your farm income before obtaining credit……

21 If yes, what amount are you able to save from your non- farm income before obtaining credit ……

22. If no, why……

23. What are the opportunities in your membership of cooperative society (ies)?

……

……

24. How much is the monthly contributions as a member in (naira)……?

25 How long do you contribute every year since you join the cooperative society in (month).....?

26. How much have you contributed since you join the cooperative society in (Naira) …….?

27. What is your share in the cooperative society in (naira)……..?

28. What are the schedules of activities for this cooperative society? List them:

……

……

29. To what extent has this cooperative societies impacted on your household?

(a) Very high [ ] (b) High [ ] (c) Average [ ] (d) Low [ ] (e) Very low [ ]

(C) INFORMATION OF FARMERS PERCEPTION OF POVERTY

30. What is your perception of poverty?

……

31. Who is considering being poor in your community?

(a) A person with no money [ ] (b) A person who cannot send children to school [ ] (c) A person who cannot build a house [ ] (d) A person who cannot buy Agrochemical [ ] (e) A person who cannot hire labour [ ]

(f) Others (Specify)…….

32. What can we see to say that a person is poor in your community?

(a) A person who borrow and pays back [ ] (b) A person who borrow and does not pay back [ ] (c) A person who leases land [ ] (d) A person who is landless [ ] (e) A person who is farming on borrowed land [ ]

33. Can you say that your cooperative societies have alleviated poverty in your life and that of your household? (a) Yes, a lot [ ] (b) Not really [ ] (c) No [ ] (d) I don't know [ ]

34. Do you foresee a future in the cooperative societies as a key to alleviating poverty in your LGAs? (a) Yes, a lot [ ] (b) Not really [ ] (c) No [ ]

(d) I don't know [ ]

35. What is your coping strategy for alleviating poverty?

(a) Donation from friends [ ] (b) sales of assets [ ] (c) labour exchange for food [ ] (d) Eating less preferred food [ ]

(e) Others (specify)…….

36. What can you suggests on how people can reduce poverty?

……..

(D) INFORMATION ON DONOR AGENCIES

37. Which donor agency has granted credit to your cooperative society? List Them:

……

38. What year……?

39. Did you benefit from the credit? Yes [ ] No [ ]

40. If yes, how much in (naira)……and interest paid in (naira)……

41. Are there other benefits you and your neighborhood derive from this agencies? If yes, specify……

42. If no, why? List them:

……

43. What are your other sources of credit?

(a) Commercial bank [ ], amount (naira)……and interest paid in (naira)……..

(b)Bank of agriculture [ ] amount (naira)……and interest paid in (naira)……..

(c) Relative/Friends [ ], amount (naira)……and interest paid in (naira)…….

(d) Money Lender [ ], amount (naira)……and interest paid in (naira)……...

(e) Pawn Broker [ ], amount (naira)……...and interest paid in (naira)…… Others specify)……

(E) INFORMATION ON CROP PRODUCTION

44. How often were you able to sale your crops?

(a)Yes, a lot [ ] (b) not really [ ] (c) no [ ] (d) I don't know [ ]

45. What did you make out of it in naira……..?

46. What was/is the level of crop output from your farm?

Please, fill the table as appropriate below

Crops	Farm Size	Output (2009) in Kg	Output (2013) in Kg
i) ii) iii) iv) v) vi)			
Total			

47. What were you able to buy from the sale?

(a) Send children to school [ ] (b) build a house [ ] (c) buy agrochemical [ ]

(d) Hire more labour [ ] (e) others (specify)…….

(F) INFORMATION ON PER CAPITAL HOUSEHOLD EXPENDITURE

48. What are your Household Food and Non-Food Consumption Expenditure?

(a) FOOD EXPENDITURE

Kindly provide information on the following crops: those you have purchased or produced).

Crops	Amount (2009) in Naira	Amount (2013) in Naira
Maize Grain/flour		
Millet Grain/flour		
Rice local/imported		
Cowpea		
Others (specify) i)		
ii)		
iii)		

(b) NON- FOOD EXPENDITURE

Item	Amount (2009) in Naira	Amount (2013) in Naira
Charcoal, Fuel Wood		
Kerosene		
Shoes(Leather, Plastic, Slippers)		
Clothing(Fabric And Cloth)		
Purchase of vehicles/motor cycles/bicycles		
Repairs Of Vehicles/motor cycles/Bicycles		
Home Repairs(Painting, Roofs, Plastering)		
Kitchen Utensils(Pots, Cups, Plates, Etc		
Furniture(Beds, Tables, Chairs, Etc)		
Petrol For Vehicles		
Detergents/pomades		
Others: specify i, ii		

(c) Durable Items

	Item	Amount (2009) in Naira	Amount (2013) in Naira
(i)	Radio/Television/Fan		
(ii)	Kerosene Stove/Wood/Charcoal stove		
(iii)	Generator For Home Use		
(iv)	Extra Land		
(v)	Other including Electrical Appliances i)		
(vi)	ii)		
(vii)	iii)		

(G) INFORMATION ON FARMERS ACTIVITIES

49. What was/is the level of your annual income from farm activities?

Farm Activities	Amount (2009) in Naira	Amount (2013) in Naira
i) ii) iii) iv) v) vi)		
Total		

50. What was/is the level of your annual income from non-farm activities?

Non-Farm Activities	Amount (2009) in Naira	Amount (2012) in Naira
i) ii) iii) iv) v) vi)		
Total		

(H) INFORMATION ON CONSTRAINTS FACED BY MEMBERS OF SAVINGS AND CREDIT COOPERATIVE SOCIETIES

51. What are the Constraints Faced by Member of Savings and Credit Cooperative Societies?

S/no	Constraints
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

52. Suggest possible solution to the constraints you encountered as a member

……

……

……

……

……

Thanks for your co-operation.

Appendix 11: Indices for Conversion into Kg-Grain Equivalents

Crops	Index
Rice(rough)	0.80
Rice(clean)	1.19
Maize	0.75
Millet	0.68
Sorghum	0.60
Groundnut(shelled)	1.83
Groundnut(unshelled)	1.30
Soybean	1.30
All pulses	1.12

Source: Clark and Hasswell (1970)