SAVING AND INVESTMENT BEHAVIOUR OF SMALL-SCALE FARMERS IN KAURU AND LERE LOCAL GOVERNMENT AREAS OF KADUNA STATE, NIGERIA

BY

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DECLARATION

I hereby declare that this dissertation titled "**Savings and Investment Behaviour of Small-Scale Farmers in Kauru and Lere Local Government Areas of Kaduna State."** 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 in this or any other institution. All borrowed information have been duly acknowledged in the text and list of references provided.

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CERTIFICATION

This dissertation titled '**Savings and Investment Behavior of Small-Scale Farmers in Kauru and Lere Local Government Areas of Kaduna State,** by Emmanuel Babani meets the regulations governing the award of the Degree of Master of Science in Agricultural Economics of the Ahmadu Bello University, Zaria and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This dissertation is dedicated to God Almighty who made it possible.

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Abstract

The study analyzed savings and investment behaviour of small-scale farmers in Kauru and Lere local government areas of Kaduna State. The specific objectives of the study were to describe the socio-economic characteristics of the respondents; determine the socio-economic factors that influence savings and investment in the study area; estimate the savings and investment behaviour of small-scale farmers in study area; evaluate the level of savings and investment made by the small-scale farmer in both farm and off-farm activities in the study area; and describe the constraints associated with savings and investment in the study area. The two local government areas were purposively selected while the respondents were randomly selected. Information was obtained from a total of 168 farmers. The data for analysis were collected through the use of structured questionnaires and were analyzed using descriptive statistics and multiple regression model. Results of data analysis revealed that the mean age of the farmer was 42 years. The average savings from farm and off-farm activities were ₦ 693,560.5 and ₦ 1,064000, while, average investments from farm and off-farm income were ₦ 258,054.1 and ₦ 369,352.4. The results of the regression analysis revealed that age, household size, education, farm and off-farm income were responsible for 55% variation observed in the level of savings, while household size, farm size, farm income, off-farm income and loan obtained were responsible for 55% variations observed in the level of investment. Many (26% and 25%) of the farmers ranked low income and inadequate capital as the foremost constraints associated with savings and investment in the study area. It was therefore, recommended that small scale farmers should be encouraged to form cooperative societies to enable them access credit from banks as this will encourage the accumulation of social capital in form of savings and 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.

CHAPTER ONE

INTODUCTION

1.1 Background to the Study

Saving is of great importance in a developing economy like Nigeria. This is because of the direct bearing it has on the level of economic activity of the nation. Similarly, within the agricultural sector, the degree of progress attained will largely depend upon what the farmers do with the additional incomes generated year to year from their farming activities .This stems from the fact that the growth rate in the farming economy largely depends on the stock of capital built up in a farm organization and the ploughing back of such stocks in form of investment for further improvement of farm organization. If these increments are spent on house hold expenditure, without building up the necessary infrastructure, the future economic development of the nation will be hampered. Adequate integration of savings and investment programmes into development strategies is capable of improving resource allocation, promoting equitable distribution of income, and reducing credit delivery and recovery costs (Adeyemo and Bamire, 2005).

Agriculture in Nigeria is practiced at a subsistence level and is characterized by numerous farmers operating several scattered small-scale and fragmented plots of lands, using traditional methods such as land rotation, bush burning and crude implements (Odoemenem *et al*., 2013).

According to Olawepo (2010), majority of the rural populace in Nigeria either depend entirely on farming and farming activities for survival and generation of income, or depend on other non–farming activities to supplement their main sources of income. Olawepo (2010) posited that, over 90% of the country's of the local food production

comes from the small-scale farmers, about 60% of the population earn living from these small-scale farms which usually of the size of about 0.10-5.99 hectares (Olawepo, 2010). It could then be seen that most farmers have limited resources, a factor that limits their production, investment, savings and income. Agriculture plays an important role in employment and revenues generation as well as in the provision of raw materials for industrial development. However, the nation's agricultural potential are far from being fully realized and this has serious implications for food security, and sustainable economic development, the underdevelopment of the agriculture is indeed worrisome, given the fact that the country is naturally agriculturally well endowed.

Nigeria agriculture suffers greatly from low capitalization, it is dominated by millions of small-scale farmer who are predominantly subsistence in nature, and they produce primarily for consumption Ogungbile and Olukosi (1991). Crop sale is usually to generate income to meet other family expenses or purchase other goods that they do not directly produce. Ogungbile and Olukosi (1991) held that, low capitalization of farm sector had also been observed to translate into low income which in turns translates into low savings; low savings translates into low investment which in turns translates into low income or return, thus, forming a vicious cycle of poverty. Small holders in developing countries face the same problem; the ability to accumulate sufficient capital for new and costly investment is rather limited. Thus, outside financial help is requiring inducing more capital investment in the agricultural sector (Barau, 1991).

1.2 Problem Statement

One of the basic problems confronting the development of agricultural sector in Nigeria could be attributed to inadequate savings and investment by the small-scale farmers. Agriculture in Nigeria like in most developing countries is predominated by small farm producers, and several constraints and barriers which appears insurmountable, limit the overall farming activities. Low saving capacity of farm families is one of the predominant factors responsible for stagnation of agricultural sector in Nigeria Despite this problem policy makers have not really drawn up an adequate and comprehensive rural savings scheme that will ginger the farmers to use their capital productively (Odoemenem *et a.l*, 2013).

Savings is indispensable to economic development by virtue of its relationship with investment (Igben and Akande, 1988). According to Odoemenem *et al*, (2013), economic theory indicates a one to one correspondence between savings and investment so that the size distribution of savings indicates investment potentials and possibilities. If investment remain localized in accordance to size of savings generated in a specific area, there are likely to be more investment in the areas of much savings than in those of meager savings. Savings according to Igben and Akande (1988), is preferred more in the financial form which makes funds readily available to investors and others needing money to expand their business operations. It has been shown that savers in developing countries, particularly in rural areas, prefer to save their money in terms of physical or tangible assets, such as land, building and livestock. This practice leads to scarcity of monetary savings for investment purposes. Savings as a determinant of economic growth and economic development was emphasized by classical economists.

However, there has been no consensus on factors which naturally affect the proportion of income that is saved. Several variables have been indicated as influencing saving and these include current income, permanent income, wealth, interest rates, the price level, demographic characteristics and a host of other variables (Odoemenem et al., 2013).

This study therefore is designed to provide answers to the following research questions:

i. What are the socio-economic characteristics of the farmers in the study area?

ii. What are the socio-economic factors that influence savings and investment in the study area?

iii. What are the levels of savings and investment in both in farm and off-farm activities in the study area?

iv. What are the constraints associated with savings and investment in the study area?

1.3 Objectives of the Study

The broad objective of this study is to determine the saving and investment behaviour of small-scale farmers in Kauru and Lere Local Government Areas of Kaduna State. However, the specific objectives are to:

i. describe the socio-economic characteristics of the small-scale farmers,

ii. determine the socio-economic factors that influence savings and investment in the study area,

iii. Evaluate the level of savings made by the small-scale farmers and the level of investment in both farm and off-farm activities in the study area, and

iv. Identify and describe the constraints associated with savings and investment in the study area.

1.4 Justification of the Study

It has been contended that the level of capital investment in the agricultural production process is a clear index of the magnitude of its growth and development (Abalu *et al*., 1981). This reasoning is based on the fact that as agriculture becomes modernized, more off-farm technologies must be identified, procured and then injected into the production process. The fact is still remaining that, a large number of our populace who engage in agriculture are poor without necessary funds to invest in their agricultural ventures and other activities to increase their income.

According to Odeomenem *et al.* (2013), the bulk of capital injection by this category of farmers comes from owner's equity and informal credit sources. The attractiveness of agricultural investment must be major consideration, if it is going to compete with other industries or sectors for resources (Onucheyo, 1998). The importance of this study is underscored by the lack of empirical work on the savings and investment of farmers in the study area.

1.5 Hypotheses

The null hypotheses (Ho) tested are:

i. There is no significant relationship between savings and investments of small-scale farmers in Kauru and Lere local government Areas of Kaduna State.

ii. There is no significant relationship between the socio-economic characteristics of small-scale farmers and their savings and investments in Kauru and Lere Local Government Areas of Kaduna State.

CHAPTER TWO

LITERATURE REVIEW

2.1 Definition of Savings and Investments

Savings is in economics normally considered as disposable income minus personal consumption expenditure. It can also be regarded as income that is not consumed immediately by buying goods and services. Income in this concept includes all the earnings from all sources during a year (Nwibo, 2013).

According to Anyawu and Oaikhenan (1995), saving is defined as the amount of income per time period that is not consumed by economics units. For the household, it represents that part of disposable income not spent on domestic products or consumption of imported goods and services. For the firm, it represents undistributed business profits. According to Jhingan (2004), savings is termed as the difference between disposable income and consumption that is, S = Y – C, where S is savings, Y is income and C is consumption. Savings can be referred to as that portion of disposable income that is not devoted to current consumption.

Edun (1996), defined institutional savings as the quantum of long-term investable funds (money that is available for investment for a year or more) held by registered formal financial institutions. Put another way, institutional savings represent funds available for investment in the country's capital market by institutional investors. According to Anyawu *et al.*, (1995), defined investment as the net capital expenditure on consumer durables, residential constructions (buildings), plants and machinery. Investment from this perspective refers to the purchase of real tangible assets such as machines, factories, or stock of inventories which is used in the production of goods and services for future use as opposed to the present consumption. From a broader perspective however,

investment can be viewed as the sacrifice of certain present values of consumption for possibly uncertain future values of consumption. It is the commitment of money in order to earn financial return of purchase of financial assets such as stocks or bonds with future end date in mind.

According to Ajayi (1998), investment could be considered as an act of laying out money now in return for a future financial reward or the sacrifice of something now for the profit of later benefits. The reward in this context may be received in the form of an income flow or by the receipt of a single capital sum or combination of both. In the words of Dornbusch (1981), investment is spending devoted to increasing or maintaining the stock of capital. The stocks of capital consist of factories, machines, office and other durable production used in the process of production. According to Okpara (2010), he defined investment as both investment in machines and human capital in the form of quality education and training.

Jhingan (2004), from economics perspective, defined investment as production or acquisition of real capital assets during any period of time. Keynes (1936), investment refers to real investment which adds to capital and equipment. It leads to increase in the level of income and production by increasing the production and purchase of capital goods. Investments thus, includes new plants and equipment, construction of public works like dams, roads, buildings, net foreign investment, inventories, stocks and shares of new companies. According to Anyanwu (1995) defines investment along the lines of gross private domestic investment or gross fixed capital formation. The national income accounts defines gross fix capital formation (GFCF) as consisting of all capital

expenditure on buildings (residential and non-residential), land improvement, transport equipment, breeding stock or machinery and equipment.

2.2 History of Savings and Investment by Small-Scale Farmers in Nigeria

It is obvious that research as at farm level in the developing countries have been quite substantial, but those done in the areas of saving and investment patterns of farm families in these countries are still scanty (Adesimi, 1983). However, a few studies in the area of savings have shown that rural communities in Nigeria have over the years evolved their own thriving savings schemes in the form of traditional Esusui clubs (Ogunyemi, 1967). It is further argued that these clubs "Adashi" (Hausa), "Ugele" (Idoma), "Esusu" (Igbo) and so on are the most prevalent indigenous methods of savings in Nigeria.

Mbat (1985) pointed out the apparent shortcomings of this method of savings. He noted that this cycle of savings does not give additional income to the participants but instead a capital loss due to depreciation in value of money contributed to the scheme. In addition members were usually charged extra amounts in order to keep the cycle going. It is used for entertainment purposes when members gather for meetings. However, Mbat (1985) argued that the scheme has the advantage of providing participants with lump sum of money at a time and in turn for use in effecting their planned expenditures (either for building a house or purchase of a piece of land for farming).

Studies in development literature have shown that small-scale farmers have high propensity to save and actually do a lot of savings. It is along this line that one tends to disagree with the assertion by Ater (1989) that most small-scale farmers are unable to

accumulate capital due to their low margins of savings and is thus caught up in a vicious cycle. Warinner (1964) pointed out that small-scale farmers in all regions where a money economy is established tend to save a very high portion of their income, even when the income is much smaller than that of a wage earner. This was aptly supported by Ater (1989) in a three year study of 239 rural families in Zambia. The result of his study indicated a surprisingly high savings capacity among farmers in the samples who on average save more than 30 percent of their income in a two year period. At the same time, a sample of rural villagers with wage occupation had average propensities to save which were identical to that of the sampled farmer.

Mbat (1985) cited that, in 1975, it was alleged that an estimated 50.4 percent was said to be held in the rural areas. Also Adams (1978) argued persuasively that substantial voluntary rural savings capacities existed in the so-called third world countries.

2.3 Importance of Savings and Investment for Development

The importance of savings and investments is derived from the fact that agricultural growth requires an increasing dose of investment fund. These funds translate into capital which in turn transforms various development variables to create the ultimate impact which is economic growth and development. Mobilization of savings should be an important source of fund for investment in the rural sector. The generality of the rural community have little or nothing to save since there is not enough for consumption. Production is consumption-oriented and it is only the little excess that is passed to the market to earn money to procure other necessities of life. The farming household is of utmost importance to Nigerian economy not only because of the income generated and the employment potentials of the sector, but also the limit set by the sector to the growth

of other sectors. Savings among farming households in developing economies like Nigeria is of crucial importance as the degree of progress a farmer will attain depends largely upon what the farmer does with additional income generated yearly from farm activities (Ayawale and Bamire, 2000). The growth rate in a farming economy largely depends on the stock of capital built by a farmer and reinvestment of such stock for further improvement of the farming household. Savings can, therefore, be vital in increasing the amount of capital available. Increasing savings is a necessary, but not a sufficient condition, for investment.

According to Bime (2008) savings goes beyond capital formation to being a catalyst for capital formation and a major determinant of the cost of credits based on the law of scarcity which holds that, 'when the former is low and scarce, it becomes more costly to obtain'. The role of saving in economic development is very important and it can be described as a driving force necessary for economic growth and development.

According to Surya Prakasa (2012) from the classical times, saving has been considered as one of the determinant of growth, to lead under developed countries to the path of development, rate of savings most be enhanced. For individuals and households, saving provide a cushion of security against future contingencies, whereas for the nation, savings provide funds needed in the development efforts to achieve higher rate of growth with relative price stability. Also in an era of international financial integration, for macroeconomics stability, higher domestic savings are essential. According to Modigliani (1963) life cycle hypothesis, the main reason for savings is to meet the expenses after retirement and to acquire wealth.

However, rural communities have been observed to have evolved their own thriving savings and credit systems in the form of "ESUSU" clubs, which are the most prevalent indigenous method of savings in Nigeria (Ogunyemi, 1967).

2.4 Relationship between Savings, Income and Investment

The concept of savings, income and investment are intertwined. The all complement each other, a household with high ability to save has the potential of earning more income if the savings are productively invested. Ceteris paribus, the household with high income-earnings capacity has the potential of making substantial savings. Adisimi (1983), stated that the larger the income, the greater the propensity to save.

Modigliani (1963) posited that, there exist a positive relationship between savings and income growth rates. According to the World Bank report of 1995, households in developing countries save an average of 13% of the gross domestic national product (GDP), while businesses save about 7% of GNP but invest more than 15% of the GNP. The report further concluded that household as a group financed all their investment from savings while businesses financed 45% of their investment through borrowed funds.

The concepts of investment and income are interwoven. Also, they both complement each other in Keynesian theory real investment adds to capital equipment and this lead to increase in the level of income and production. By increasing the production and purchase of capital goods, real investment may be induced. Induced investment is income or profit motivated. Factors like prices, wages and interest charges which affect profit influence induced investment. Similarly, demand also influences it. When income increases, consumption demand also increases. In the ultimate analysis, induced

investment is a function of income. It is income elastic. Increases or decreases with the rise or fall in income (Jhingan, 2004)

2.5 Types of Savings and Investment

Hakeem (1989) stated that in most rural areas of developing countries, savings appears in the form of monetized and non-monetized forms. This he attributed to the subsistence's nature of the economy in the rural areas of developing countries. One of the major attributes of a subsistent economy is that the activity undertaken in it are predominantly the production of goods and services used by the producers or bartered but not exchanged for money (Hakeem, 1989)

2.5.1 Monetized savings

Azhar (1995), held that in a monetized economy, farmers or households save when they can in cash form such as currency note deposited in the banks or more often hoarded.

2.5.2 Non-monetized savings

Ghosh (1986) stated that in a non-monetized economy, farmers save when they can in kind such as jewelry, land, livestock, or dowry rather than in cash.

2.5.3 Fixed investment

Fixed investment is the purchases by firms of newly produced capital goods such as production machinery, newly built structures and office equipment (Anyawu *et al*, 1995).

2.5.4 Inventory investment

Refers to changes in stock of firm's products raw materials firms keep in their warehouse. These are meant to act as a safety cushion or buffer between production and sales. Firms avoid running out of stock so as to avoid the risk of default in meeting customers order since this will expose them to risk of losing the customers to competitors if they do. Rising stocks denote increase in inventory investment. While a deflection of the same results in decreasing stock (Anyawu *et al*, 1995).

2.5.5 Replacement investment

Refers to investment made to replace worm out capital goods resulting from their used in the production process. Replacement investment is also known as disposable investment (Anyawu *et al*, 1995).

2.6 Trends of Investment in Nigerian Agriculture

Two broad categories of investment in agriculture can be identified. They are the local and foreign sources. The local sources include public and private investment, while the foreign sources include multilateral, bilateral private investment.

2.7 General Investment in the Agriculture

The table below shows the total capital expenditure of federal, state and local governments in Nigeria for domestic public investment from 2008 to 2012 (Anyawu *et al*, 1995).

Table 2.1: Real Domestic Public Investment (million ₦)

Years	Federal Government	State Government	Local Government	Total
2006	8071.2	1105.4	229.2	9405.8
2007	9235.8	1142.6	295.3	10673.7
2008	9812.6	2021.1	631.6	12465.3
2009	15053.0	1826.5	566.6	17446.1
2010	6998.6	4644.2	1608.7	13251.5

Source: CBN (2010) Statistical Bulletin, Vol. 11 No 2

2.8 Determinants of Personal Savings

Keynes (1936) Identified absolute disposable income as the determinant of savings. These are quantifiable and verifiable determinants of savings. These factors includes the level of income, the level of interest rate, availability of savings facility, inflation rate, expectations, government policy, sense of responsibility and political stability.

2.8.1 Level of income

Individuals with high levels of income tend to save more than those with lower income levels. Higher income levels make it possible for individuals to meet their consumption demands while leaving them with an equally high level of un-consumed income (savings). It is normal, therefore, to expect savings and income to grow together in tandem.

2.8.2 Levels of interest rate

Whereas interest impacts negatively on consumption expenditure, its influence on saving is positive. Interest rate represents a return on savings- being the reward for abstinence. Low rate of interest constitute a poor return on savings especially if such

savings are held in form of financial assets such as bank deposits. Consequently, savings tends to be low when interest rate is low such that it is not attractive enough to compensate savers for their decision to abstain from consumption in the current period.

2.8.3 Availability of savings facilities

People's propensity to save tends to rise when the availability of outlets which forms can be channeled. For example, the availability of saving outlets such as commercial banks can help ginger peoples enthusiasm to save. The importance of this factor can be better appreciated if we imagine an economy in which such facilities do not exist to channel savings to investors. Although, it is difficult to track this factor to people's saving decisions. It is never the less true that people tend to save more in the presence of such facilities than if they were non-existent. This is because their presence as an intermediary to channel funds from savers in surplus units of the economy to borrowers in the deficit unit of the economy help to overcome the problem associated with the barter type of trade in the exchange of funds between savers and investors.

2.8.4 Inflation rate

The prevailing rate of inflation largely influences people's saving decision because of its erosive effect on the value of savings especially if such savings are held in the conventional form of bank deposits. The reasoning is that high rates of inflation erodes the purchasing power of money thereby discouraging people from saving since value of such savings will be wiped out by the deleterious effect of inflation.

2.8.5 Expectations

Expectations about the future values of such variables as inflation, interest rate, income et cetera all play a role in determining the level of savings in the current period. For example, expected higher levels of income in the future will tend to stunt the savings rate in the current period, since such expectations reduce pressure on individual's to "set something aside for the rainy day".

Expectations about the future course of interest also tend to influence current saving behaviour. Expectation of an interest rate higher than the prevailing rate of interest will tend to encourage savings in the current period as individuals reduce their propensity to consume with a view to taking advantage of the expected higher interest rate when it is realized. But it is also reasonable to expect that a lower interest rate in future relative to the prevailing interest rate will tend to elicit more savings in the present period, since savers will act to take advantage of the higher interest rate in the current period relative to the lower interest rate in the future.

Expectation about the future course of inflation rate also largely influences individual's savings decision in the present period. However, the direction of its influence on savings seems to be less straight-forward. Expectation of higher rates on inflation have been realized will be worthless than its value in the current period when he savings decision were implemented. On the other hand, however, inflationary expectation could prompt individuals to save more in the present period so as to be able to use their increased savings to cushion the effect of the inflationary situation in the future. We can conclude from the foregoing analyses that expectations about the future course of certain factors largely influence savings behaviour in the present period.

2.8.6 Government policy

Government can influence people's attitude to savings in various ways. Personal saving can be encouraged through the rate of interest and income tax concessions. It could even be made compulsory, as was the case in Nigeria in 1984. The government established a National Economic Emergency Fund that year. Compulsory deductions were then made from the salaries of workers for a period of fifteen months.

2.8.7 Sense of responsibility

Personal saving is influenced by one's sense of responsibility. A parent, who has many children to care for and yet hardly saves even when his income is quite high, has a poor sense of responsibility.

2.8.8 Political stability

Political conditions influence saving habits. Countries continually threatened by war or revolution do not provide the stable conditions necessary to encourage thrift.

2.9 Non-quantifiable factors influencing savings

These are non-quantifiable and non-tractable factors that influence savings behaviour. They are largely psychological in nature and they include such factors as

i. The instinct of precaution

ii. The desire of request

iii. Habit and cultural factors

2.9.1 Instinct for precaution

Individual who bother about the unknown future would tend to be more precaution in their consumption propensity in the current period than individuals who do not. Their

desire to provide for the unknown future propels them to devote a greater proportion of their income to savings than would be devoted by individuals who are less futuristic in their outlook. The objective, of course, would meet future contingency. The upshot of the foregoing discussion is that the greater the individual's instinct for precaution with respect to the unknown future, the higher the savings rate will be. This can be considered to be true of society's savings propensity of the totality of individual's behaviour towards the future tallies with this line of reasoning.

2.9.2 Desire for request

Individuals who wish to bequeath a portion of their life earnings to their succeeding ones tends to save more than those who do not aspire to do same. Individuals in this second category tend to consume a greater proportion of their income, since they seem to be careless about their successors. This point can be generalized to the macro level. In this case, they present generation tends to consume more of national resources and are careless about the effect of their actions, which border on greed and avarice on the future generation. This is probably true of the Nigerian society.

2.9.3 Cultural factors and habit

Where individuals are warned in the society to abstain from consumption, the savings rate tends to be high as compared to such societies characterized by ostentatious way of life with emphasis placed on current consumption.

2.10 Determinants of Investment

The determinants of investment are those factors that influence how much a firm is willing to expend in procuring investment goods. These determinants are many but this study adopted these factors considered to be most important. These factors include:

i. The user’s cost of capital

ii. Profit expectation

iii. Corporate profit tax

iv. Technical progress

v. State of economy

vi. Government policy

vii. Availability of social infrastructure

viii. Period of gestation

2.10.1 The user’s cost of capital

Classical economists considered the rate of interest as the main determinant of investment spending. The reasoning is that firms compare the cost of funds spent on acquiring newly produced capital goods with the rate of return from those goods, assuming away uncertainties surrounding the return on investment. They proceed to carry out their decision to invest when the rate of return exceeds the cost of fund (implicit and explicit) obtained to finance the investment plan. In the light of this behaviour, it follows that a fall in the cost of fund as reflected in the interest rate will lead to an increase in investment. This microeconomic analysis of the investment behaviour of a single profit-maximizing firm can be generalized to all firms such that it can be concluded that in the aggregate, investment is inversely related to the rate of interest.

2.10.2 Businessmen's profit expectations

Unlike the classical economists, Keynes argued that profit expectation from future economic activity on the part of business is the most important determinant of investment behaviour. Business optimism about future economic activity will prompt

them to carry out their investment decision, the rate of interest notwithstanding. Conversely, a pessimistic business outlook will induce them to withdraw their investment plans, irrespective again of the interest rate. This explains why Keynes regards businessmen's expectation as taking prime position over the rate of interest in making investment decisions.

2.10.3 Existing capital stock

This is a relevant variable in determining investment behaviour because it captures the hypothesis that net investment is considered by the existing stock of capital goods. In this regard, it is reasoned that the decision to invest in a new plant and machinery will be a function of the discrepancy between what the firm considers the optimal and the actual capital stock levels. This reasoning agrees with the stock adjustment hypothesis as propounded by Chenery (1952). Intuitively, therefore, a firm with an excess capacity in plant size will engage in little or no new investment on plant and machinery.

2.10.4 Corporate profit taxes

This also constitutes a vital determinant of firm's investment behaviour. Low corporate taxes and high corporate profit they imply permits firms to invest on capital goods. Conversely, high corporate taxes and the implied low corporate profit serves to constrain the firm's scope to carry out investment on newly-produced capital goods. Indeed, Meyer (1986) has argued that income and profits accruing to firms are crucial determinants of a firm's investment behaviour. Moreover, this variable is consistent with the residual and profit theorists view of "firm’s investment behaviour". High corporate profit taxes translate to low retained earnings by firms and vice versa. The size of the firm’s retained earnings largely determines its scope to carry out investment decisions.

2.10.5 Technical progress

Firm's investment decisions are influenced by the rate of innovation. Innovation brings about technical progress. Rapid technical progress gingers firms to invest more on capital goods than if the inverse were the case. This is because when technical progress is rapid, machines of older vintage go into obsolescence quickly. Firms find it imperative to invest in machines of newer vintage, embodying the fruits of technical progress.

2.10.6 State of the economy and government policy

An economy that is politically stable will attract both domestic and foreign investors. Monetary or fiscal policies of government can be used to encourage investors to increase demand for investment. If it is the intention of government to stimulate investment, it can do so by granting subsidies, tax concessions or low interest rates. The government can also grant generous investment and capital allowance.

2.10.7 Availability of social infrastructure

Where social infrastructures are adequately available there will be incentive to increase investment.

2.10.8 Period of gestation

This is the time interval between investing and earning rewards. If the period of gestation is too long such that it will take a long time to cover cost before starting to make profit, investment will not be attractive, especially to private investors. It is only the government that can take charge of such investments e.g. investment in Dams.

2.11 Reasons for Savings and Investment

Individuals may wish to save for a number of reasons, such as;

i. To provide for old age or for future expenditure.

ii. To guard against a "rainy day" or unforeseen circumstances or for security (the security such as death, draught, fire disaster, sickness and armed robbery).

iii. To leave an estate for children or grand-children.

iv. To save just for the sake of it. In this regard, the person may be a miser, or simply thrifty.

v. To acquire social status. Social status, to some extent, goes with wealth. Some people save in order to be wealthy and to raise their status in society.

vi. Education and training of children.

vii. Social commitments including marriage/marriage obligations, other ceremonies.

viii. Purchase or acquisition of assets and durables.

ix. In order to secure loan for farming and for business expansion.

2.12 Empirical Studies on Savings and Investment

The Nigerian economy in the role of factors analyzed above on influencing savings and investment behaviour is mixed. For example in a study of "the determinants of savings behaviour in Nigeria, 1961 -1980; lyahen (1987) found that "the role of actual price level (inflation) in determining savings behaviour in the Nigerian economy cannot be said to be strong". In addition he detected a somewhat positive relationship between expected inflation and the level of personal savings, a finding which he says "appears to be consistent with the classical savings theory. On the relevance of the existence of savings outlets in influencing saving behaviour, he found that although his variable, as

provided for the number of bank offices, exhibits a positive relationship with the dependent variable, implying that “a large number of bank offices in Nigeria may encourage savings behaviour", it was a weakly significant determinant. In addition, he found that the income variable "is positively related to savings which indicates that people are more willing and able to increasing their saving when their income is high than when it is low", a finding which he noted "is quite expected in the sense that a higher disposable income encourages positive attitude towards savings.

Osakwe (1972), in a study of "the impact of inflation on the growth of the Nigerian economy" investigated the relationship between saving behaviour and inflation for the period, 1960-1972. Howard (1976) in a study of "personal saving behaviour and the rate of inflation" found that inflation had a positive effect on savings behaviour in Canada, UK, and USA, but the same variable negatively affecting savings behaviour in Japan with the period covered by his study.

However, the study carried out by Fabiyi and Idowu (1991) on investment behaviour of farmers in south-western Nigeria showed that there was inadequate investment by fanners in the area of capital improvement with about 87% investing less than ₦2,000 on their farms while 56% actually investing Jess than ₦l,000. According to them, majority of the farmers did not invest beyond their own labour and one or two cutlasses that were in most cases up to three years old.

In empirical studies focusing on the household saving behaviour in developed and developing countries, the results obtained for the developing countries have quite often different from three of the developed countries. The micro-and the macro-studies focused on the savings behaviour of households in developed countries based on the

premises of perfect capital markets and absence of risk aversion. These theories are however, found to be deficient in explaining the saving behaviour of the households in developing countries where most of the households are poor, risk averse and operate in the scenario of uncertainties and imperfect financial markets.

In Nigeria, Ologu (1992) in a study of "the impact of CBN monetary policy on aggregate investment behaviour" found that "only a few of the variables were significant at both 95% and 90% confidence limits in explaining the investment behaviour during the-1976-90 period of study". Specifically, he found that

i. Contrary to expectation and to Chenery's stock adjustment hypothesis, the existing stock of capital goods (plant and machinery) was not a major determinant of investment behavior of firms in Nigeria.
ii. Interest rate was significant in influencing investment decision, noting that "this is not surprising since in a situation of limited residual funds as in Nigeria, the cost of capital should exert significant influence on both the frequency and volume of demand for investible funds by investors.

Finally, he noted that "we could not confirm by our study the possibility of formulating reasonably predictive investment models" because "all our specifications of investment function exhibited very poor predictive qualities".

An empirical study by the World Bank undertaken in certain countries showed that personal savings mobilization was susceptible to the influence of real interest rate. In fact, it was showed that savings responded to substantial increases in interest rate.

In Nigeria, Oluwakemi Adeola Obayelu (2012). Stated that, rural farmers account for over 80 percent of farmers in the country and produce 95 percent of the domestic food production in the country, majority of rural households are small-scale farmers and as such a significant part of their non- farm incomes from small and medium scale enterprises (SMES). Rural entrepreneur are characterized by poor access to credit, poor savings rate, risk and uncertainty, poor weather condition, focusing of information on technology and not pricings. The inability of rural entrepreneurs to access credit has restricted their potentials to expand their enterprises especially in diversifying into nonfarm activities and end up with low standard of living and inability to break the vicious circle of poverty for the rural dwellers. Recently, there has been an upsurge of interest among development economists, government and international donors to increase financial savings in developing countries, particularly in rural areas and among poor households. However a large number of developing countries are unable to mobilize the potential savings of the non-corporate sector because the structure of their financial institutions, financial instruments, and financial policies are not sound.

Deaton. A, (1999), highlighted four reasons for studying savings in developing countries; first, at the microeconomic level, households tend to be large and poor with income prospect more unpredictable than in the developed countries. Secondly, at macroeconomic level, few developing countries have fiscal systems that allow deliberate manipulation of personal disposable income to stabilize output and employment. Third, savings is to low in developing countries and this slow down development. Fourth, saving is even more difficult to measure in developing countries than in developed countries. Thus, understanding the nature of household saving is pivotal to designing policies to promote saving and investment.

Gersovitz-Vega. (2003) identified several reasons why saving behaviour in developing countries may diverge from what is observable in developed countries. These reasons are: a) household in a dynastic and survive beyond individual members;(b) a household is an in decompose unit and savings are decided at the household rather than individual level;(c) household have lower and uncertain income; (d) borrowing constraints may be much more pervasive; and (e) saving to provide buffer for uncertain and unpredictable income rather than intertemporal consumption smoothing. He also noted that families earn income from their rural enterprises only, have little or no saving compare with farmers with high income from combination of both farming and non farming enterprises.

Ayanwale and Bamire(2000) claimed that the savings behaviors of farmers in developing courtiers is less dependent on the absolute level of aggregate income and more dependent among other factors on the relationship between current and the expected income, the nature of business, household size, wealth and demographic variables like age.

According to UN (1981) Capital accumulation is a major prerequisite of economic development and if the volume of savings is inadequate to meet investment requirements, major bottlenecks were likely to develop in the process of capital formation and the drive for development. The volume of investment has been found to depend on incomes costs of procuring investible funds, and entrepreneur's expectations on the trend of business in future.

Adeyemo and Bamire (2005), examined the pattern of savings and investment among four hundred cooperatives farmers in South-Western Nigeria. Result showed that the average annual savings was low (₦31, 572.00) and this increased in proportion to annual incomes in this area. Age, income, household size, farming experiences, loan repayment, and amount of money borrowed were significant variables that influences savings pattern while the fund borrowed significantly influenced savings.

Mishra *et al*. (2010) studied the dynamic relationship between savings and investment in India for the period from 1950-51 to 2008-09 by employing Johansen co integration technique and granger causality test via Vector Auto regression framework. The authors found the presence of long run equilibrium relationship between saving and investment in India. The Granger causality test revealed directional relationship between the variables under study.

2.13 Constraints Limiting Savings and Investment

One of the predominant factors responsible for the stagnation of the agricultural sector in Nigeria is low savings capacity of farm families. This is as a result of low income, which in turn leads to low investment in both farm and non-farm activities. The major factor limiting the taping of rural savings is the meager disposal income of small-scale farmers. It is the level of income that determines the volume of savings and therefore, the amount of capital that could be channeled into investment.

Others constraints affecting savings and investment include:

i. Low interest paid on savings, as regard the use of bank and other informal savings facilities discourages keeping of money there.

ii. Distance and proximity of banks to the people's residential areas.

iii. Fear of insecurity. Because of what is going on in the financial sector, some respondents expressed fear that they may lose their money in case of bank liquidation or collapse.

iv. Price fluctuation: Fall in price of farm produce especially at the time of harvest make it difficult for the farmers so realize enough income from (heir produce.

v. Low income was cited by some of the respondents for not saving since income was not enough for consumption, therefore no excess for savings,

vi. Inadequate knowledge on investment on the part of the individuals.

High cost of farm inputs: These inputs essentially fertilizers, agro-chemicals, seeds and farm implements, in addition, these inputs were hardly available in sufficient when needed most for farm operation.

CHAPTER THREE

METHODOLOGY

3.1 Description of the Study Area

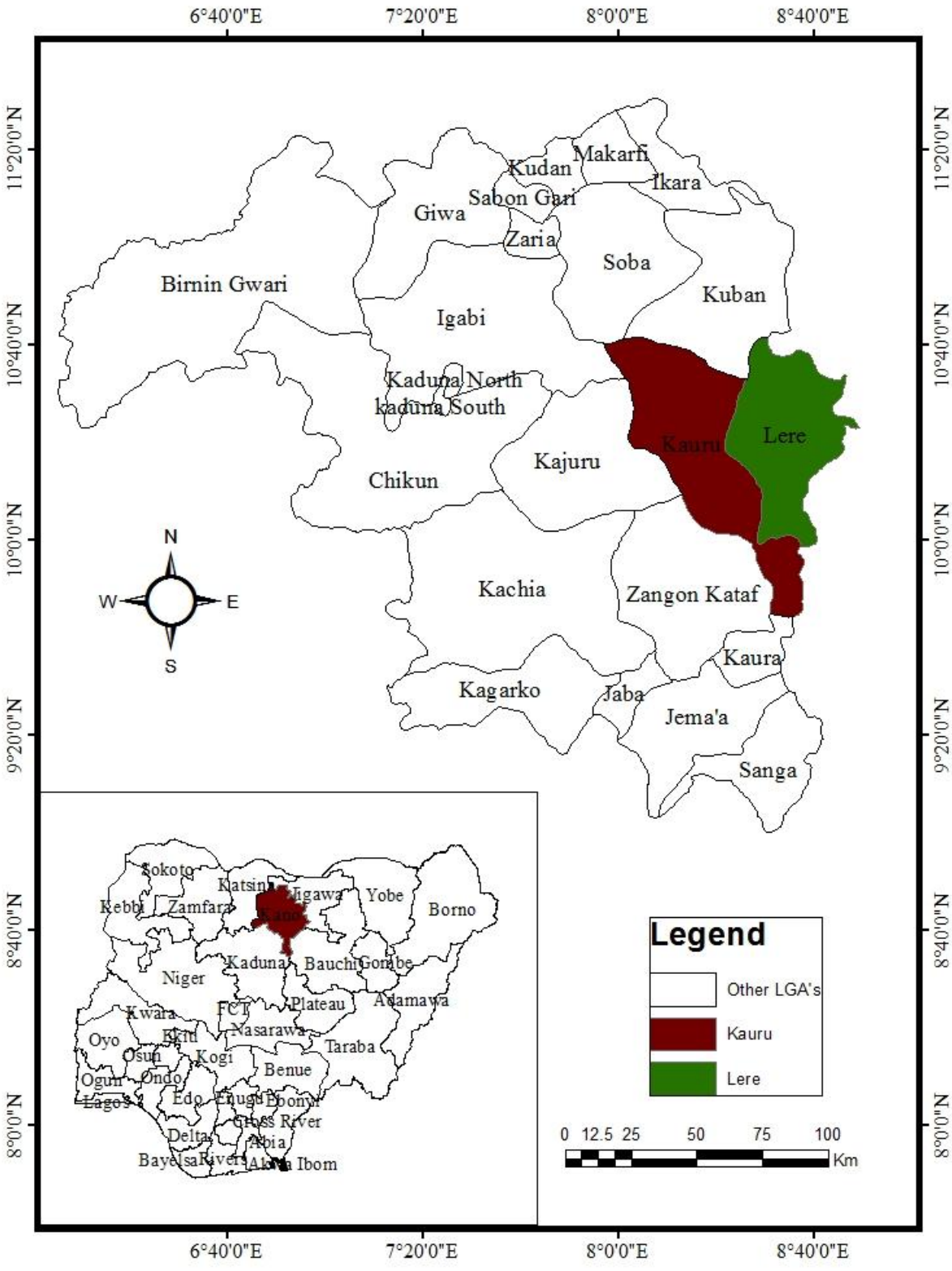
Figure 1 Map of Kaduna State showing the study Areas. Kaduna State lies in the north western part of the country's agro-ecological zones, about 200km away from Abuja the

Federal Capital. Kaduna State is located in the North-western geopolitical zone of Nigeria and lies between Latitudes 9^0N and 12^0N and Longitudes 6^0E and 9^0E of the prime meridian. The State shares boundaries with Katsina and Kano state to the north, Plateau to the north east, Nasarawa and Abuja to the south and Niger and Zamfara State to the west (Kaduna State Government, 2012). The State occupies an area of approximately 68,000 square kilometres or 7% of Nigeria's land mass. The State has 23 Local Government Areas (NPC, 2006).

The State has a total land area of about 4.5 million hectares, with an estimated total arable land of about 2.02 million ha comprising 1.94 million ha upland and 0.08 million ha lowland. The mean annual rainfall shows a marked decrease from South to North (1,524mm to 635mm). Two distinct seasons, rainy and dry are witnessed in the State. The relative humidity is constantly below 40 degrees except in few wet months when it goes up to an average of 60 degrees. The duration of dry season is 5-7 months which normally starts from October; the state is agrarian and well suited for the production of arable crops such as maize, yam, millet, and sorghum because of a favourable climatic condition. Livestock production is also practiced in the State. Rearing of goats, sheep, cattle and different classes of poultry as well as marketing of their products is practiced in the state. The people of the State live mostly in organized towns and cities (Ike and Idoge, 2006). A large variety of non-agricultural occupations also exist.

The total population of the state is 6.11 million (NPC, 2006). With an annual population growth rate of 3.2%, the projected population of the state is about 7.474369 million people in 2013.

Kaduna State vegetation is divided into Northern Guinea Savanna and Southern Guinea Savanna. The soil is developed from undifferentiated complex igneous and metamorphic rocks. The fine top soil coupled with reasonable organic matter in it enhances the fertility status, especially the southern part of the state. The physical properties of the soil are moderately good and allow continuous cropping for variety of crops (KADP, 2012)



. Figure 1: Map of Kaduna State showing the study

3.2 Sample Technique and Sampling Size

A multistage sampling technique was used to select respondents for this study. The first stage was purposive selection of the two (2) local government areas (Kaura and Lere) based on the fact that Kauru represents a typical rural agro-pastoral community, while Lere (Saminaka) is a semi-urban area. The assumption is that the saving propensities of farmers in these two local government areas are likely to differ. Secondly, 6 villages were randomly selected, three from each local government area based on their high level of participation in terms of savings and investment. Finally, a simple random sampling was employed in selecting farmers from each of the villages. Twenty percent (20%) of the sampling frame (844) was used as the sample size. A list of 844 famers was provided by the official of the Agricultural Department of two local government areas (458 from Lere and 386 from Kauru).This list was the sampling frame, in all, 168 respondents were randomly selected using balloting technique.

Table 3.1: Population and sample size of farmers

LGA's	Villages	*Sampling frame	Sample size (20%)
Lere	Gure	162	32
	Yarkasuwa	154	31
	Saminaka	142	28
Kauru	Galadimawa	140	28
	Dandaura	126	25
	Damakasuwa	120	24
Total		**844**	**168**

3.3 Data collection

Primary data were used for this study. These were collected with the aid of structured questionnaire. The information was collected on farmer's socio-economic characteristics such as age, educational status, amount of loan taken, farming experience, interest rate on loan taken, interest rate on savings, income tax, amount owned, total income from farm activities, total income from off-farm, farm size, family size and membership of association.

3.4 Analytical Techniques

The tools of analysis used to achieve the objectives of the study were; Descriptive statistics and multiple Regression.

3.4.1 Descriptive statistics.

Descriptive statistics were used to achieve objectives (i), (iii) and (iv) of the study. It involves the use of measures of central tendency such as mean, frequency distribution, ratios, coefficient of variation and percentages to describe the socio-economic characteristics of the respondents in the study area, i.e. objective (i), to estimate savings and investment behaviour pattern i.e. objective (iii), to evaluate the level of savings and investment made by small scale farmers i.e. objective (iv), and the constraint confronting the farmers in terms of savings and investment, objective (v).

3.4.2 Multiple regression analysis

The multiple regression analysis was used to achieve objective (ii). This technique is selected to determine to what extent the selected variables influence savings and

investment among these farmers. The explicit form of the model adopted for savings is as follows:

$S = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \mu$ ----------(i)

Where:

S = savings (₦)

X_1 = Total income (₦) from farm activities

X_2 = Total income (₦) from off – farm activities

X_3 = Age of farmers (years)

X_4 = Education (years of formal Education)

X_5 = Number of family members

X_6 = Farm size (Ha)

X_6 = Farming experience (years)

X_7 = Membership of association (years)

μ = Error term

Based on the various determinants of investment, the explicit form of the model adopted for investment is as shown below:

$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \mu$ ----------(ii)

Where:

Y = Amount of investment in farm measure in (₦)

X_1 = farm size (Ha)

X_2 = total amount of loan obtained by farmer (₦)

X_3 = farm income during the previous season (₦)

X_4 = Off – farm income during the previous season (₦)

X_5 = Interest rate charged on loans obtained by farmer (₦)

X_6 = Farming experience (years)

X_7 = Membership of association (years)

μ = Error term.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Socio-Economic Characteristics of Respondents

In this section the general socio-economic characteristics of small-scale farmers is provided. These include age, marital status, household size, education, farming experience and farm size as shown in Table 4.1.

4.1.1 Age distribution

The result in Table 4.1 reveals that majority (78%) of the small scale farmers were between the ages of 24-47 years with a mean age of 42years. This is an indication that the small scale farmers in the study area were mostly middle aged and still active. This has implication on agricultural production because of the ability of this segment of the population to effectively withstand the rigours, strain and stress involved in agricultural production (Onyenucheya and Ukoha, 2007).

Table 4.1: Age distribution of the famers

Variables	**Frequency**	**Percentage**
Age		
24-31	12	7
32-39	39	23
40-47	80	48
48-55	27	16
56-63	10	6
Mean	**42**	
Total	**168**	**100**

4.1.2 Marital status distribution

Table 4.2 shown that good proportion (98%) of the small scale farmers in the study area were married while 2% of them were single. This implies that the married small scale farmers were more involved in farming because of the need to supplement the family's means of livelihood (Adegboye *et al.*, 2008).

Table 4.2: Marital status distribution of the farmers

Variables	**Frequency**	**Percentage**
Married	164	98
Single	4	2
Total	**168**	**100**

4.1.3 Household size

Table 4.3 shown that majority (95%) of the small scale farmers had between 2-12 household sizes with the mean household size of seven persons. This result indicates that the small holder farmers in the study area had moderate family sizes. 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 corroborates with the finding of 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.

Table 4.3 Household size distribution of the farmers

Characteristics	Frequency	Percentage
1-6	92	55
7-12	67	40
13-18	9	5
Mean	**7**	
Total	**168**	**100**

4.1.4 Educational level

Table 4.4 shown that about 46% of the farmers had secondary education. Approximately, 43% had primary education. Also 2% had tertiary education, while; only 4% did not have any formal educational qualification. It means majority (96%) of the small scale farmers had some form of formal educational qualification. Possession of literacy (ability to read and write) would enable the farmers to better utilize effectively and efficiently whatever available resources in the area. As expected, higher education would enhance improved technology adoption, hence increased farm income (Ezeh, 2007).

Table 4.4: Educational level distribution of the farmers

Variables	Frequency	Percentage
Non-formal	6	4
Primary	73	43
Secondary	78	46
koranic/Arabic education	1	1
Adult education	7	4
Tertiary	3	2
Total	**168**	**100**

4.1.5 Farming experience

Table 4.5 shows the farming experience distribution of the farmers and it was found that 70% of the farmers had between 6 and 21 years of farming experience with the mean farming experience of 18 years. Farming experience is used as a measure of management ability, the more experienced the farmer is, the more his ability to make farm decisions. This result shows 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 agreement with the findings of kebbeh *et al*., (2003), which reported an average of 21 years of farming experience in rice farming in Kaduna and Niger States of Nigeria.

Table 4.5 Farming experience distribution of the farmers

Variables	Frequency	Percentage
Farming experience		
6-13	69	41
14-21	49	29
22-29	21	13
30-37	26	15
38-45	3	2
Mean	**18**	
Total	**168**	**100**

4.1.6 Farm size

Table 4.6 revealed that most (89%) of the farmers had between 4.0 and 4.9 hectares of farmland while approximately 39% had 3.0-3.9 hectares of farmland, and only 2% had above 6.0 hectares with the mean farm size of 3 hectares. This is a clear indication that the farmers in the area operate mostly on small scale. This result is in agreement with the observation of Onumadu (2009) that most farmers in the rural areas generally have small holdings.

Table 4.6 Farm size distribution

Variables	Frequency	Percentage
Farm size		
1.0-1.9	29	17
2.0-2.9	15	9
3.0-3.9	66	39
4.0-4.9	41	24
5.0-5.9	14	8
6.0 and above	3	2
Mean	**3**	
Total	**168**	**100**

4.2 Determinants of Savings of Small Scale Farmers

The result of multiple regression analysis as shown in Table 4.6 indicates that the coefficient of determination (R^2) was 0.548 which signified that about 54.8% of total variation observed in the dependent variable was explained by the explanatory variables (X_1-X_7) included in the model. The fitness of the model was further confirmed by the low value of the standard error of the estimate (Standard Error = 1.7475). Again, the overall significance of the model was depicted by the F-statistics which was significant at 1% level. The significance of F-ratio shows that the regression result was statistically reliable.

It was found that the coefficient of age (β_1) of the farmer exerted positive influence on the savings of farming household and statistically significant at 1%. This finding is in consistent with *a priori* expectation as savings tend to increase with age. Implying that the amount saved by small scale farmers increases with increasing age. This

consolidates the findings of Attanasio and Szekely (2000) who found that savings capacity is enhanced as age tends to rise. Old people tend to be more frugal and thrifty.

The result further shows that household size (β_2) was negatively signed and statistically significant at 1% level which signifies an inverse relationship with saving. This finding is justified as an increase in household size of a farmer will result to an increase in the household spending hence, resulting to a decline in saving. This is because farmers with large family sizes spend more money for their up keep and, cannot save much amount of money. This is in consonance with the finding of Rehman *et al.* (2010) who studied the demographic and other influences on long term saving behaviour in India and came up with finding that large family size had a depressing effect on long term household saving rate. Similarly, Kibet *et al.* (2009) posited that an increase in household size will bring about increase in dependency ratio and as such is bound to cause a decline in saving, while a decline in dependency ratio will result in an increase in saving.

Educational level (β_3) of the farmer was found to be positively related to savings at 5% level of significance. This signified that an educated farmer can save better than an illiterate farmer. This finding corroborated Burney and Khan (1992) who posited that educated farmers tend to save more than uneducated farmers as his savings can be used for the good education of their children.

The coefficient of farm income (β_6) was found to be positively signed and statistically at 1% level. This was justified as increase in farm income level of a household will bring about increase in the saving as increasing income will result to surplus that will be saved after consumption expenditure has been made. This finding justified the

Keynesian theory of consumption which posits a positive relationship between income and saving; and that household savings is directly and significantly affected by the income level. The result again ran concurrently to the finding of Samroyina (2004) who studied saving behaviour among households in Russia and found that the marginal propensity to save out of income was positive. This concurred with economic theory where an increase in income is bound to lead to an increase in saving.

The coefficient of off-farm income (β_7) was found to be positively signed and significant at 1% level of significance. This is because off-farm income acts as an important strategy for overcoming credit constraints faced by the rural households in many developing countries (Reardon *et al*., 2007). Off-farm income is reported to act as a substitute for borrowed capital in rural economies where credit markets are either missing or dysfunctional (Ellis and Freeman, 2004; Diiro, 2013). This was justified as increase in the income level of a household will bring about increase in the investment as increasing income will result to surplus that will be invested after consumption expenditure has been made.

Table 4.7: Result of the regression coefficients of factors influencing savings

Variable	Coefficients	Standard error	T-stat
Constant	155665	99618.9	1.562605
Age	7652.301***	2208.116	3.465533
Household size	-20829.6***	5768.308	-3.61104
Education	7898.99**	3386.838	2.33226
Farming experience	-2868.17	1944.164	-1.47527
Farm size	-6160.16	12006.17	-0.51308
Farm income	0.397133***	0.035289	11.2537
Off-farm income	0.10864***	0.018711	5.806272
R Square	0.601		
Adjusted R Square	0.548		
F-ratio	22.956***		

*Note: *** p<0.001*
*** p <0.05*

4.2.1 Determinants of Investment of Small Scale Farmers

The result of multiple regression analysis as shown in Table 5 indicates that the coefficient of determination (R^2) was 0.649 which signifies that about 64.9% of total variation observed in the dependent variable was explained by the explanatory variables (X_1-X_7) included in the model. The fitness of the model was further confirmed by the low value of the standard error of the estimate (Standard Error = 3.718). Again, the overall significance of the model was depicted by the F-statistic which was significant at 1% level. The significance of F-ratio shows that the regression result was statistically reliable.

The coefficient of household size (β_2) was found to be positively signed and statistically significant at 1% level which signified a direct relationship with investment. This

finding was justified as an increase in household size of a farmer will result to an increase in the household spending hence, resulting to an increase in investment. This implies that, a farmer with a large household will likely invest more of his income. This confirmed earlier findings that farm households in the study area have adult and economically active household members (mean age of 42%). A farmer with large economically active household members will likely invest more of his income, since he will not solely provide for the household. This also implies a lower well-being for a farmer with a larger household size. Increase in household size has implication on farm labour supply which minimizes the amount spent on hired labour and as well maximizes profit.

The coefficient of farm size (β_4) was found to be positive and statistically significant at 1% level of significance. This indicates that an increase in farm size leads to an increase in income of the small holder farmers. The sign of the coefficient conforms to *a priori* expectation. This result is in tandem with Onwuka (2005) and Oputa (2005) that the larger the farm, the more quantities of inputs that would be needed in the farm, hence greater investment expenditures and income. This result is expected because large farm size leads to gains known as economic of scale (Onyebinama, 2004). Meanwhile, this finding contradict Anyiro and Oriaku (2011) that suggest efficiency in the use of land rather than expansion of cultivated areas as a necessary requisite that could increase farmers income.

The coefficient of farm income (β_5) was found to be positive and statistically significant at 1% level. This implies that an increase in farm income of the small holder farmers will stir up increased amount invested in farming. Small holder farmers with higher

levels of income have a higher tolerance for risk. Hence, they are most likely to invest more funds in farming. Limited financial resources at the disposal of farmers act as barrier to increase in farm enterprise investments. This outcome contradicts the findings of Oseni and Winters (2009) who reported in their studies in Nigeria that households with increased farm income are more likely to diversify and invest more fund in off-farm income generating activities, hence undertake off-farm work. The coefficient of off-farm income (β_6) was found to be positive and statistically significant at 5% level. It means that the off-farm income of respondents improve the farmers' ability to make investment. When off farm income increases, they invest these additional earnings into more diversified business sources.

The coefficient for interest rate charge on loan obtained (β_7) was found to be negative and statistically significant at 1% level. This means an inverse relationship with farmers' ability to make investment. This is in line with the general expectation and it confirms the fact that high interest rate tend to decrease investment. It can be concluded that total value of interest rate charged on loan have effect on investments; it implies that, an increased interest rate charged to loan will cause a decrease in investments by the farmer Therefore; this actually may not necessarily reflect the farmers' capacity to make voluntary investments. However, the study conducted by Rogg (2000) confirms the result from this model.

Table 4.8: Result of the regression analysis of factors influencing investment

Variable	Coefficients	Standard error	T-stat
Constant	600773.7	285520.3	2.104136
Age	7943.995	4977.117	1.596104

Household size	47999.85***	12251.99	3.917717
Farming experience	8675.09	36376.32	0.2384818
Farm size	91705.6***	25193.15	3.6401
Farm income	36610.37***	6724.745	5.444128
Off-farm income	35899.2**	15602.22	2.300903
Loan obtained	-1024970***	212556	-4.82212
R Square	0.677		
Adjusted R Square	0.649		
F-ratio	13.839***		

*Note: *** p<0.001*
***p<0.05*

Test of Hypothesis i

There is no significant relationship between the socio-economic characteristics of small scale farmers and their saving and investment. Based on the result of the analysis in Table 4 and 5, age, household size, education, farming experience, farm size, farm income and off-farm income were significant at various level of significance the null hypothesis is rejected

4.3 Level of Savings Made by the Small-Scale Farmer from Farm Activities in the Study Area

Savings was computed in monetary term. For those that save in form of grains, the market value was used in order to have a uniform computation. The result in Table 4.11 shows the level of savings made from income generated from farm activities such as

production of crops (maize, millet, sorghum, soybeans and cowpea). while livestock rearing such as cattle, sheep, goat and poultry were considered for this study. It was found that households that saved from income generated from both production of crop and livestock had the least average savings (₦ 198936.6), while those that saved from income generated from crop production had the highest average savings (₦ 28, 7311.4). The result indicates that 92% of the farmers saved from the income generated from farm activities. The implication of these findings is that crop or livestock production can still be favourable for savings if properly managed. Finally, 8% of the respondents indicated that they did not save from income generated from either the production of crop and livestock. This could be attributed to the fact that the income generated from farm activities was not enough to meet their needs, therefore no surplus to keep aside as savings. This finding is consistent with the finding that the main constraint to the small holder farmers' inability to save is low income.

Table 4.9: Distribution of small scale farmers according to their level of savings from farm income

Farm activities	**Frequency**	**Percentage**	**Average Farm Investment**
Crop production	161	32	287311.4
Livestock production	146	29	207312.6
Both crop and livestock production	158	31	198936.6

No savings	39	8
Total	504*	100

Multiple Response Allowed*

4.3.1 Level of savings made by the small-scale farmer from off- farm activities in the study area

The result in Table 9 shows the level of savings made from income generated from off-farm activities such as civil service, trading, tailoring, carpentry, blacksmithing and transportation. It was found that households that saved from income generated from blacksmithing had the least average savings (₦37,059.8). Household involved in civil service, tailoring, carpentry, and transportation saved ₦80,252.38, ₦115,642.9, ₦69,211.9 and ₦45,482.14, respectively. The result indicates that 91% of the farmers saved from the income generated from off-farm activities. While, 9% of the respondents indicated that they did not save from income generated from off-farm activities. Finally, trading had the highest average savings of ₦ 382,881. The implication of these findings is that trading, tailoring, civil service and carpentry can still be favourable for savings if properly managed.

Table 4.10: Distribution of small scale farmers according to their level of savings from off-farm income

Off-farm activities	Frequency	Percentage	Average off-farm income
Civil service	143	14	80,252.38
Trading	284	28	382,881
Tailoring	104	10	115,642.9
Carpentry	136	13	69,211.9

Blacksmith	121	12	37,059.8
Transportation	126	13	45,482.14
No savings	94	9	
Total	**1008***	**100**	

Multiple Response Allowed*

4.3.2 Level of investments made by the small-scale farmers in farm activities in the study area

Table 10 shows the level of investment made by small scale farmers in farm activities annually. It was found that 19% of the respondents invested on average, ₦56845.27, for acquiring new tools such as hoes and cutlasses, 18% of the respondents invested ₦103428.6 and ₦35336.85 for the purchase of fertilizers, chemicals and new seed, respectively. Approximately 17% and 12% invested on hired labour and irrigation equipments, respectively. Approximately 4% and 5% of the respondents invested an average of ₦6053.571 and ₦7785.714 on land purchase and land hire/lease, respectively. It was found that farmers in the study area engaged in both recurrent and capital investment, but it was relatively low among the farmers. This may be attributed to their level of operation as small scale farmers and also investment in this aspect is expensive and most of them cannot possibly afford irrigation equipment. The result indicates that 84% of the farmers made investment with the income generated from farm activities. It was observed that a large number of the respondents (84%) invested in farming. This might be due to the fact that farming is the occupation of a large number of the respondent families in the study area and also that it is the easiest form of investment for households in the area. The main finding is that the households invest mainly in real form like acquiring new tools such as hoes and cutlasses, purchase of fertilizers, chemicals and new seed, hired labour and irrigation equipments. This finding

is in line with that of Raman's (2002), observation that in areas where the monetary system and capital markets are still not well developed, and are in primitive forms, these real investments are extremely popular among individuals and families. Finally, 8% of the respondents did not make any investment with the income generated from farm activities. This could be attributed to the fact that the income realized was low and what was kept aside as savings were low, this could lead to low or no investment.

Table 4.11: Distribution of small scale farmers according to their level of investment in farm activities

Farm activities	**Frequency**	**Percentage of Sample Size**
Acquiring new farm tools	167	99
Purchasing of fertilizer	160	95
Chemicals and new seed	163	97
Hired labour	149	88
Land purchasing	31	18
Land hire/lease	40	23
Others(irrigation equipment)	106	63
No investment	67	39

Multiple Response Allowed*

4.3.3 Level of investments made by the small-scale farmer in off-farm activities in the study area

For off-farm investment presented in Table 11, majority 33% of the farmers invested on average, ₦ 77,510.12 on education of children. The respondents actually value investment in the human capital development of their children in terms of sending them to school, with the expectation that the children will look after them at old age when they (the parents) can no longer work. To these family heads therefore, sending their

children to school is seen as ensuring the financial security of themselves and their families in general. About, 32%, 24% and 1% invested on building/maintenance of their houses, trade expansion and others such as household equipment, respectively. Some of them also invested in housing because it can be used as collateral to secure loans in the future to undertake other activities. Those who invest in trading do so because to them, it is a lucrative venture to engage in since the return rate is very high. Nearly 24% of the respondent said they invest in trading because it serves as employment security for them and their families especially their wives. Low risk level, experience and support at old age are also reasons that some of the families assigned to their choice of trading as an investment option. Also, 10% of the farmers did not make investment from the income generated from the off-farm activities. The results indicated that 90% of the farmers made investment with the income generated from off-farm activities.

The level of investment in children education shows the importance of education, educational status is a socio-economic characteristic that influence the quality of life of farming household. The educational background would no doubt help in decision making especially in terms of meaningful managerial decisions, leadership and investments and it influences the farmer's ability to manage his enterprise as to generate enough income, save and reinvest to increase production. This corroborates the earlier finding that majority (96%) of the small scale farmers had some form of formal educational qualification.

Table 4.12: Distribution of small scale farmers according to their level of investment in Off-farm activities

Off-farm activities	**Frequency**	**Percentage**
Education of children	162	33

Building/maintenance of house	155	32
Trade expansion	118	24
Others(household equipment)	6	1
No investment	50	10

Multiple Response Allowed*

4.4 Constraints Associated with Savings and Investment in the Study Area

The constraints identified by the respondents that inhibit their attempt to save and invest as small holder farmers are shown in Table 12. The main constraint to the small holder farmers' ability to save is low income which was identified by 26% of the respondents. According to this category of respondents, their incomes are not able to meet their needs let alone some being left for savings. They conceded that though they always try and wish to save, they are unable to do so due to their limited incomes.

Bank procedures (20%) were also found to hinder the small holder farmers saving abilities. The respondents keep away from patronizing banks because of their practices and procedures which they claim to be harsh and time consuming.

Also, price fluctuation of their farm produce was identified by another 18% of the respondents as constraining their ability to save money. Price instability is a problem the farmers have to contend with especially at the time of harvest when the price is usually low thereby making it difficult for them to make good revenue from their farm produce. Another constraint is low interest rate on deposits (14%). The farmers complained that what the banks are offering as interest is too low, so they consider it waste keeping money there. Distance of banks to the respondents residential area

ranked sixth (7%) among the constraints. The respondents have to travel long distances to have access to bank, this discourages saving.

Finally, another hindrance to the small holder farmers' ability to save also has to do with the fear that their monies will not be safe if they save it in both formal and informal forms. Some of them (3%) mentioned that people may abscond with their savings or thieves may enter their homes and make away with their savings.

This finding justifies the notion that farming was still not viewed as a business in the area as any farm that is operated as business should be capable of generating sufficient revenue for both the farm and farming family. However, the finding justified the results of Thingan (2001) and Adewunmi (1996) who observed that due to the peasantry nature of the rural farmers of the southern Nigeria, the returns to farming was low thus, contributing to the low saving habit, and that low income of farmers is as a result of their high marginal propensity to consume and low marginal propensity to save.

On the other hand, inadequate capital was ranked first by 25% of the respondents. Meaning that since the income realized was low and what was kept aside as savings was low, this can lead to low investment.

Another major constraint to investment is high cost of inputs such as fertilizers, agro-chemicals, seeds and farm implements which identified by 21% of the respondents as the second constraints to investment. Low price was ranked third by 18% of the respondents. Low price especially at the time of harvest makes it difficult for them also to keep aside something for investment. High interest rate was ranked fourth by 14% of the respondents. Interest rate charged on loan by both formal and non-formal sources is

very high making it difficult for the farmer to obtain loan for investment. Loan default is another constraint (7%) ranking sixth. Some of the respondents invested their money through lending but lamented that most of the time they lost the money due to default on the part of the borrower, this discourages them from this type of investment. Inadequate knowledge was ranked seventh by 5% of the respondents. Some of the respondents lack knowledge on investment opportunities available to them. Finally, inadequate storage facility was ranked seventh by 10% of the respondents in the study area. Some of the respondents stores grains to re-sell when they think they can make enough profit. But due to lack of storage facilities they lost part of it to pests and diseases. This discourages them from this type of investment. This was justified on the ground that a farmer who lacks appropriate storage facilities will encounter post-harvest (perishability) losses of products and this will deter them from saving and investing. This findings further confirm Bime (2008) who reported that poor market structure, inaccessible roads, activities of middle men and the perishable nature of the produce serve as co-factors affecting savings among vegetable farmers in the North West region of Nigeria.

Table 4.13: Constraints associated with savings and investment in the study area.

Saving	**F**	**Rank**	**Investment**	**F**	**%**	**Rank**
Low income	164	1st	Inadequate capital	167	25	1st
Bank procedures	127	2nd	High cost of inputs	141	21	2nd
Price fluctuation	112	3rd	Low price	122	18	3rd
Low interest rate	89	4th	High interest rate	91	14	4th
Pest and diseases	65	5th	Loan default	45	7	5th
Distance/proximity	43	6th	Inadequate knowledge	31	5	6th
Fear of safety of their income	21	7th	Inadequate storage facility	68	10	7th

Total	**621***	**665***	**100**

Multiple responses allowed*

CHAPTER FIVE

SUMMARY, CONCLUSION, CONTRIBUTION TO KNOWLEDGE AND RECOMMENDATIONS

5.1 Summary

This study was designed to analyze savings and investment behaviour of small-scale farmers in Kauru and Lere Local Government Areas of Kaduna State. The two local government areas were purposively selected while the respondents were randomly selected. The data for analysis were collected through the use of structured questionnaires and were analyzed using descriptive statistics (such as frequency distribution, percentage, and mean) and multiple regression models. The socio-economic characteristics of the respondents revealed that the mean age of farmers was 42 years. Majority (96%) of the respondents did have formal educational qualifications

especially primary, secondary, koranic/Arabic, and adult education. The mean household size was 7persons. Approximately 70% of the respondents had between 6-21 years of experience in farming. Also, 89% of the respondents had between 4.0-4.9 hectares of farmland and the mean was 3 hectares. Result of the regression analysis on the factors that influenced saving showed that age, household size, education, farm and off-farm income were the factors that significantly influence savings of farmers at various level of significance. It was found that household size, farm size, farm income, off-farm income and loan obtained were the factors that significantly influence investments of farmers at various levels of significance. It was found that age, household size, education, farming experience and farm size were the factors that significantly influenced saving behaviour of farmers at various levels of significance.

It was also found that sex, age, marital status, household size, farming experience and farm size were the factors that significantly influenced investment behaviour of farmers at various levels of significance.

The average savings from farm and off-farm activities were ₦693,560.5 and ₦1,064000, while, average investments from farm and off-farm income were ₦258,054.1 and ₦369,352.4. Finally, 26% and 25% of the farmers ranked low income and inadequate capital as the foremost constraints associated with savings and investment in the study area.

5.2 Conclusion

The conclusion from this study is that rural households do participate in savings and investment irrespective of their low income and have the highest potential for overall growth of national domestic investment of Nigeria. This empirical study is contrary to

the traditional theories of household investment explaining the poor cannot save and invest. The findings of this study further confirmed and identified factors such as age, educational level, household size, farming experience, farm income, off-farm income and loan obtained as directly responsible for farmer's willingness to save and invest in the study area.

5.3 Recommendations

Based on the findings, the following recommendations are made:

i. Most of the respondents mentioned inadequate knowledge as some of the constraints associated with investments, Government and non-governmental organization through the extension workers should organize proper enlightenment programme geared towards the education of the farmers as way of educating them on the importance of savings and investment.

ii. Most of the respondents complained of low income and high cost of farm input such as fertilizers and agrochemical as one of the foremost constraints faced. Small scale farmers should be encouraged to form cooperative societies to enable them access credits from banks as this will encourage the accumulation of social capital in form of savings and 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.

iii. Given the significance of the income factor in terms of both savings and investment, incentives such as improved technology, appropriate farm support services, medium and long term loans should be provided by the government

and other bodies to farmers in order to boost their income level. Only then can the savings being accumulated in the rural economy be transformed into productive investment that will enhance or uplift their present standard of living.

iv. High interest rate was mentioned as part of constraints associated with investment. It is recommended that the interest on loan should be reviewed in such a way that the end-users will be able to service the loan and also have some margin as the net returns.

v. Most of the farmers complained of price fluctuation and low price as part of constraints associated with savings and investment. Therefore, there is the need to improve the pricing system. Farmers should form a production clusters to improve their market intelligence. This could be achieved through the formation of producer groups or cooperatives. In each group there should be an advisory committee trained in various aspects of marketing which will be able to have access to up-dated pricing information and make it available to farmers on time.

5.4 Contribution to Knowledge

i. It was found that the average savings from farm and off-farm activities were ₦693,560.5 and ₦1,064000, while, average investments from farm and off-farm income were ₦258,054.1 and ₦369,352.4. These indicate that farmers in the study area had high propensity to save and invest.

ii. It was found that age (1%), household size (1%), education (5%), farm income (1%) and off-farm income (1%) were factors that influence farmers willingness to save in the study area.

iii. It was also found that household size (1%), farm size (1%), farm income (1%) off-farm income (5%) and loan obtained (1%) were factors that influence farmer's willingness to invest in the study area.

iv. It was found that age, household size, education, farming experience and farm sizes were responsible for 65% variations observed in the saving behaviour of the farmers.

v. The coefficients of sex, age, marital status, household size, farming experience and farm size were responsible for 75% variations observed in investment behaviour of the farmers.

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APPENDIX I

DEPARTMENT OF AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY AHMADU BELLO UNIVERSITY, ZARIA.

INSTRUCTION: Please tick or fill where appropriate

A. General Information

1. Date of interview…….
2. Questionnaire No…….
3. Interviewer……
4. Name of Farmer…….
5. Sex: Male [ ] Female [ ]
6. Age: .....
7. Are you married: Yes [ ] No [ ]
8. If married, what is the size of your household?.....

No of wife/wives	Children	
	No of male	No of female

9. How many years did you spend in school……..
10. What is the highest level of your education?.....

(a) Primary Education [ ]

(b) Secondary Education [ ]

(c) Koranic/Arabic Education [ ]

(d) Adult Education [ ]

(e) Post Secondary/University [ ]

(d) Non literate [ ]

INFORMATION ON FARMING ACTIVITIES

11. How long have you been farming?.....

12. What is the total area of your farm land, size of farm, acre or Ha?.....

1 3. How did you acquire your farm?

(a) Inherited [ ] (e) Gilt [ ]

(b) Purchase [ ] (f) Mortgage [ ]

(c) Hire [ ] (g) Others specify.....

(d) Family land [ ]

14. What are the major crops produced

(a)..... (d).....

(b)..... (e).....

(c)..... (f).....

15. What is the total area of farm land (Ha or acre) allocated to each crop grown above?.....

	Crop produced		Farm size (Ha/acre)		Yield (Kg/Bag)	
	Sole crop	.Mixture	Sole	Mixture	Sole	Mixture
A						
B						
C						
D						

Others Specify						,,

16. Crop products output/Ha or acre

Sole crop name of Crop	Crop mixture name of crop	Quantity (Kg/Bag) sold	Quantity (Kg/Bag) consumed	Quantity given out as gift (kg/Bag)	Quantity received as gift (kg/Bag)	Quantity purchased (kg/Bag)	Total amount

OFF-FARM ACTIVITY(IES)

17. What other activity (ies) do you engage in apart from farming?.....

18. What is your source(s) of income?

    (a) Farm activities

    (b) Off-farm activities

    (c) Combination of (a) and (b)

    (d) Other sources (specify).....

19. What is the amount of income realized from the following last season?

    (a) Farm activities.....

    (b) Off-farm activities.....

    (c) Other source .....

20. How much of your income was spent on the following consumption?

	Amount (₦)

Food	
Clothing	
School fees	
Medication	
Others (specify)	

INFORMATION ON SAVINGS AND INVESTMENT

21. Do you save? Yes [ ] No [ ]

22. If yes, why do you save?.....

23. If no. why are you not saving?.....

24. If you are saving, how do you save?

a) With the banks f/] b) Adashe |] c) At home [d) Others

(specify).....

25. Do you keep livestock? Yes [ ] No

26. If yes, what type(s) of livestock do you keep?

Type of animal	Number of animals	Average current market value ()	Number of animals sold	Total market value ()
Cattle				
Sheep				
Goats				
Donkeys				
Horses				
Chicken				

Ducks				
Guinea fowl				
Others (specify)				

27. Do you have any other form of savings apart from cash, animals, grains?

Yes [ ] No f]

28. If yes, please specify.....'.....

29. What amount are you able to save from your farm incomes during the last cropping season? .....

30. What amount do you keep for saving from off-farm income(s) in the last cropping season? .....

31. What amount do you keep for saving in the following way?

a) Cash at home .....;.....

b) The amount (cash) in the bank .....'.....

c) Amount from Adashe .....

d) Others (specify) .....

32. How much of your savings do you invest in farm activities? .....

33. What proportion of this amount in (31) above goes into':

a) Acquiring new farm tools .....

b) Purchasing of fertilizer …….....

c) Chemicals and new seeds ….....

d) Hi red labour …….

e) Land purchase .....

f) Land hire/lease.....

g) Others (specify).....

34. How much of your savings do you invest in following activities?

a) Education of children .....

b) Building of house(s).....

c) Trade expansion .....

d) Others (specify).....

35. Did you borrow money or take loan? Yes [ ] No [j

36. If yes how much? .....-..

37. What is the interest on the loan? .....

38. From where do you borrow from?

a) Bank b) relatives c) Friends d) cooperatives ' e) Others (specify).....

39. What problem(s) do you normally encounter in saving part of your income?.....

40. What problem(s) do you normally encounter in investing you savings?..... •

41. What in your view can be done to improve your savings?.....,,.....

42. What in your view can be done to improve your investment.....