IMPACT OF KADUNA AGRICULTURAL DEVELOPMENT PROJECT ON THE SOCIO-ECONOMIC WELL-BEING OF FARMERS IN LERE LOCAL GOVERNMENT AREA KADUNA STATE, NIGERIA

BY

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A THESIS SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES, AHMADU BELLO UNIVERSITY, ZARIA, NIGERIA, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTERS DEGREE IN GEOGRAPHY.

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DECLARATION

I hereby declare that the work in this thesis titled "The impact of Kaduna agricultural development project on the socio-economic well-being of farmers in Lere local government area Kaduna State, Nigeria" was performed by me under the supervision of Prof. J.A. Ariyo and Dr. I. J. Musa. The information derived from the literature has been duly acknowledged in the text and a list of references provided. No part of this work has been presented for another degree or diploma at any institution.

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_____ _____

Signature Date

CERTIFICATION

This thesis title THE IMPACT OF KADUNA AGRICULTURAL DEVELOPMENT PROJECT ON THE SOCIO-ECONOMIC WELL-BEING OF THE PEOPLE OF LERE LOCAL GOVERNMENT AREA KADUNA STATE, NIGERIA" meets the regulations governing the award of the degree of Masters of Science in Geography of the Ahmadu Bello University and is approved for its contribution to knowledge and literacy presentation.

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DEDICATION

This dissertation is dedicated to the memory of my late father Alhaji Ibrahim - Dabo, (Wakilin Birnin Zazzau, 1962-1989.) and his father Mallam Muhammad Lawal Ibrahim Abu-Bakr the grand dad I never knew who died around 1935. Indeed the publicity he received and his vicissitudinal life fortified, inspired and fired my imagination during my trials and tribulations. May their gentle souls, rest in perfect peace. Amen.

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Thank you very much and God bless.

ABSTRACT

This study appraised the impact of Kaduna agricultural development project (KADP) on the socio-economic well being of farmers in Lere Local Government Area Kaduna State. It is believed that this type of project most have effects either positive or negative any were they are executed. In this work the positive benefit were considered. The analyses include the used of Standard deviation, Logit regression, Chi Square, Percentage computation and tables were used to analyzed and summarized data for presentation and discussion. The study found out that there are channels of input distribution and difference in the adoption of new technology because of difference in education level, social status, income and dependants. It also found out that the activities of KADP has impacted on lives of the farmers because there is improvement in their living standard, housing conditions, rise in their socio-economic activities and income accumulation. The result obtained revealed that 85% the services provided by KADP has impacted on the farmers by increasing output of their produce, increase their income and off farm earnings, improve their social status and house management style and transforming their socio-economic well being. It was recommended that KADP project should be properly financed and managed by government and other public figures because it reduces poverty.

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LIST OF ABBREVIATIONS

ABU:	Ahmadu Bello University
ADP:	Agricultural Development Programme
AERS:	Agricultural Extension Research Services
AIETA:	Awareness Interest Evaluation Trial and Adoption
AKAP:	Awareness Farmers Adoption Productivity
DFFRRI:	Directorate of Food Feeder Rural Roads Infrastructures
FMG:	Federal Military Government
FSC:	Farm Service Centre
GR:	Green Revolution
IMF:	International Monetary Fund
IP:	Project Input
KADP:	Kaduna Agricultural Development Project
MAMSER:	Mass Mobilization for Socio Economic Recovery
MANR:	Ministry of Agriculture and Natural Resource
NALDA:	National Agricultural Land Development Authority
NFDP:	National Fadama Development Programmes
NATSP:	National Agricultural Technology Support Programmes
OFN:	Operation Feed the Nation
PB:	Project Beneficiaries
PE:	Project Effects
PIM:	Project Impacts Management
PO:	Project Output

REAP: Reflective Evidence to Appraise Programme

SAP: Structural Adjustment Programmes

SFEM: Second Tier Foreign Exchange Market

SPSS: Statistical Package for Social Sciences

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

Agriculture is the most wide spread form of activity, it serves as a means of livelihood for more than quarter of mankind; raw material for factories, which human beings depend on, and for feeding the industrial works. The surplus is sold to purchase other basic necessities of life, such as clothes, can food, electric cookers, stoves, refrigerator, cables satellite, television sets, and radio sets. Many factories will shut down without agriculture; despite the work of science and technology, the world is a dead place without food (Geoffrey, 1990).

Agricultural development through the adoption of new farm input technological know how, rural roads facilities, rural electrification enhance increase in food production provide employment obviate rural urban drift improve standard of living of the rural populace and social status (Salisu, 2009).

Government strategies to increase farm income of the rural farmers are designed in such away that farmers input are scientifically and technologically improved to bring about greater output. Much earlier in the 1960's Nigeria old regional government namely the North, West, East and mid-west, under took different policies and specialization method of producing differences crops within its territorial bound, the climate physical, and social differences development of food agency, sand as the agricultural land development authority (NALDA) to protect and ** law for grateful purpose, the *** beans authority, and

This has shown that, before the advent of the "oil Boom", the major foreign exchange earner for Nigeria was the sale of agricultural products, such as cocoa, groundnut, cotton, coffee, rubber, palm oil and soya beans, with an estimated value conservatively put at #9.87 billion to #24.6 billion, between the years 1996-2005 (Nikos, 1977). But it was reported that even though the Federal Government currently derives most of its foreign exchange from petroleum, the earnings from agricultural export could still be much higher, if appropriate and sustained polices are applied to the sector (Dunning, 1990).

In Nigeria the year 1960 -68 marked the period of, agricultural development, to accelerate food production generate foreign and exchange and increase country's balance of trade in the international market, projects were empowered to distribute seed, establish cooperative farmers association and plantation units, provides extension farm centre, introduce modern farming techniques, industries for processing agricultural produce, such as cotton, groundnuts, maize and palm oil. (Mabogunje, 1972) The second period of agricultural development was between the years 1970-1980, was a period of prosperity and oil boom", agricultural development constraints have taken myriad dimensions, ranging from physical/natural problems, such as, lack of incentive, poor return, low yield output, lack of fertilizer. Other problems include erratic rainfall, long unset and short upset of rain draught.

There is also economic problems such as lack of capital and good transport and communication network, very little or no incentive to farmers to produce more, poor marketing/low pricing problems of agricultural produce (Malton &New Man,1978). Social – cultural problems bedevil agricultural productivity, such as the land tenure system and ownership through inheritance and sharing. World Bank, National Fadama Development programmes (NFDP), National Agricultural Technology Support Programme (NATSP).

The main objectives of the Kaduna Agricultural Development Project are: To achieve incremental food and cash crops production through rain fed and dry season agriculture, as well as Livestock, Fisheries and honey production which will increase the income base of the farmers and improve the standard of These reasons compelled the government of Nigeria to come up with solution to address problem of agriculture, the major solution was the establishing of many projects, assisted by the international and sometimes together with local agencies, such as, the National Fadama Development Programme (NFDP),National Agricultural Technology Support Programme(NATSP) Agricultural Development Project in Nigeria which was established in Funtua in 1975, that was, when the present Kaduna State was a part of the former North-central state consisting of Katsina and Zaria province. (Report,1982) (Dahiru, 1979) (Ibrahim, 1981). This project is mainly responsible for the development of agricultural production in Kaduna State with the aim of studying its impact after all these years on the farmer's welfare.

1.2 STATEMENT OF RESEARCH PROBLEM

Agriculture is a very important sector in the economic development of Nigeria. A part from generating revenue it also feeds the population of the country and provide jobs. Implementation of Agricultural development programme are influence by many factors and there are numerous factors in Nigeria that have brought about the establishment of seven KADP's in North western part of Nigeria, out of which the Kaduna agricultural development project is one.

Balogun (1986) studied the developmental strategy of past, present and future KADP's in Nigeria. He found out that they are capital projects that were established with huge amount of money and that are making very small return when compared with the capital invested.

Ajayi (1993) studied Ondo agricultural development project (OADP) evaluation on socio-economic impact show improvement of income among farmers. He also successfully showed there is a structural problem that results in the duplication of responsibilities that has affected the performance of the OADP. While Igbokwe, (2000) and Maharazu (2002) studied relationship between socio-economic variables on adoption of rice by farmers and Soya beans marketing in Kaduna State, revealed that there is communication gap between farmers and extension workers in the KADP, that has effect the expected out put.

Base on the authors findings no body has studied the impact of KADP on the socio-economic well being of farmers in Kaduna state. The study intends to provide answers to the following questions:

1. What are the socio-economic characteristics of the respondents?
2. Have the farmers output increased?
3. Have there being impact through input and adoption of new technology?
4. Have there being a socio-economic impact?

The dearth of information on the project with respect to increase in productivity and income generation at the farm service centers (FSC) constitutes the problem. The farm level data would have facilitated analysis of the impact of the project on production; income generation and distribution of farm inputs and implements**.**

1.3 AIM AND OBJECTIVES

1.3.1 Aim

The main aim of this study is to assess the impact of Kaduna agricultural development project (KADP) on the farmer's socio-economic well-being.

1.3.2 Objectives:

The objectives are:

1. To describe the socio-economic characteristics of the respondents
2. To determine adoption level of new technology input channel introduced to farmers.
3. To assess the pattern of consumption of durable and impact of KADP on income social status and house hold management
4. Determine the resource use efficiency of project beneficiaries and non beneficiaries.

1.4 HYPOTHESIS

Ho1: There is no difference between the social well being of project beneficiaries and non beneficiaries.

Ho2: There is no difference between the economic well being of the project on beneficiaries and non beneficiaries.

1.5 JUSTIFICATION OF THE STUDY

The major challenge facing agricultural development was determining its impact effecting necessary socio-economic changes of the farmers understudy. To evaluate the programme would form the basis of review of its impact on the farmers and would also assist the policy maker design and formulate decision. It is also hoped that the general public can benefit from Kaduna agricultural development project (KADP) activities and its impact. The study will assist in the extension of other projects regarding organization project, by checking its lapses and ameliorating same.

CHAPTER TWO
2.0 LITERATURE REVIEW

2.1 Introduction

This chapter deals with the reviews of the study and arranged under the following:

1.0 Agricultural development and Rural Development

1.1 Factor affecting Agricultural Development in Nigeria

1.2 Impact studies of Agricultural Programme

1.3 Adoption of Improved Technologies

1.4 Socio-Economic Constraints

1.5 The Funtua of Agricultural Project

1.6 Key Features of the New Policy

1.7 Major Content of the New Policy

2.2 Agricultural Development and Rural Development.

There are different types of developments such as rural development, urban development industrial development agricultural development, social development and so on.

(Seers, 1977) classified development as follows:

- Development as Urbanization Process: Identified the transformation fro rural to urban welfare changing the socio-economic well being of the rural populace to urban system.
- Development in socialization process: Through educating the farmers and introduction of new farming techniques uplifting their socio-economic status and stand of living.

- Development as modernization process: Transforming the housing and life style, provision of modern school, provision of rural infrastructural facilities such as rural feeder roads, tarred roads, soils and so on.
- Development as socio-economic process: This brings about not only social change but economic that would have impacted o the social welfare of our rural populace, through the provision of employment opportunities, poverty alleviation, acquisition of durables, improving the standard of living of the people
- Development as distributive justice: Whether the rural sector is given proper attention to arrest rural-urban drift: whether all person have equal right to access credit loans to trade and partake in agricultural production

Therefore rural development is a series of qualitative and quantitative changes occurring among a given rural populace and whose covering effects indicate a time, a rise in the standard of living and favourable changes in the way of the people concerned (Mabogunje, 1980) (Abubakar, 1981)

Rural development is meant to cater for rural welfare of the rural-agrarian sector. Some scholars view rural development to mean agricultural development; while others saw it differently, because agriculture provide employment to rural communities, improve their socio-economic status, whereas, development provide rural welfare towards self reliance, through improved agricultural development programmes, to enhance the productive capacity of the rural farmers, by actively mobilizing them, through programmes, such as the mass mobilization, socio-economic recovery (MAMSER) and the directorate of food, feeder rural roads infrastructure (DFFRRI) of the 1990's which was meant to structure the economy through second tier foreign exchange market (SFEM) that later transformed to the structural adjustment,

programmes (SAP), through the IMF world bank fiscal policy instrument at that time (Attah,1993). According to (Adedeji, 1993) rural development strategies were put in place by the world Bank in 1975 to: improve the quality of lives of rural dwellers, generate income, employment, food, shelter, education, and improved health care service. With laudable programmes as: Operation Feed the Nation (OFN) and the Green revolution (GR) they were geared to increase in food production to salt reliance.

2.3 Factors Affecting Agricultural Development Problems in Nigeria

Implementations of Agricultural Programmes are Influence by different factors. (Connelly, 2004) Classified the negative factors (problem) into four categories:

1. External
2. Internal management
3. Institutional development
4. Field implementation

According to Amalu, (1998) institutional problems are weak institutional framework for research-extension farmer linkage, high frequency labour mobility and limited involvement of input agencies in the institutional linkage strategy. (Balogun,1986) stressed that there is the duplication of responsibilities amongst staff, lack of accountability, and information sharing, with irregularities and weak financial control and audit as the institutional problems.

The external problems: are mainly dwindling funding policies and counterpart funding, informal management problems including bureaucratic inertia of civil servants. Patrimonial and arbitrariness exhibited by management where operational arrangement are overturned without prior notice and resources personalized to the detriment of the organization, the misuse of authority and facilities by management staff (Antonis,1992).

Field implementation problems (Balogun,1986) further observed that the period of 1960-1995, many agricultural programs with different nomenclature, organizational structure and advisory procedures emerged; but up till date, these laudable programmes, has not narrowed the gap that exist, but rather than that widened the imbalance. He stressed that the persistent agricultural programmes failure in Nigeria, in the ability of the several administration in Nigeria to solve the basic fundamental problem of agricultural development. However, inadequate programme development and planning according to (Eboh, 1995) are detriment to the success of programme implementation and achievement of the programme objectives. He reviewed that lack of adequate planning and continual evaluation was a major reason for the frequent failure of extension projects and programmes.

(Madukwe, 1996) attributed the failure and persistent stagnation of agriculture in Nigeria to the characteristic nature of the most policies and inherent contradictions between policy formulation and implementation. However necessary assumptions for project success may include the need for output such as building of relation between project sponsors, establishing or strengthen the arrangement which are required for wider coalition of support that would enhance the capacity of primary-stakeholder (including women) participate more effectively.

Observation of agricultural extension by Madukwe and Anyawu (2000) revealed that the challenges facing Nigeria is the re-organization of policies and programmes that would improve extension performance and improve agricultural productivity.

Cristovao and Portela (1997) indentified poor and irregular budgetary allocation the bane constraint hindering the effective performance of agricultural extension in Nigeria: This problem is accentuated by the issues of extension finance budget that is relatively less researched and poorly understood in Nigeria. Introduction of improved technologies in the rural farming

communities have high risk of failure, than those built around the knowledge, skills capacities and techniques already in existence. The ADPs have performed appreciably well in terms of spreading scientific knowledge, increase in the level of adoption of improved recommended practices increase in food production and income level of small scale farmers. But the improvement in income of the farmers, however, does not appear to have been truly translated into improvement in the purchasing power of the farmers due to inflation (CBN 2005)

2.4 Impact Studies of Previous Agricultural Development Project (ADPs)

According to Funtua and Gusau approach report the broad objective of the ADP in to raise productivity in food and industrial raw material, to supply Nigeria expanding population with food, clothing and shelter, to reduce rural-urban migration (Ingawa,1992) (Idabacha,1980) noted that the ADP did not fully integrate because of marketing and storage problems. The Funtua ADP made no plan to participate directly in marketing food crops and they were hostile to existing traditional marketing systems. Consequently many farmers could not sell their produce because of poor marketing channel, and the dissolution of marketing board exacerbated the already worsened marketing system.

2.5 Adoption of Improved Agricultural Technologies

The application of technology for the promotion and development of agriculture is necessary to raise the production capacity of small scale and large scale farmers. (Bennett, 1990). There are four agricultural technologies that feature prominently in the development of agriculture; to create agricultural wealth, facilitate social control, effect decision making to achieve social change and counter alienation. The technologies applied are agro chemical,

fertilizers, insecticides aid pesticides/herbicides as this will assuage and assist farmers, using improved seedlings that are made available to farmers through ADP (Igbokwe, 2000).

Tologbonse and Adekunle (2000) in their studies revealed that some of the determinants found to influence adoption positively and significantly are income realized, education and farming experience and that age, gender and marital situation are negatively related to adoption. Anyawu and Musa, (2001) noted that extension agents are the major source of awareness of recommended crop production practices, that there is negative correlation between age and adoption, and positive correlation between adoption and household size, farm size and extension contact (Obinne and Nnamah, 1999) Stressed the greatest constraint to adoption of technologies include lack of capital lack of awareness, lack of input, high cost and old age, where as income, house hold size and education favor adoption of livestock and bee keeping innovation.

2.6 Socio-Economic Constraints

Land Scarcity: A very often area where the land area is small farming is limited to the fertile section and output tended to be low. In smaller countries such as Solomon Islands, Papua New Guinea, the land is usually threatened by flooding and a time the rugged topography is a limitation to agricultural pursuit.

Labour Shortages: In the islands of Fiji and Philippines labour inputs for most crops are usually high in the sub-region with 200-250 days/ha in Fiji and 100-200 day/ha in Papua New Guinea.

Inadequate Capital: For large scale production of cereal crops such as maize purchase of planting materials (inputs) require substantial capital, with most crops grown for family consumption and surplus for sale; for greater production substantial capital would be required.

Accessing capital through the agricultural cooperative banks require collateral which the farmers do not have to secure soft Agricultural loan, even through their cooperative society only the progressive farmers are given attention.

2.7 Agricultural Development Project (ADP) Funtua

The Funtua project was set up in 1975 by the then Federal Military Government (FMG) in collaboration with the World Bank body the international monetary Fund (IMF). It was first called Funtua Agricultural Integrated Development and later renamed Agricultural Development Project (ADP) Funtua. The initial expenditure of the project was N36 million over the 1975-80 investment periods: for which 51% was contributed by the World Bank; while the remaining 49% was contributed by the North Central state (Katsina and Zaria provinces), this later re-named old Kaduna state.

The Funtua agricultural project was located at Tudun Iya Kaduna state covering 7590km about 10% of the state area. The Funtua Agricultural Project have farm service centers (FSC) for the distribution of farm inputs, implements and provision of extension services; with the assistances of Agricultural Extension Research Services (AERS) of the Ahmadu Bello University (ABU) Samaru Zaria. The project covered five districts of Maska, Faskari Dandume Malumfashi and Tudun Iya in the then Malumfashi local government area of the former Kaduna State. The project was a world bank financed, with the main aim of improving the standard of living, eradicating poverty, creating employment opportunities, averting rural-urban drift, income generation, wealth creation, agricultural development and rural development, this have been articulated in an integrated approach comprising different programmes, such as agricultural production, healthcare, preventive rather than curative health measures through the investments

in rural non-farming activities of adult education and training, water supply, rural road and storage facilities (Maton,1977).

(Olatunbosun, 1976) noted that the project should have been planned and implemented in an integrated approach to facilitate rural integration through agricultural development.

The Funtua project was not a profit making venture, but aimed at uplifting the socio-economic states of the rural populace as defined by the United Nations, that rural development is the out come of socio-economic qualitative agricultural change occurring amongst a given rural population, whose convergence affect individual standard of living and favorably changing the way of life of the rural farmers concerned. (Adebayo, 2004).

Thus the transformation of rural society is strongly related to the ability of that society to effectively adopt relevant innovation and technology. Hiring of tractors was jointly ventured with the State Ministry of Agriculture and Natural Resource (MANR), but did not last long due to lack of maintenance and the unwillingness of the non-progressive farmers to hire due to lack of money. However, the project regulates farmers output to control over productivity and regulate glut, deflation and lower prices of agricultural crops: fertilizer, insecticides and spraying machines are purchased at a subsidized rate from the project, and OX- Plough hired to the farmers. The long history of this project as a litmus test was adopted by other states; indeed the creation of new Kaduna state from the former old Kaduna state in 1987 hastened the transformation of rural society through effective adoption of relevant innovation technologies.

2.8 THE NEW AGRICULTURAL POLICY DOCUMENT

The previous agricultural policy document was finalized in 1988 and was supposed to remain operative until the year 2000. Hence, in year 2001, a new policy document was launched.

The new policy document bears most of the features of the old one, but with more focused direction and better articulation (Olayide, 1980).

Objectives of New Agricultural Policy: In a broad sense, the objectives of the new agricultural policy (as stated in the document) are very similar to those of the old one. They include:(I) The achievement of self-sufficiency in basic food supply and the attainment of food security;(ii) Increased production of agricultural raw materials for industries;(iii) Increased production and processing of export crops, using improved production and processing technologies; (iv) Generating gainful employment; (v) Rational utilization of agricultural resources, improved protection of agricultural land resources from drought, desert encroachment, soil erosion, flood, and the general preservation of the environment for the sustainability of agricultural production; (vi) Promotion of the increased application of modern technology to agricultural production; and, (vii) Improvement in the quality of life of rural dwellers. (Stohr & Taylor, 1981).

Key Features of the New Policy: The key features of the new policy are as follows; Evolution of strategies that will ensure self-sufficiency, and improvement in the level of technical and economic efficiency in food production. This is to be achieved through (i) the introduction and adoption of improved seedlings, (ii) adoption of improved husbandry and appropriate machinery and equipment, (iii) efficient utilization of resources, (iv) encouragement of ecological specialization, and (v) recognition of the roles and potentials of small -scale farmers as the major producers of food in the country. Reduction of risks and uncertainties in agriculture, to be achieved through the introduction of a more comprehensive agricultural insurance scheme to reduce the natural hazard factor militating against agricultural production and security of investment. A nationwide, unified and all-inclusive extension delivery system, under the Agricultural Development Programs (ADPs) has assisted rural farmers. It has promoted agro-

allied industry, to strengthen the linkage effect of agriculture on the economy. Provision of such facilities and incentives as rural infrastructure, rural banking, primary health care, cottage industries etc, to encourage agricultural and rural development and attract youths (including school leavers) to go back to the land.(Akpoko,2007).

Major Content of the Policy Framework: The policies cover issues on (i) agricultural resources (land, labor, capital, seeds, fertilizer, etc) whose supply and prices affect the profitability of agricultural business, (ii) crops, livestock, fisheries and agro-forestry production, (iii) pest control, (iv) mechanization, (v) water resources and irrigation, (vi) rural infrastructure, (vii) agricultural extension and technology transfer, (viii) research and development (R&D), (ix) agricultural commodity storage, processing and marketing, (x) credit supply, (xi) insurance, (xii) agricultural cooperatives, (xiii) training and manpower development, and (xiv) agricultural statistics and information management. FAO,(1997).

The successful implementation of the agricultural policy is, however, contingent upon the existence of appropriate macroeconomic policies that provide the enabling environment for agriculture to grow in equilibrium with other sectors. They affect profitability of agricultural enterprises and the welfare of farmers through their effects on the flow of credit and investment funds, taxes, tariffs, subsidies, budgetary allocation, etc. Erinle,(1990)

2.9 THEORETICAL FRAMEWORK

The focus is guided by the classical adoption and diffusion of innovation theory. This theory is also called the diffusion innovation decision process.

The basic geographic elements incorporated in any given region is the factor of distance, direction and spatial variation that determine the extent of diffusion of innovation, which by definition is a spatial process that is dynamic and generate changes in human societies. The rate and speed at which an idea spread depends on its strength and how intact the social system. Ekong,(2005).

The aim of this research is to analyze the impact of the Kaduna agriculture development project (KADP) on the socio-economic well-being of farmers in Lere-Local Government of Kaduna state. The aim is to create innovation and access the agricultural extension services provided by the KADP on rural farming communities in Lere local government area. According to (Everson, 1996)(Compton,1984) agricultural extension effectiveness can be measured by using the conceptual theme sequence known as awareness, farmers ,adoption productivity (AKAP). (A=farmers awareness, K=farmers knowledge through factoring and experimenting, A=farmers adoption of technology or practices P=changes in farmers productivity or output).

However, it should be noted that knowledge requires awareness experiences observation and the critical ability to evaluate data and evidence. Knowledge Leeds to adoption, but will not necessarily lead to productivity which depends on adoption of technically efficient improved technology and existing support infrastructure of the community and market. This AKAP relates the Hagastrard's theory of the spatial diffusion of innovation. (Ganpat and Seepersad, 1996) opined that for a successful adaptor of any new technology, farmers must not only know about it, but must be able to follow the recommendations given.

Farmers are encountered with the logical problem solving process, known as adoption process when considering any new technology or innovation. (Ekong, 1988) asserts that adoption process is a socio-psychological decision making process that an individual goes through in accepting or rejecting new practices. It all begins as a mental process often re-enforced by other emotional or circumstances and it is termed innovation decision process.

According to (Rogers, 1995) van den ban and hawkin (1996) the five stages widely accepted in the process of adoption include awareness, interest, evaluation, trial and adoption (AIETA). Awareness is the first stage and involves the individual but has little knowledge about it. Interest stage is the second stage during which individuals develops interest in the innovation and then gets more facts about. Evaluation of the innovation facts are placed when the individuals mentally tries it, weights its much relative to his own situation and considers it applicability to the solution of his own particular problem. Trial is a stage during which the individual actually applies or practices the innovation on a small scale and deals with the resultant problem of its usage. Adoption is the last main stage of the adoption process during which the adoption unit tends to use the innovation continuously based on positive experience at the trial stage.

(Rogers, 1995) Presented four additional adoptions of diffusion theories to include:
Innovation decision process theory: This states that the potential adopters of a technology progress over time through five stages in the diffusion process. First they must learn about the innovation (knowledge) second, they must be persuaded of the value of innovation (persuasion) they then must decide to adopt it (decision), the innovation must then be implemented (implementation) and finally, the decision must be re-affirmed or rejected (confirmation) the focus is on the user or adaptor

Individuals innovation theory: States that individuals who are risk takers or otherwise innovative will adopt an innovation earlier on the continuum of adoption/diffusion.

Rate of adoption theory: States that diffusion takes place over time with innovation going through a slow gradual growth period followed by dramatic and rapid growth and then gradual stabilization and finally a decline.

Perceived attribute theory: States that there are five attributes upon which an innovation is judged, that it can be tried out (trial ability) that results can be observed (observability) that it has an average over other innovations or the present circumstances (relative advantages) that it is not overly complex to learn or are (complexity) that it fits in or is compatible with the circumstances into which it will be adopted (compatibility)

(Moore, 1991) noted that the traditional adoption/diffusion continuum recognizes five categories of participants

1. Innovators who tend to be experimental and highly interested in technologies
2. Early adopters who may be technically sophisticated and interested in technology for solving professional and academic problems
3. Early majority who are pragmatics and constitute the fewest part of the main stream
4. Late majority who are less comfortable with technology and are the skeptical second half of the mainstream
5. Laggard who may never adopt technology and may be antagonistic and critic of its use by others.

The distributions of these groups within an adopter population typically follow the familiar spiral well-shaped curve. (Ekong, 1988) affirmed that there is no formal studies

yet been done in Nigeria to categorize farmers or other adopters on the basis of their innovations

Theoretical Model

Developing a model of this magnitude is an attempt to interpret the theories and findings of various experts. Hays (1965), Williams (1984) Mbawonku (1986) Ogunbameru (1986) that impact is the outcome of an input on the target project of beneficiaries following from and attributable to the project (UNO, 1984)

The inputs provided in the agricultural extension programme/project bring abstract changes mainly an increase in the income of the participants, better standard of living, literacy and good attitude to farming. These constitute output resulting from the inputs of the programmers measured on impact (Mbawonku,1986). Several investigators considered the impact of agricultural extension programme as the improvement in food production, farm income and employment in the programme areas through effective technology and practices (Obi china and Oti, 1985) hence any evaluation of an agricultural question whether the socio economic conditions including standard of living of the target group have significantly changed as a result of the project activity. According to (Mbawonku, 1986) (Ajayi,1996) (Okeh, 2008) the impact of an agricultural extension project on the socio-economic activities of the entire farm families in the project area could be evaluated using the following indicators project input (IP), Project output (PO) Project-effects (PE), Project impacts (PIM) and project beneficiaries (PB)

Mbawonku (1986) conceptual frame work showed that a base-link survey area carried out to discover the needs of the area and set of achievable objectives were developed. To achieve these objectives the project management came up with certain input. The impact of the project on

the beneficiaries was a function of the degree of their participation in the designing and implementation of the project. To measure the impact of the project on the beneficiaries, the socio-economic condition of the target group before and after the introduction of the project should be compared.

Mbawonku (1986) found out that on of the major connectional areas in project-evaluation in the comparative measurement of the effect of the project in the determination of the cause and effect relation. Furthermore, one way of measuring the effectiveness of the project input delivery system is to compare the achievement of the project's input delivery system with the non project area achievement. If the project input delivery performs better, it is regarded as been more effective than the non project area or vice verse.

Performance index (PI) is symbolically given as

$$PI = \frac{Actual}{Expected} \times \frac{100}{1} \; or \; \frac{Achievement}{Target} \times \frac{100}{1}$$

More so, in comparison before and after, participant and non-participant design survey was adopted as this requires fewer resources per programme participant. Survey in programme evaluating according to (Hays, 1965) may compare extension clientele and non clientele within higher levels at one point in time and the achievement of programme objectives.

According to Ogunbameru (1986) a more simplified and complete approach to the studying the effectiveness of agricultural extension programmed in the reflective evidence to appraise programme (REAP). This model is a package mix of harvesting information on the effectiveness of Extension work and on reflective evidence of project results. Reflective evidence means that the project participant estimate or reflect upon the amount of change or pay off brought about through a project. A major attribute to REAP model is its adaptability to a

wide variety of agricultural extension programme. Its focus is on how much positive or negative pay off they have experienced from applying what they have learned or gained.

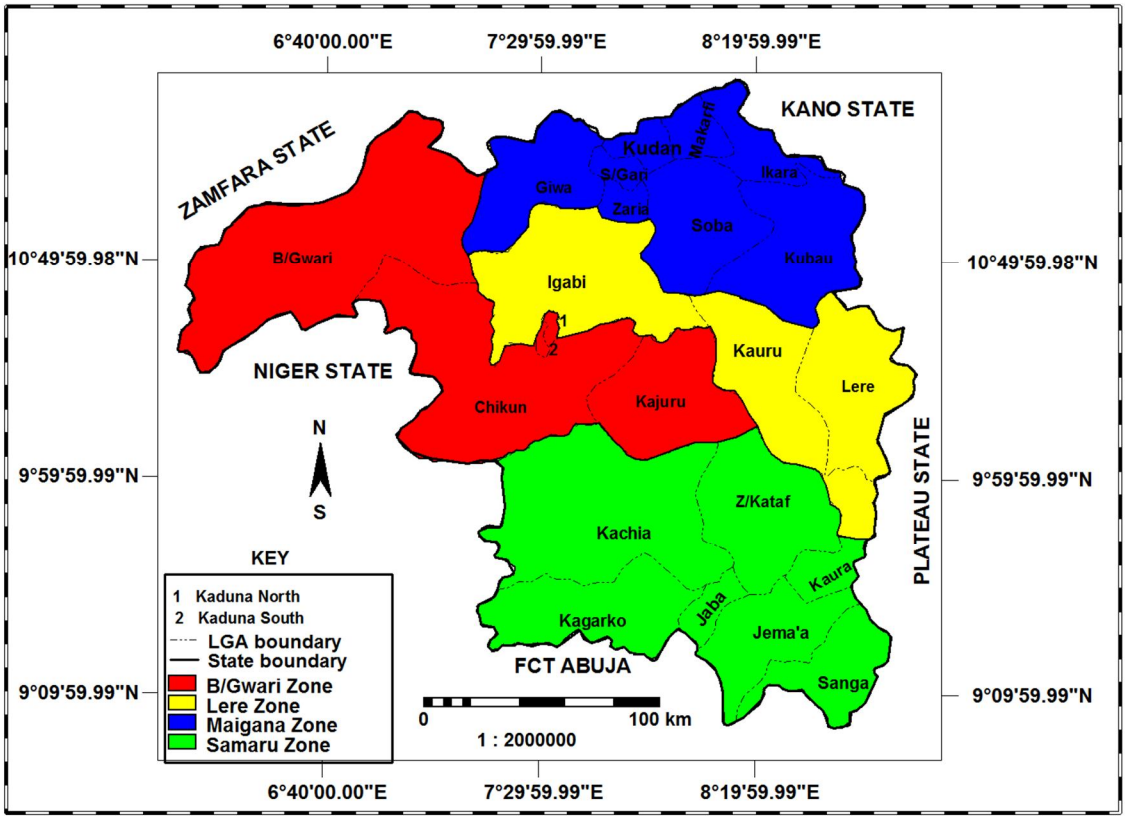
For the purpose of this study a combination of project input, output effect, and impact the participants and non participant before and after models were used to generate a frame work.

CHAPTER THREE

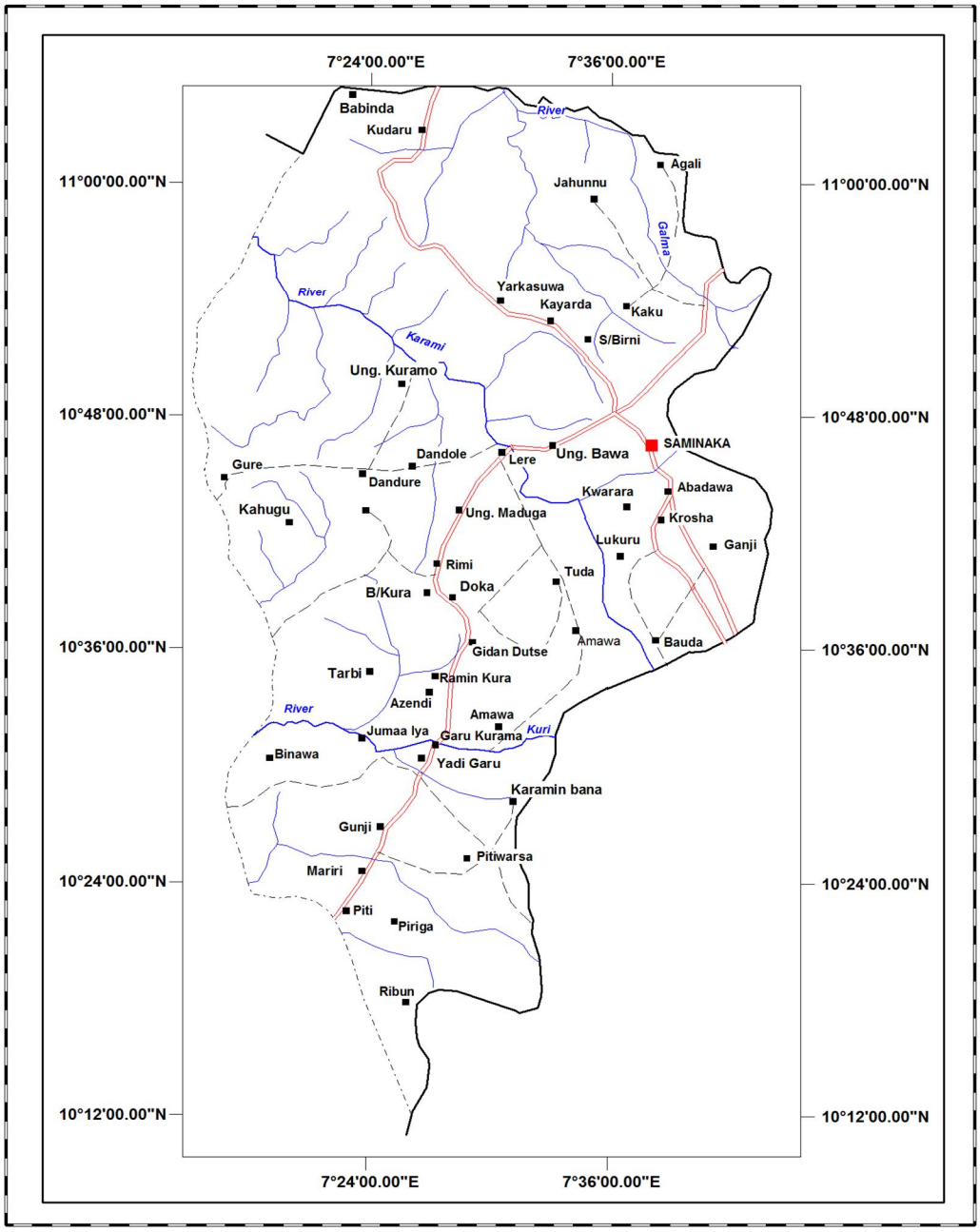
3.0 METHODOLOGY

3.1 STUDY AREA

The Kaduna agricultural development project Lere Zone with its headquarters at Sabon Birni Saminaka Lere local government area, is located at latitude 11°00 North and 10°48North Northern limit and west longitude 8°30́ east and 7°36́ east and accessible by roads that covers an area of 5960km^2. (See map 2).



MAP 1: The Kaduna Agricultural Project Zones.



Map 2: Location of Lere Local Government Area.

This section deals with the methodology adopted for the research work. The choice of methodology is guided by the desire to attain the objectives of the study. The study focused on the agricultural production by farmers in Lere Local Government Area of Kaduna State emphasis will be placed on assessing the impact of the ADP on the farming activities and socio-economic

wellbeing of the farmers. This section, therefore focused on the selection of the population size to be used for the study, methods of data collection and techniques for data analysis

3.2 PHYSICAL FEATURES AND DRAINAGE PATTERN

Lere Local Government lies at an altitude of about 700m above sea level, it is next door to the Jos plateau in the central Nigeria, it lies to the southern highlands on a crystalline basement rock, that is dissected by many patches of Inselbergs a common soil formation and sprout during the rainy season, grain is a beautiful scenery of new foliage flowers and dense vegetation cover, providing pasture to grazing Fulani Cattle. There are sometimes huge trees with long tap roots, reaching the basement of water table, as such the trunk stored large quantity of water; most of these trees are called "Doka" hence the name coined "Dokan Lere", because of this trees; Doka' scientific name is Tsoberlina that can be as high as 30 metric meters.

3.2.1 Climate

The climate is of tropical continental, with daily temperatures as high as 30^{o}c in July and September of 40^{o}c in April and May.

The main daily temperature ranges from 15^{o}c in December and February and about 27^{o}c in April and June. The sunshine ranges about 6hours in June to about 9hours in October.

Radiation is evenly spread year in year out from 12.1mm in August to 17.5mm in March, with most rainfall of convectional nature due to cooling and heating effect, usually around 5pm in the evenings running into the next day, for several hours of more than 24hours, a times accompanied by high lightning and thunderstorm. It ranges from 2.8mm in July and September to about 16.2mm in March, with the highest temperature/evaporation around March/April.

The area witness a humid tropical conditions that ranges from about 15 % in March to about 70% in September. Due to global warming and consequent climate change, there has been

a sudden adjustment in rainy season recently, coming late and terminating late. It is noticed that the first rains that usually recorded in April, now extends to May and terminates in October instead of September, with humidity of 70% instead of 40%. Monthly rainfall ranges 0.0mm in December through January to February 0.2mm and November, to July of about 350mm.

3.2.2 Soil and Vegetation

This area is within the Guinea savanna zone, the soils in Saminaka and indeed Lere Local Government is of tropical leached humus, fined grained, and that is sometimes quartz, suitable for the cultivation of grains. The seasonal rainfall and rain wash of weathered rocky materials that are deposited at the top layer soil profile Horizon A, that is over laid the upper zone, with decayed leaves and animal/human waste. The process of Alleviation and Eluviations in the soil profile helps in cementing the soil and transportation of Minerals ions. The soil is acidic as inferred by the greater application of manures yearly.

The guinea savanna vegetation is characterized by deciduous trees that shed their leaves in dry season, that help cottage industry of; pottery, dyeing, food processing, weaving, firewood e.t.c that existed for over a century. Families that specialized in this trade are well known and skills are passed on through generations; well organized and trading with other villages and outside the locality undertaken with the farmers more progressive, adopted modern processing machines and hybrid crops.

The major crops cultivated are: maize, millet, sorghum, groundnut, beans, sweet potatoes, water melon, and rice, with Poultry, livestock's forestry, fishing and bee keeping..

3.2.3 Physical Farming Problems

- Crops cultivation is dependent on the land and the atmospheric conditions. Rainfall is necessary to plants growth, its shortage for a long period of time causes drought, which affect yield, seen as a disaster to farmers. Excessive rain causes destruction of crops, by soil top rain wash that contains valuable plants nutrients. Steep slopes, help also in the washing away of the top soil, down the slope and below the reach of the plants. The combination of all these threaten the survival of millions of people, in the area that are so affected. The production of most crops is only limited to seasons. Disease and pest are two of the greatest problems of agriculture that hamper high productivity. Insects such as locust attack the leaves of plants, while diseases like black pod and rosette attack that destroy cocoa and groundnuts respectively.

3.3 Human Background

3.3.1 Historical background. The Lere Local Government area mostly Hausa/Fulani descent, although there are minority tribes, like Chawai, that is now part of Kauru local government. Lere local government subdivided into chiefdoms with second class chiefs and traditional councils. Originally they were under Zazzau Emirate, under the then Zaria Local Authority. The creation of additional Local Governments in 1998 and location of headquarters at Saminaka businesses grew as a result of road transportation and trading activities.

The area is becoming a cosmopolitan town, due to influx migrants from different tribes' culture/religious persuasion. The area is mainly agricultural with moderately nucleated settlement pattern in Saminaka area; in fact high agricultural productivity is recorded in Dan Alhajin Gabas, and extended family patterning system is noted with compounds belongings to the family members, sharing common entrance and tilling family land, a times houses are walled

in the rural areas of Kudaru, Kayarda, Piriga and some use temporary fence/thatched or tree stalked fence. There are round huts that are peculiar to the northern morphology housing schemes; usually the household head stays at the rounded huts entrance to the main house with friends and associates. There are lot of changes happening recently, due to modernization and neighborhood effect. The villages are divided into wards, which form a section culturally defined by groups of extended families and clans with a head called "Mai Anguwa" that reports to the village District head and have their councils that reports to the second class chiefdom of Lere or Saminaka. There is no clear cut definition of what constitute a village, it could be linear or scattered, and it all depends on the population of the inhabitants. A linear form of settlements may evolved along major roads, when the hamlets are deserted and moved to reap economic opportunity due to accessibility provided by transportation.

3.3.2 The Economy

Agriculture is the major source of income to the study area. As noted earlier maize is of commercial value to flour mills, Breweries and Cadbury limited for human consumption. It also provides livestock feeds and fish feeds features of the North-central Nigeria. The area is lowland fertile agricultural land that is dissected by the major Kaduna River that took its source from the Jos plateau. The Saminaka area is notable for big business, in fact most of the agricultural produced are traded and transported outside this area. There are smaller rivers of Saminaka that is dammed to provide portable water and river Kobara that passes Lere village. They are used and dry season irrigation that aided the production of market gardening cropping and augment in alleviating the socio-economic status of the farmers, before the arrival of next rainy season.

The relief is relatively flat, to allow the rearing of livestock's and poultry farming, here women participation is remarkably noted, providing fried chicken to travelers. It is estimated that about five thousand or more (5000+) chicken are slaughtered daily, that are sold along the major Saminaka-Jos road. The major crops grown are: maize, millet, sorghum, hunger rice (Accha), groundnuts, cowpea, beans, soya beans, water melon e.t.c. Maize is the major crop grown and is believed that this area alone could feed the whole nation. In this area under study there are billionaire farmers, who took farming as big business, middle and small scale farmers also thrive, but the bulk of the farm produce is from the small scale farmers, providing farm labor, communal labor and capital either from their household members or through loans offered by the coming of the project only to at subsistence levels using crude implements.

3.3.3 Agricultural Method and Practices

A forest is cleared to give way for agricultural practice, which is made easier during the dry seasons of November to March, so as to allow easy burn; grassy areas are easily worked, where as the forested area is a times costly cleared.

At the onset of the early rains, ridging starts, followed by planting; a times yams are not cropped parse, but mounds abound, this is to allow free drainage and the yams are bigger than the ones planted on ridges. Using the stalks of the leaves to fallow and grow better, that is turned into ropes and canes. Cassava is grown in the home compounds, by women and the elderly. Some allow the land to rest (fallow) having worked for three or four years, a times weeding takes place much earlier, though chemicals are used to destroy the weeds, but may be expensive to farmers and prefer to hoe, using crude implements and hand to clear the land weeds. Application of fertilizers follows weeding, most a time people use natural manure than chemical fertilizer,

but the progressive farmers can not do without it. The clearing of virgin land coupled with shifting cultivation practiced in the most remote hamlet and villages: created the problem of land expansion, as such, had no alternative than to resort to intensive cultivation, discarding the later from of agricultural practices, consequently, they now adopt the use of fertilizer from the KADP, realizing much output than before the introduction of chemical fertilizers; these resulting problems farmers faced, may lead to low yields, should they refuse to apply fertilizers. The environment impact analysis, succinctly explained that, the soil became saturated with chemicals and immediately diminishing returns set in. there should have been soil analysis to know the missing nutrients and the quantity required to add to the soil, instead of adding NPK year in year out. The problem of rodents and birds is a major impediment the farmers had to contend with. The birds usually migrated from our neighboring Niger Republic do a lot of damage to crops, where as chemicals are spread to killing not only the birds, but locusts and rodents such as: rats, grass cutters, destroy tubers, a time monkeys are dangerous animals too.

a. Harvesting of maize starts from October to December, although: sorghum, yam, cassava, sweet potatoes, mature much earlier than maize; with threading on the farm and bagged for market whilst other are stored in silos or Barns.

b. Very few of the harvested crops are processed except for groundnuts for local consumption, most of it is sold to Cadbury limited, Breweries, Nasco biscuits Jos, flour mills, and Animal feeds e.tc. (Yaker,1993).

Fishing: the local ponds, rivers and streams provide avenue for fishing, to increasing protein intake. This is not taken as a full time business, with the coming of Apiculture by KADP a lot of fish is farmed at home-back yards

Forestry: There is the savanna forest that is bushy and dense. A lot of fire-wood is cut, that is threatening desert encroachment. Government is undertaking serious re- a forestation to maintaining fauna and flora.

Hunting: There are wild animals, but hunting is regulated; small scale local hunters exist as a hobby not for commercial purpose, with some wild lives relocating, due to incessant tree cutting.

Manual Labor: Usually: family members, hired, communal or cooperative societies labor force, are engaged; the use of farmers children relations, both men and women, some are either full-time or part time workers, they may be hired (contract labor) and paid or communal without pay.

Industry: There are few cottage industries of soap making and pomade, weaving, tie and dye, carpet making, carpentry, block making, bakery, chicken friars, painters, builders, tailoring and a host of others.

3.3.4 Trade

Most big businesses are controlled by outsiders mainly the Igbo, Yoruba and other tribes both within and outside the Local Government area. Women participate in Agriculture, they produce Chickens for sale, fried and roasted chicken, which is a brisk business in Saminaka, a huge market outlet for thousands of chicken slaughtered daily. During harvesting and cropping season, there is influx of labor, and traders providing their services, mostly non settlers (Yanci rani), especially from Southern State that temporarily participate and return to: Port Harcourt, Ondo, Oyo and Edo states, traveling almost a thousand kilometers to purchase grains, and also weekly markets, that allow all goods to be displayed at a competitive price.

3.4.0 METHODOLOGY

3.4.1 Source of Information

Primary source of information: A total of three hundred questionnaires were designed to collect information from respondents in the study area. The random sampling method was used to get at respondents because not all of them agreed to be interviewed, very few of them are literate in English and some of the houses or compounds were not numbered.

Both the direct an indirect method of interview were used. In the direct method the researcher plus ten research assistant from KADP administered the questionnaires to respondents in their compounds. The direct method allowed for the questionnaires to be giving to the respondents to take home, only to be returned after one week.

This exercise lasted from October 2008 to January, 2009, so as to have full information on the benefit of KADP on the well being of the farmers. At the end of the exercise one hundred sixty questionnaires were returned and used for the analyses and discussion. Details of the district, population and number of questionnaires administered and returned is presented on table 2. The questionnaires were applied to farmers within the age of 50 – 70 years, because it is believed that they have long experience in farming and can provide solid information.

Districts	Population	Male 18-30yrs	Female 18-30yrs	Males 30-50 yrs	Females 30-50 yrs	Male 50-60yrs	No of questionnaires issued
Lere/Doka	135,000	25,000	2000	20,000	2000	5000	80
Saminaka	165,000	15000	10,000	25000	8000	7000	66
Kudaru	35,000	8000	6000	4000	2000	5000	35
Ang Bawa	19,000	5000	2000	3000	2000	7000	28
D. Alhaji	25,000	7000	6000	4000	2000	6000	28

Sugau	19,250	5000	4250	3000	3000	4000	48
Kayarda	6000	2000	1000	2500	1250	1000	12

Table 1.Distribution of Questionnaires by Gender in Lere Districts

Secondary source of information: The secondary source of information include books, journals, conference proceedings and dissertation. Others include records of KADP and Department of Agriculture in Lere Local Government were used to developed literature and background to study area.

3.4.2 Analytical Tools

Descriptive statistics, Logit regression model and Chi-square were used to analyze the data. Also descriptive statistics which comprised of percentages, means and, frequency counts, were used to achieve objectives 1, 2 and 4.

Procedure for Data Analysis: Descriptive statistical procedure was used for the analysis of the farmers' socio-economic in the local government area. The descriptive technique includes tables of frequency and percentages and in some instances mean and standard deviation.

The Statistical Package for Social Sciences (SPSS) version 15 was used for this study's analysis. The inferential statistical techniques that were used include logistic regression model. Logistic Regression is appropriate when the dependent variable is categorical but where the dependent variable has two levels as observed in the adoption. Logistic regression is a specialized form of regression that is formulated to predict and explain a binary (two-group) categorical variable rather than a metric dependent measure. The form of the logistic regression variate is similar to the variate in multiple regressions. The variate represents a single multivariate relationship with regression like coefficients indicating the relative impact of each predictor variable (xyz). The Logistic regression model was used to achieve objective (3) of the study. Using the Ordinary Least Square model for determining the functional relationship

between the adoption of farming techniques introduced by the ADP on the output and income of the farmers, the same equation could be derived as in ii and iii respectively. (see appendix I attached for detail analyzed results

Model specification

Adoption = $\alpha + \beta_1 X_1 + \beta_2 X_{21} + \beta_3 Q X_3 + \ldots\ldots\ldots\ldots\ldots \beta_n X_{nij}$ (1)

Where α is the constant

β is the coefficient of the respective independent variables (X)

X_1 to X_n represented the socio-economic variables of the farmers.

Output = $\alpha + \beta_1 X_1 + \beta_2 X_{21} + \beta_3 Q X_3 + \ldots\ldots\ldots\ldots\ldots \beta_n X_{nij}$ (2)

Where

β is the coefficient of the respective adoption variables (X)

X_1 to X_n represented the adoption of farming techniques by farmers.

Income = $\alpha + \beta_1 X_1 + \beta_2 X_{21} + \beta_3 Q X_3 + \ldots\ldots\ldots\ldots\ldots \beta_n X_{nij}$ (3)

Where α is the constant

B is the coefficient of the respective adoption variables (X)

X1 to Xn represented the adoption of forming techniques by farmers.

Impact of ADP on 50cm—economic statuses was measured by comparing previous output and income with present output and income after the ADP using the two sample t—test procedure. All tests were performed at the 0.05 probability level of significance.

3.4.3 Operational Definitions and Measurement of Variables

Socio-Demographic Variables

i. Age: The older the farmer get, the less likely he is to depend sorely on farming. This is the overwhelming conclusion arrived at by some scientist (Porter, 1989; Mobley 1988; Rhode, 1983), which were based on studies of age turnover relationship. However, it may be assured that age affects productivity due to decline in speed, agility, strength and coordination or decay over time. In this study, it is assumed that the older the age of a farmer the more likely high economic standing and social status. Age was measured by the total number of years a farmer has attained from the date of birth.

ii. Gender role: This has been defined as the expected behavior of an individual who occupy a particular position of status (Schaefer, 2000). The behavior of the male/female in the household are influenced and sometimes directed by gender consideration (Gordon, 2000). Modern agricultural activity is socially construed, and men are expected to undertake or engage in activities that are masculine specific. Likewise, women are expected to perform or engage in activities that are feminine specific. In this study it is expected that men would participate in agricultural crop production than women because of socio-cultural consideration. Socio – economic well being would be determined by gender role expectation of the respondents. This was measured in terms of the ratio of men to women role performance of respondents.

iii. Dependency ratio: This is the proportion of individuals to the total population, who do not work and depend on other for their livelihood. It was expected that the number of elderly sick

and children in the age bracket of between the months of 1 – 14 years in a household would propel a household head to seek multiple sources of livelihood. Therefore, it is assumed that the higher the ratio the more the heads of household would diversify sources of livelihoods and is measured in terms of percentage of dependents /household.

iv. Household Headship: The position of a breadwinner comes with challenges which an individual must respond by looking for new ways to meet up with the demand of that position (Gordon, 2000). Within the scope of this study it is expected that headship would influence farmers adopt modern agricultural methods so as to increase output generate income accumulate capital and increase their socio-economic status and well-being. (Gordon, 2000).

v. Education: Studies have shown that education contributes to the growth of non-farm economy of villages and small rural towns (Gordon, 2000; Kisella et. tal, 2001). It is linked with higher productivity in trading construction service and manufacturing activities (Gordon, 2000). In this study education is referred to as the formal, informal, informal and non formal training a farmer receives which include primary, secondary, secondary, tertiary as well as special skill acquired in non-formal training institutions like apprenticeship and trade. It is assumed that the higher the education level of the respondents, the more livelihood diversification. This was measured in number of years spent in formal, informal and informal and non-formal training centers.

vi. Household size: A farmer's major task is to provide enough food, security and shelter for his family. Atala (1984) reports that household size is constituted by the summation of the number of wives, children, relatives and dependents living together in the household at the time of any investigation. Therefore, farmers with large household are likely to produce more food to maintain security and stability in the household. It was assumed in this household study, that

family size is positively related to the productive capacity of this rural farmer. Hence, for this study household size is referred to as the total number of people residing within a household (which include wives, children and other relations) who live and eat from the same pot and was measured in terms of the number of people in a household at the time of investigation.

vii. Farm size: Studies by Clark and Akinbode (1968) and Igben (1988), shows that farm size may be one of the determining factors for rural household diversification. Farm size is defined as the total land under cultivation by a farmer. It is expected that the larger the farm size, the less farmers diversify sources of livelihoods. This was measured in terms the total hectares of land under cultivation (ha).

viii. Years of farming: The more years a farmer is engaged in farming the less likely he is to depend on the same land and with many grown up that require land to cultivate is likely to relinquish it to them and acquire another. An experienced farmer might have discovered that farming alone is inadequate to sustain him and his household. So, he is more likely to seek alternative source of livelihood addition to farming (Ellis, 1998); Kisella *et al.;* 2000; Dixon, et. *al,* 1996)

Institutional Variables

i. Accessibility to market: Campbell (2007) observes that the factors encourage or discourages high or low access to markets are complex, the demand of goods and services provided by the market and also supply of goods into the market contribute to wealth creation, income generation, employment capital accumulation. Rural people's linkage with markets is assumed to encourage exchange of ideas and information dissemination. Therefore, market is defined in this study as the place where rural farmers

buy or sell their goods and expected to provide access to socio-economic variables that could uplift their standard of living and well-being.

ii. Credit: Money (cash or kind) obtained by rural farmers from financial organizations such as banks and other non-governmental organization (NGOs) in form of loan or inputs for the purpose of investing in agricultural productivity to produce raw materials for industries, such as poultry and animal feeds. Credit was measured as the amount of cash (Naira value) or kind received from formal and informal/non-formal institutions (such as farm inputs, advice, and training).

iii. Effects: Poverty Reduction

The definition of poverty reduction is derived from the definition which sees it in terms of the opinion of the individual in respect to his own condition, as a situation in which intervention/effects are made by individuals or households to attack or address the chronic effects of poverty such as insufficiency in income, food insecurity, vulnerability, illiteracy, lack of function and capability, social exclusion and lack of resources to meet human and material needs.

CHAPTER FOUR

4.0 DATA PRESENTATION AND DISCUSSIONS

4.1 Introduction

This chapter presents the analysis of the data obtained from the administered questionnaires. The descriptive statistical test includes tables, frequencies, pie-charts, percentages and bar-charts. The questionnaire elicited information from the respondents on the appraisal of the impact of KADP on the socio-economic well being of the people in Lere local government area in Kaduna State.

4.2 Socio – Demographic Characteristics of Respondents

4.2.1. Sex Distribution of Respondents (gender)

This section explained the sex value of the study area and it shows male as major beneficiaries of KADP activities. The summary is resented on the table below.

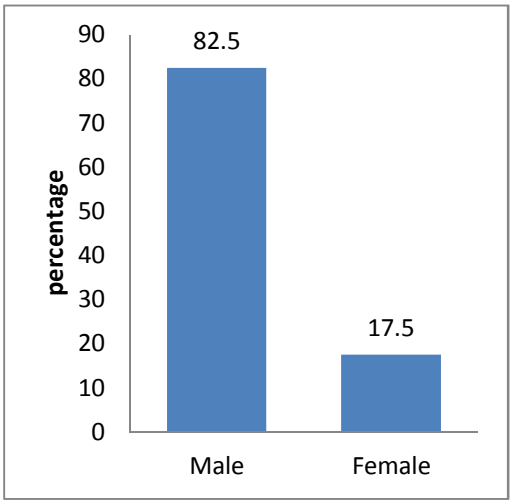


Figure 1: Logit Estimate Percentage Distribution of Respondent by Gender

The findings in Fig 4.1 shows that majority of the respondents are males represented by 82.5% while the remaining 17.5% are females. The result further shows that, in Lere local government area, men involve more in agricultural activities than females. This is not surprising as males in most northern part of the country are solely the breadwinners and work extensively to meet up with challenges within and outside the home.

4.2.2 Respondents by Level of Education

Table 2 shows that those with national diploma have the highest proportion of respondents (41.6%), followed by primary education (16.9%), 4.2% had HND/BSc Degree while others (9.6%) including Arabic, formal and other levels of education.

Table 2: Logit Percentage Distribution of Respondents Educational Level.
Source: Field Survey, 2012.

Respondent	Frequency	Percentage %
No Response	1	.6
Primary	28	16.9
Secondary	20	9.6
ND	69	12.0
HND/Bsc Degree	7	41.6
Arabic	16	4.2
Others	25	15.1
TOTAL	166	100.0

The results in table 2 on respondent's level of education, shows that 41.6% are having at least a secondary and National Diploma. Among the respondents, only an insignificant number 0.6% had no response and 15.1% had other qualifications like Arabic. The level of educational

attainment is further supported with the fact that respondent's with a higher level of education may influence their attitudes towards new modern techniques in agriculture.

However, farmers that are more educated are more likely to use better agricultural practices and bring about self sufficiency in food production and adapt to new technology than their none-educated counterpart.

4. 2. 4 Occupations of Respondents

Table 4 shows the distribution of respondents by occupation, with farmers having the highest portion of 52.4% followed by civil servants and traders (15.7%) respectively, while Artisans (10.8%) and the least were gardeners and other handworks of life.

Table 3: Logit Percentage Distribution of Primary Occupation. Source: Field Survey, 2011.

Respondents	Frequency	Percent
Farmer	87	52.4
Civil Servant	26	15.7
Trading	26	15.7
Artisan	19	10.8
Others	8	5.4
TOTAL	166	100.0

It is obvious that from Table 3, slightly above half (52.4%) are farmers. However, possible explanations could be that, the area is largely a rural set up with enough land for agricultural purpose. The equal distribution of both civil servants and traders (15.7%) are as a result of the few respondents working in the Local Government Secretariat and the few women trading dairy products along the busy road of the Suburb on Saminaka-Zaria road.

4.2.5 Years of Farming Experiences of Respondents

The data presented in table 4 shows the years of farming experience. It shows that majority (52.4%) of the respondents reported more than 10 years of farming experience while 15.1% of them have 2 – 5 years experience, 12.7% had less than 2 years farming experience.

Table 4: Logit Percentage Distribution of Respondent by Years of Farming Experiences *Source: Field Survey, 2011.*

Respondents	Frequency	Percent
No Response	18	10.8
Less than 2 Years	15	9.0
2-5 years	25	15.1
6-10 years	21	12.7
More than 10 Years		
TOTAL	87	52.4
	166	100.0

The result on Fig 4.5 shows various years of farming experience by the farmers in the study area. Experience on farmland by the farmers is good as about 80.2% of the farmers have more than 5years experience on the farmland. Only a few of the total sample (9%) had less than 2years farming experience while 52.4% of the respondents are having more than 10years of farming experience. The drop from 10.8% to 9% is an indication of a short fall from the level of adoption of ADP and a rise to 52.8% much later implies that, there is intensive campaign,

increased services impacted on farming by new seedlings, pesticides, fertilizers, adopting new techniques with marketing of the products.

4.2.6 Secondary Occupation of Respondents

Majority of the respondents (51.8%) engage in farming as secondary occupation, followed by civil servants (16.9%) then, trading and Artisan (13.9% and 10.2%) respectively. Others include gardeners; drivers etc constitute 7.2% (see information in table 5).

Table 6: Logit Estimate of Percentage Distribution of Respondent by Secondary occupation. Source: Field Survey, 2011.

Respondents	Frequency	Percent
Farmer	86	51.8
Civil Servant	28	16.9
Trading	23	13.9
Artisan	17	10.2
Others	12	7.2
TOTAL	166	100.0

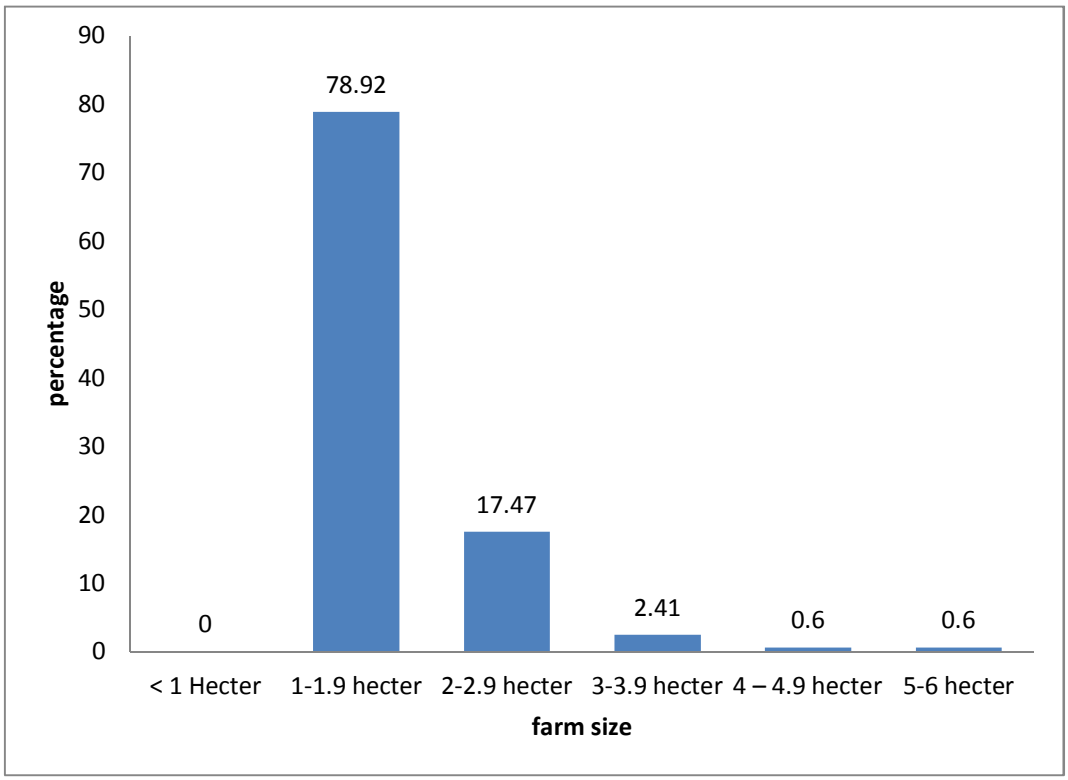
The people are mainly farmers, civil servants and traders. There are also Artisans including drivers, hairdressers, dressmakers and mechanics. Few persons are also found in white collar jobs. Some of the respondents who work in the local government secretariat i.e. civil servants also engage in agricultural activities with the help from ADP to support their respective families. In most towns in Lere, especially in Anguwan -Bawa and Sabon-Birnin, the women participate most in poultry farming especially trading a lot of dairy products such as chickens, eggs, milk, cheese etc while the men involve most in the marketing of the grains generated from the agricultural development projects.

This result also indicates that, it is obvious that most of the respondents benefit from the ADP as they farm most and market their products along the major transport routes.

4.3 Sizes of Farmlands

According to figure 4.2 66.3% of the respondent's posses 1 Hectare of land, followed by 2 hectares possessed by (9.6%), then 6% owned only 1.5 hectares of land. Others were insignificantly represented by various sizes of farmlands.

Figure 4.2: Logit Percentage Distribution of Respondents by farm size. Source: Field Survey, 2012.



The distribution of respondents by size of farmland in Fig 4.2 shows that, all respondents have more than a hectare of land. It is also evident that the actual farm sizes have been fragmented due to inheritance after the demise of household head.

4.4 Distribution of Family Size among Respondents

The distribution of respondents by family size as shown in figure 4.2.8 revealed that 69.88% of the respondents have family size range of one-five, followed by 22.29% with family size of 5-10 while almost 1.9% of the respondents have 10-15 as family size then, the remaining 6.02% of the respondents have above 16 as a family size.

Table 7: Logit Percentage Distribution of Respondent by Family Size Source: Field Survey, 2011.

Respondents	Frequency	Percent
.00	7	4.2
1.00	11	6.6
2.00	37	22.3
3.00	33	19.9
4.00	19	11.4
5.00	9	5.4
6.00	13	7.8
7.00	7	4.2
8.00	11	6.6
9.00	3	1.8
10.00	3	1.8
14.00	1	.6
15.00	2	1.2
16.00	5	3.0
17.00	1	.6
18.00	4	2.4
TOTAL	166	100.0

This also implies that, the more the family size, the more the challenges to meet up within and outside the home. The large family size implies that more labour from households would be more beneficial compared to the fewer size of family.

From table 7, it is evident that only a few (11.4%) never owned land before ADP'S coming while most of the respondents (72.3%) that owned farmlands before the ADP were through inheritance, outright purchase, and gift from father to son among others. However, the 16.3% without response might be due to the fact that, they may be suspicious of the motive of the ADP project, whether government wants to know the farmers wealth to obviate taxation.

4.6 Method of Farmland Acquisition

Figure 4.3 shows that: those respondents who confirmed the acquisition of farmland in the last 4 – 5 years are 62.7% while 37.3% had no farmland in the past 4 – 5 years. Also shown in table 4.4, half of the total respondents i.e., (50%), increased their farmland while the other half did not increase their farmland in the last 4 – 5 years.

Figure 4.3: Logit Percentage Distribution of Respondent's on increase in farmland and farm size in the last 4-5 years.

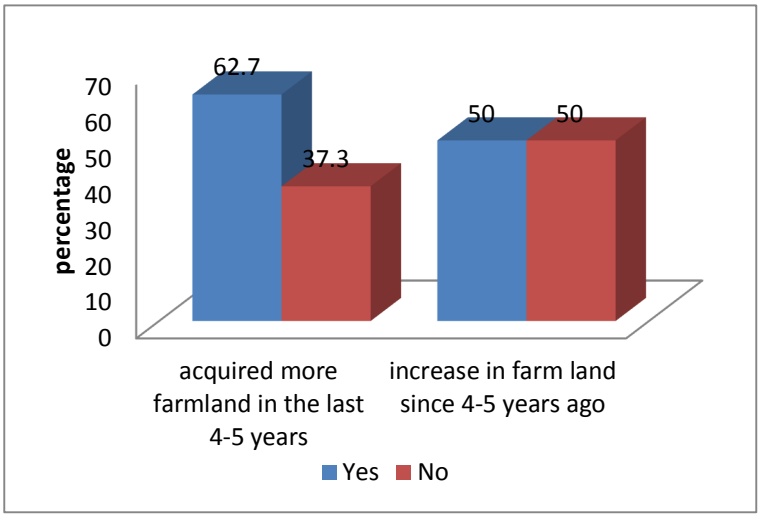


Table 9: Distribution of Respondent's increase in farm land and farm size in the last 4 – 5 years. Source: Field Survey, 2012.

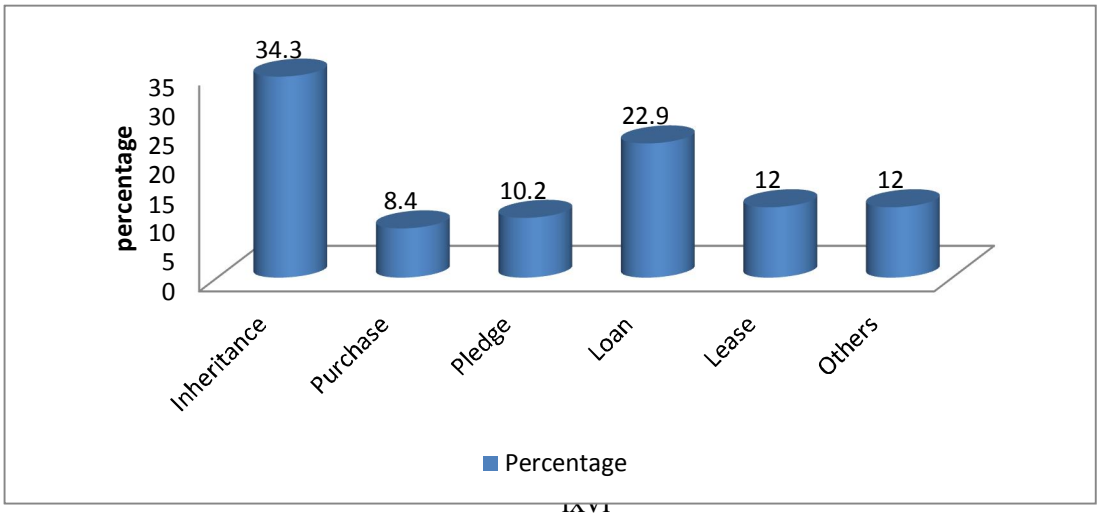
Respondents	Frequency	Percent
Yes	104	62.7
No	62	37.3
TOTAL	166	100.0

Increase in farmland as shown in Fig 4.4, shows that 62.7% of the total respondents confirm that they had acquired farmland in the last four-five years and in all, half of the total respondents also say that their farmland has increased. This result confirms the observation that ADP projects are aimed at services to bring about the best yield in agricultural production and even putting the land in to its best use.

Figure 4.4 shows that majority of the respondents (34.3%) acquire land by inheritance, followed by 22.9% by loan, next is 12% equally acquire through lease and other means. In addition, 10.2% acquire their land by pledge while the remaining 8.4% acquire the land by purchase.

Figure 4.4: Distribution of Respondents by Acquisition of land.

Source: Field Survey, 2011.



The high propor

tion of respondents (34.3%) by inheritance in Fig 4.4 is supported by the fact that according to the Muslim tradition of assets distribution after the demise of the household head, the male child has two shares against the females.

The female girl child sells off her share of inheritance to the male child. Furthermore, the 22.9% of respondents who get loans could be retirees after returning home, pick up farming as a major challenge; some may be assigned with traditional titles and administering their local communities and these may later lead to their purchase of lands as seen by 8.4% (see information on Fig 4.4). More also, those respondents (12%) that acquired land by lease, might have been given by the state government while some farmers give excess land as loans in return of "Galla" or "kashe-muraba".

4.7 Method of Acquisition of Fertilizer

The highest proportion of respondents (59.6%) obtained fertilizer in the market while 28.9% and 7.2% obtained fertilizer supplies both from ADP and political parties respectively then another 4.2 obtain fertilizers direct from market. (Figure 4.12).

Table 10: Logit Percentage Distribution of Respondents by Fertilizer acquisition Source: Field Survey, 2011.

Respondents	Frequency	Percent
ADP	48	28.9
Market	99	59.6
Direct from market	7	4.2
Political Parties	12	7.2
Total	166	100.0

ADP is suppose to be the sole distributor of fertilizers to the farmers but it is now politicized; with farmers resorting to other sources through middle men and politicians. It was found out that majority of the respondents as represented by 59.6% obtain fertilizers from the market while 28.9% from ADP. John, (1986) Argued that the problem of movement of goods and services, indeed the fertilizers to the farmers is also dependent on the major tool i.e. the feeder roads in evacuating the products to the market and raw materials to the industries at Jos, Kafanchan, Kaduna and Lagos.

In addition, there is adoption of fertilizers usage by farmers as identified by (Rivera, 2001) in his work on extensive services that incentives and special inputs package as the necessary impetus to adoption. According to Damachi *et al* (1976), it was noted that the effect of little achievement recorded over the years, was due to nonchalant attitude of farmers to adopt the new farming techniques introduced by the ADP. This has hampered rural integration and development.

However, the NAERL Samaru Zaria provide effective instruments of attitudinal change to farming like through demonstration plots, fertilizer application, the use of chemical and insecticides, drama, incentives and rewards to the best farmers.

4.8 Use of Field Ploughing equipment

Table 10 shows the distribution of respondents by field ploughing. Majority (48.8%) of the respondents plough their field followed by 19.9% who use direct labour, then 17.5% use ox-ploughing while 13.9% use tractors from ADP as a means of ploughing their fields.

Valid	Frequency	Percent	Valid percent	Cumulative percent
Tractor from ADP	23	13.9	13.9	13.9
Ox-plough	29	17.5	17.5	31.
Use Direct Labour	33	19.9	19.9	51.2
Others	81	48.8	48.8	100.0
TOTAL	166	100.0	100.0	

Table 11: Logit Estimate of Percentage Distribution of Respondent by field ploughing Source: Field Survey, 2011.

Table 10, shows the distribution of respondents by field ploughing. It shows that the majority plough their field using other means followed by those using direct labour, then ox-ploughing. In addition, only a few, utilize the tractors from ADP. Majority who used other means of ploughing may involve the use of chemicals to destroy the weeds but on the other hand, may be expensive to farmers. A total of 19.9% of the respondents using direct labour also imply that they may use family members either full or part-time or even paid communally or without pay and may use crude implements such as hoe and cutlass in clearing the land.

4.9 Method of Land Harrowing

According to figure 4.15, majority (60.8%) of the respondents use direct labour to harrow their land while 16.3% uses ox-plough. 13.9% uses tractor from ADP while 8.4% use other means. such as traditional or crude implements like hoe, rake, digger etc to harrow their land.

Valid	Frequency	Percent	Valid percent	Cumulative percent
Tractor from ADP	23	13.9	13.9	13.9
Ox-Plough	27	16.3	16.3	30.1
Use Direct Labour	101	60.8	60.8	91.0
Others	14	8.4	8.4	99.4
5.00	1	.6	.6	100.0
TOTAL	166	100.0	100.0	

Table 12: Logit Estimate of Percentage Distribution of Respondent by Method of Land Harrowing Source: Field Survey, 2011.

Table 11 shows the distribution of respondents by method of land harrowing. It shows that majority (60.8%) of the total respondents use direct labour in harrowing the land since human resources is the necessary tool to harness other resources. For those respondents who used ox-plough, it was either borrowed or hired or personally owned. In all harrowing methods, only a few used other means such as crude implements.

4.10 Distribution and Supplies of Seeds and Chemicals

Figure 4.4 shows that half of the respondents (50.6%) get supply of seeds from the market. 13.9% of the respondents got their seed supplies from ADP while 2.4% got their seeds from other means such as friends/relations, cooperatives, stores among others. In addition, Figure

4.15 also shows that most of the respondents (66.3%) get supplies from the market while 26.5% of the respondents get it from ADP.

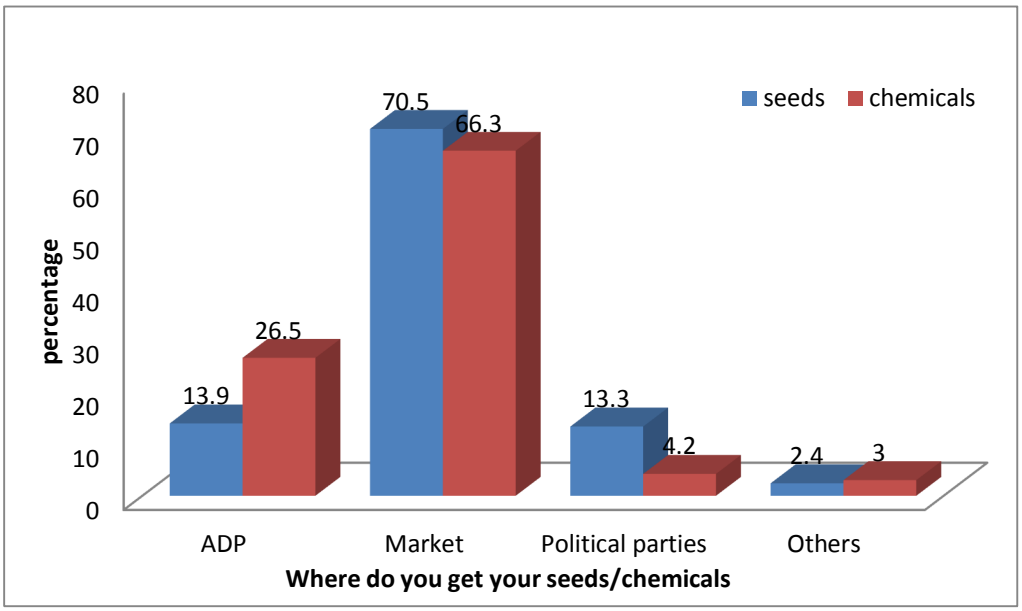


Figure 4.5 Distribution of respondents by supplies of seeds and chemical. Source: Field Survey, 2011.

One of the major content of the policy of agricultural frame work is to cover issues on capital, labour, chemicals, seeds and fertilizer whose supply and prices affect the profitability of agric business. In the same vein Olayide and Idachaba (1980), also suggested the provision of roads and good markets to evacuate goods and distribute inputs at lower price.

Furthermore, increase in production and co-operate social to distribute inputs rather than government agencies at lower cost. The distribution of respondents by supplies of seeds and chemicals is shown in Figure 4.4. A total of 70.5% and 66.3% of respondents' source seeds and chemicals respectively from the markets. However, this high proportion signifies the market as a tool to increase the productive output of farmers and their potential profit. Concerning those respondents who got seeds (13.9%) and fertilizer (26.5%) from ADP implied that their

awareness level is low and may still need the assistance of an ADP extension staff that visits farmers on the spot in their farm to offer suggestions.

4.11 Awareness and Adoption of New Farming Techniques

Valid	Frequency	Percent	Valid percent	Cumulative percent
Yes	108	65.1	65.1	65.1
No	58	34.9	34.9	100.0
TOTAL	166	100.0	100.0	

Table 13: Logit Estimate of Percentage Distribution of awareness and adoption of Farming techniques Source: field Survey, 2012.

From the table 13 above, it shows the distribution of awareness and adoption of new farming techniques. On the whole, among the majority (77.1%) that adopts new farming techniques, about 65.1% use the techniques .while among those respondents who say no (34.9%) only (22.9%) use them. This analysis indicates that the high proportion of awareness shows a positive impact of the attitude of the respondents towards the ADP programme and this can further be supported by the adoption of techniques (see information in Fig 4.16).In adoption of these techniques , it is evident that the respondents mental and practical evaluation is derived by the ADP's assistance thus, adopting the techniques for efficiency in production..

4.12 Farmers Adoption and Utilization of ADP Services

Table 14 shows that 72.9% of the respondents benefited from improved seeds from ADP while 22.9% of them do not benefit from improved seeds from ADP. More also, the beneficiaries of fertilizers directly from ADP by the respondents was 69.9% while 30.1% do not from ADP. Table 13 also shows that, majority (74.7%) benefit from the ADP by the use of irrigation machine while 25.3% do not.72.3% of the respondents utilizes the extension services of ADP while only 27.7% do not.

Valid	**Frequency**	**Percent**	**Valid percent**	**Cumulative percent**
YES	128	77.1	77.1	77.1
NO	38	22.9	22.9	100.0
TOTAL	166	100.0	100.0	

Table 14: Logit Estimate of Percentage Distribution of Farmers awareness of adoption and utilization of ADP services .

Valid	Frequency	Percent	Valid percent	Cumulative percent
YES	121	72.9	72.9	72.9
NO	45	27.1	27.1	
TOTAL	166	100.0	100.0	100.0

Table 15. Logit Estimate Distribution of Improve Seed usage provided by ADP to farmers

Valid	Frequency	Percent	Valid percent	Cumulative percent
YES	116	69.9	69.9	69.9
NO	50	30.1	30.1	100.0
TOTAL	166	100.0		

Table 16: Logit Estimate Distribution of Irrigation Machine by farmers from KADP.

Valid	Frequency	Percent	Valid percent	Cumulative percent
YES	124	74.7	74.7	74.7
NO	42	25.3	25.3	100.0
TOTAL	166	100.0	100.0	

Table 17: Logit Estimate of Percentage Distribution of Extension Services provided farmers by KADP.

Valid	Frequency	Percent	Valid percent	Cumulative percent
YES	120	72.3	72.3	72.3
NO	46	27.7	27.7	100.0
TOTAL	166	100.0	100.0	

Table 18: Logit Estimate of Percentage Distribution of Farmers Awareness of KADP Activities

Valid	Frequency	Percent	Valid percent	Cumulative percent
YES	121	72.9	72.9	72.9
NO	45	27.1	27.1	100.0
TOTAL	166	100.0	100.0	

Table 19: Logit Estimate Percentage Distribution of Beneficiaries of KADP Activities.

Valid	Frequency	Percent	Valid percent	Cumulative percent
NO RESPONSE	39	23.5	23.5	23.5
YES	97	58.4	58.4	81.9
NO	30	18.1	18.1	100.0
TOTAL	166	100.0	100.0	

Table 20: Logit Estimate Percentage of Distribution of Respondents that Received Help from KADP.

Valid	Frequency	Percent	Valid percent	Cumulative percent
No Response	55	33.1	33.1	33.1
YES	66	39.8	39.8	72.9
NO	45	27.1	27.1	100.0

TOTAL	166	100.0	100.0	

Table 21: Logit Estimate percentage of Distribution and Respondent Utilization of Adoption of ADP Services. Source: Field Survey, 2011.

The distribution of respondents by adoption and utilization of ADP services is shown in Table 19. In all services, about 72.9% of the total respondents adopted all the services and are beneficiaries while 39.8% are none-users of these services. From this analysis, it is clear that there is need for more enlightenment and assistance from the ADP staff with a view to improve the none-users.

4.12.1 Benefits of ADP Project to Farmers Lere LGA

To test respondents on their level of awareness on ADP in the study area, the following question was asked "Are you aware of the existence of ADP, in your community? Figure 4.5 shows the distribution of respondents by awareness of ADP. It indicates that 72.9% are aware of the existence of ADP while 27.1% are ignorant of ADP in their community.

58.4% of the total respondents benefit from ADP while 18.1% say they do not benefit and 23.5% have no idea (figure 4.5).From figure 4.18, it is also certain that 39.8% of the respondents have received assistance from ADP while 27.1% do not, it means therefore that the remaining 33% have no idea.

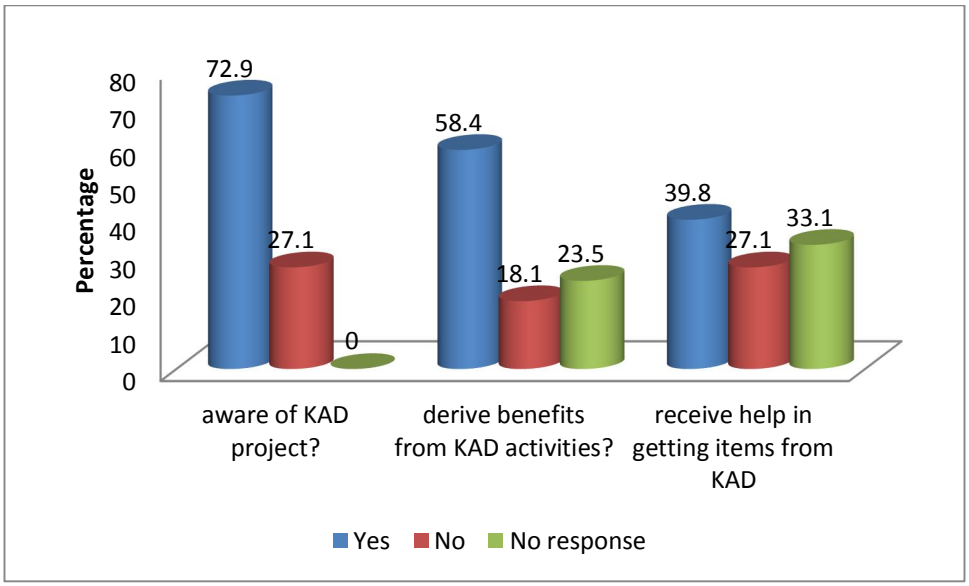


Figure 4.6 Distribution of Respondents by Awareness of ADP Project

Source: Field Survey, 2011.

The high level of awareness of ADP project in Table 4.6 led to the benefits derived and subsequently respondents receiving assistance from the project. However, the sole purpose of ADP is improving the standard of living of the rural farmers; although the progressive farmers are more educated, better dressed and influential in their domain. They generate income and are impacted by the ADP programmes, they acquire loans through cooperative societies and possess cable satellite, computers to access internet and gain more of different farming methods.

4.13 Problems in Purchase of Fertilizer

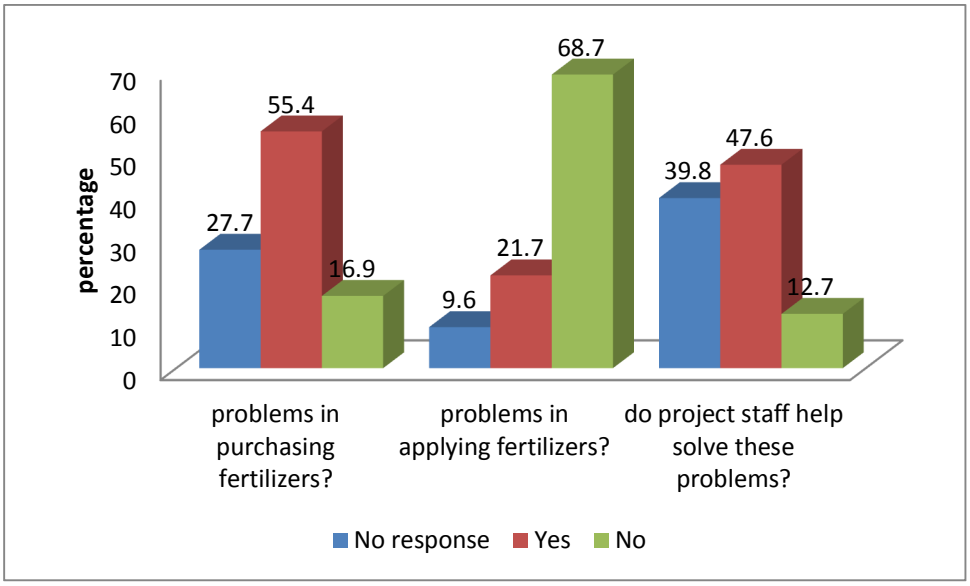


Figure 4.7: Distribution of respondents by problems in purchase and fertilizer applications with solutions from ADP Source: Field Survey, 2011.

The distribution of respondents by problems as presented in 4.7 shows that 55.4% have problems in the purchase of fertilizers while only a few (16.9%) do not. In fertilizer application, 68.7% are comfortable and can apply fertilizers while 47.6% of the respondents reported that, the project staff solves the problem of fertilizer application.

From this analysis, there is much problem in the purchase of fertilizers despite the fact that fertilizer should be purchased at a subsidized rate by the favour from the ADP project. Also, in the application of fertilizer by the respondents, it is not surprising that, one of the poor explanations could be due to the low level of awareness of some respondents in fig 4.7 Which may lead to adherence to traditional ways of farming there by making it difficult to be unwilling to accept new ideas and be familiar with inputs?

4.14 The Use of Insecticides Respondents.

Figure 4.8 shows that 72.3% use insecticides while 12.0% do not. The remaining 15.7% showed no response. It is obvious that 65.1% of the respondents own a sprayer while 17.5% do not however, 17.5% of them never responded. Figure 4.8 also indicates that most of the respondents (59.6%) have no problems in purchasing insecticides or sprayers while only a few (13.3%) encounter problems in purchasing insecticides and 17.5% still did not respond.

Among those respondents who use sprayers or insecticides, it reveals that, only a few of them (12.7%) face problems using it, while a high proportion of respondents (59.6%) have no problem in utilizing insecticides or sprayers and the remaining 27.7% neither have a problem in using insecticides for sprayers.

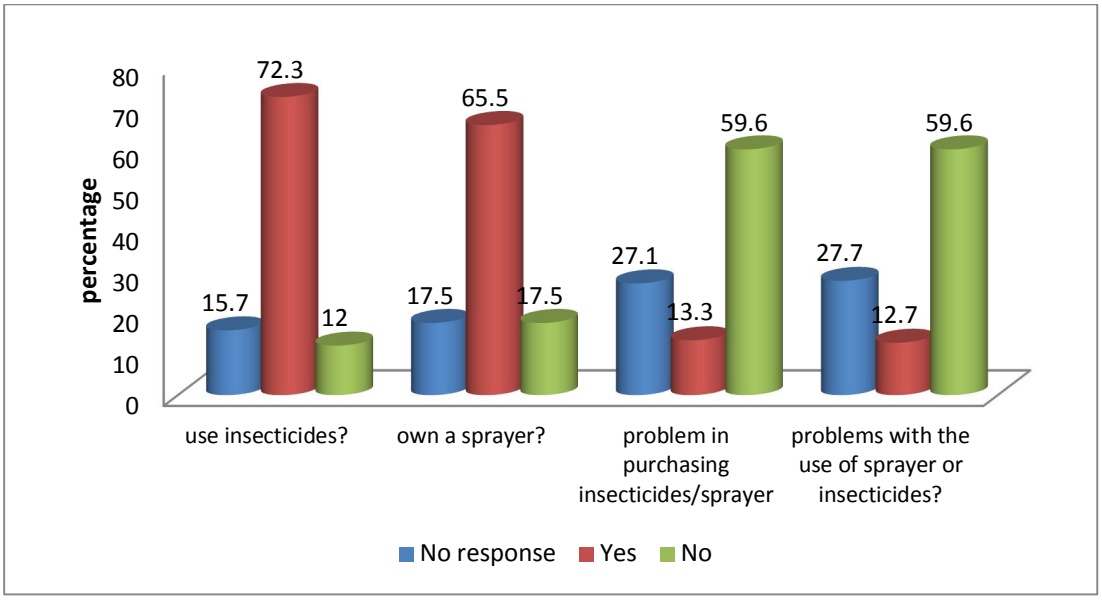


Figure 4.8: Distribution of respondents by use and the problems of insecticides/spray Source: Field Survey, 2011.

The distribution of respondents by use of insecticides in Fig 4.8 indicates that, among the 72.3% of respondents using insecticides only 65.5% of them owned sprayers, while 59.6% of

those respondents who use insecticides also face problems of purchasing and utilizing sprayers. From this result, it is obvious that the impact of insecticides by the respondents is high and with only a few respondents having problem, signifies the great impact and assistance the ADP Project staff have rendered to the respondents in the area of consideration.

4.15 Awareness and level Use of Sprayers, Insecticides, ox-plough and Tractors before the Project.

Figure 4.9 shows that 52.4% of the respondents accepted that they were aware of sprayers or insecticides before the project and 38.6% say they were not. A total number of responds (9.0%) were not able to say no or yes. Figure 4.9 indicates that 55.4% of the respondents are aware of ox-plough before the project while 36.7% say no and the remaining 7.8% remained undecided 7.1% of the total respondents were aware of the use of tractors before the KADP project while 21.1% were not. The remaining 7.8% were non farming choice less (See figure 4.9).

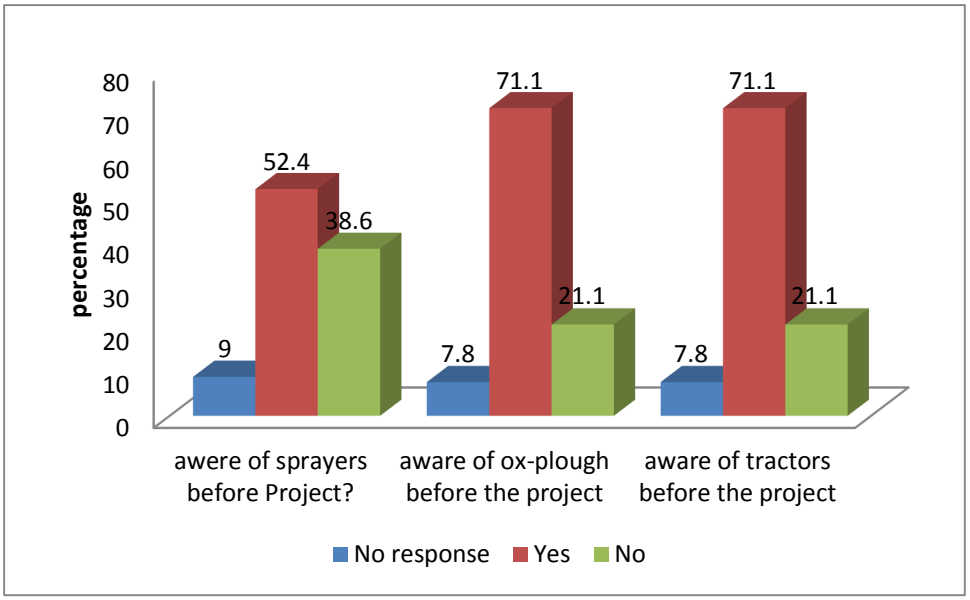


Figure 4.9: Percentage Distribution of Respondents by Awareness and Use of Sprayers, Insecticides, Ox-plough and Tractors. Source: Field Survey, 2011.

Hence, the level of awareness is indeed very high. The high proportion of awareness of sprayers, ox-plough and tractors before the ADP Project is related to the high level of educational status (see information in Fig 4.9) This also implies that about 50% and above of the respondents was willing to accept ideas, familiar and aware of the above inputs before the coming of ADP as seen in Fig 4.9.

4.16 Possession and Use of Ox-plough Problems and Assistance by Project Staff in solving these Problems.

Figure 4.10 indicates that majority of the respondents (63.9%) do not possess an ox-plough while only a few 26.5% possess an ox-plough. The remaining 9.6% of the respondents have no choice. It also shows that 37.3% of the respondents have ever used ox-plough on farmlands while 51.8% say they have not and the remaining 10.8% did not respond.

A total of 52.4% remained without response whether they had a problem and 26.5% agreed that they encountered problems in the purchase of ox-plough on farmland. The remaining 21.1% had no problems at all in purchase or ox-plough. More also, among the respondents, only 36.1% say no problem in the use of ox-plough while 8.4% replied yes and the remaining 55.4% did not respond.

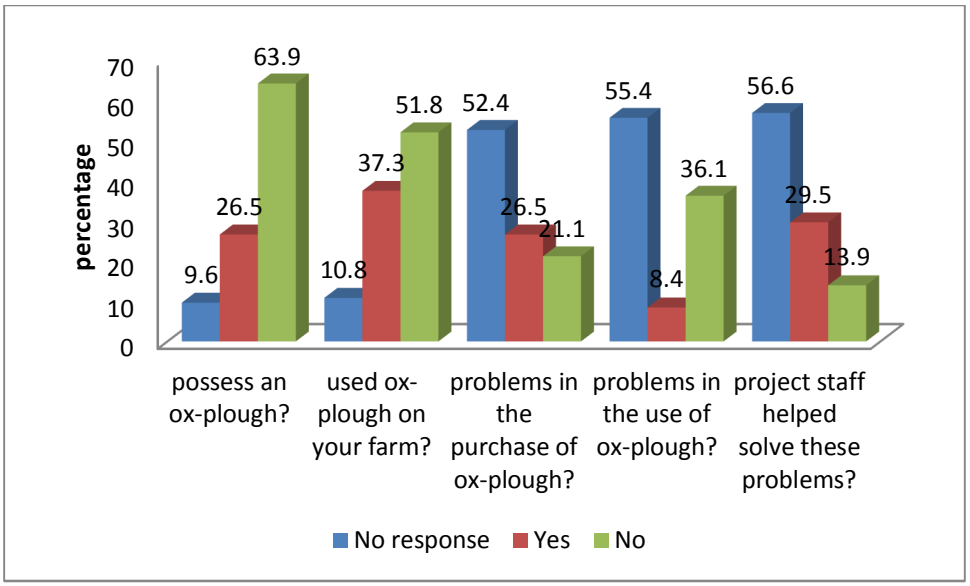


Figure 4.10 Percentage Distribution of respondents by Ox-plough by possession and usage. Source: Field Survey, 2012

As shown in figure 4.10,it is evident that some of the respondents who said no to the possession of ox-plough, did so because of ignorance and fear since they were not having full knowledge of the sole aims of ADP and coupled with the fact that, the farmlands are the main stake of their source of income. In addition, they must have thought that the programme was meant to exploit their resources. Among those respondents who possess ox-plough, almost all use it on their farms and only a few (8.4%) have problems in its. However, 29.5% of the respondents confirm that the project staffs help in solving their problems during ploughing.

4.17 Possession, Purchase and Problems of Using Tractors by Respondents

Figure 4.11 show that majority (66.9%) do not own a tractor while only 14.5% own tractors. The distribution of respondents by use of tractors on farmland in figure 4.42 shows that 71.1% of the respondents have ever used tractors on farmland while 10.2% say that they have never used tractors on farmland. It shows that those with problems in purchasing tractors are

39.2%, while those that have no problem (17.5%) and the majority were those without choice (43.4%). Furthermore, it shows that 50.6% have no problems with the use of tractors while 10.2% have problems in using tractors and the rest 39.2% are in doubt.

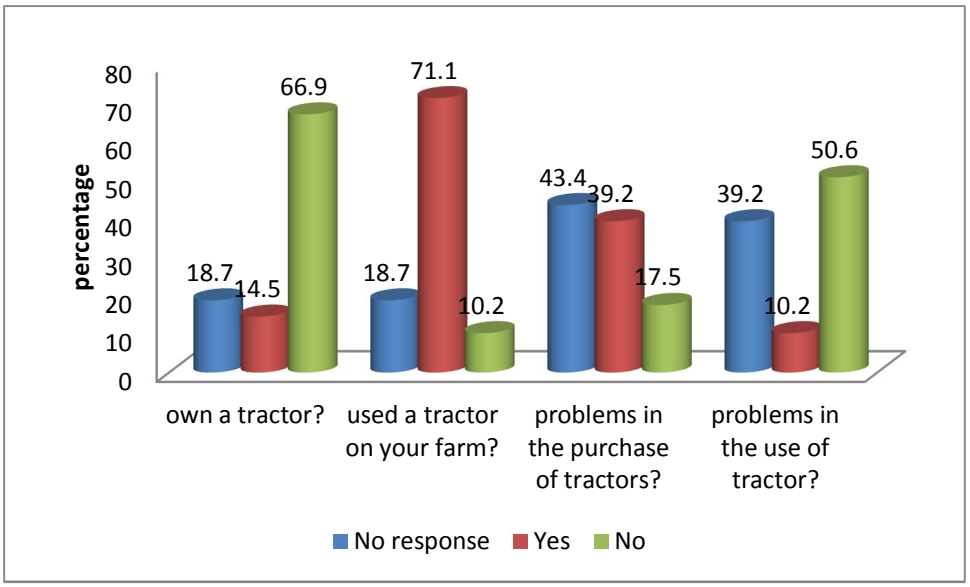


Figure 4.11 Percentage Distributions of Respondents by Possession, Use, Purchase and Problems in Tractors. Source: Field Survey: 2012.

One of the services of ADP is to render assistance such as hiring tractors to the farmers at a subsidized rate. The need for tractors in agricultural production cannot be overemphasized as it helps in harrowing, ploughing, tilling among others. Only a few (14.5%) of the respondents own a tractor while 71.1% utilize tractors. Major reason could be that most of them operate at small scale and are incapacitated with adequate capitals to meet up the challenges. Out of the 71.1% respondents utilizing the tractors, about 39.2% said that there have problems in purchasing the tractors the while 10.2% confirm different problems in using them at the farmland.

4.18 Problems of Borrowing and in Obtaining Credit by Respondents.

Valid	Frequency	Percent	Valid percent	Cumulative percent
No Response	77	46.4	46.4	46.4
YES	49	29.5	29.5	75.9
NO	40	24.1	24.1	100.0
TOTAL	166	100.0	100.0	

Table 22: Logit Estimate of Percentage Distribution of Respondents by adequate borrowed amount and problems obtaining credit from KADP. Source: Field Survey, 2012.

The data on table 20 shows that, 29.5% had borrowed money that was adequate while 24.1% disagreed and the remaining 46.9 were choice less non farming group. In addition, 24.1% encountered problems in obtaining credits from the project. Those who encountered problems need more orientation from the ADP staff on the other hand, the 24.1% who never asked for loans might have been the small scale farmers that use tradition methods of subsistence agriculture requiring small capital.

4.19 Awareness of products sold and bought from KADP by Respondents

From the figure 4.12, majority (34.9%) of the respondents are aware of goods sold from the project while 37.3% are not aware. The remaining 27.7% have no response. From figure 4.13, it is obvious that 26.5% have ever bought goods from ADP while 25.9% have never and the remaining 47.6% are in doubt.

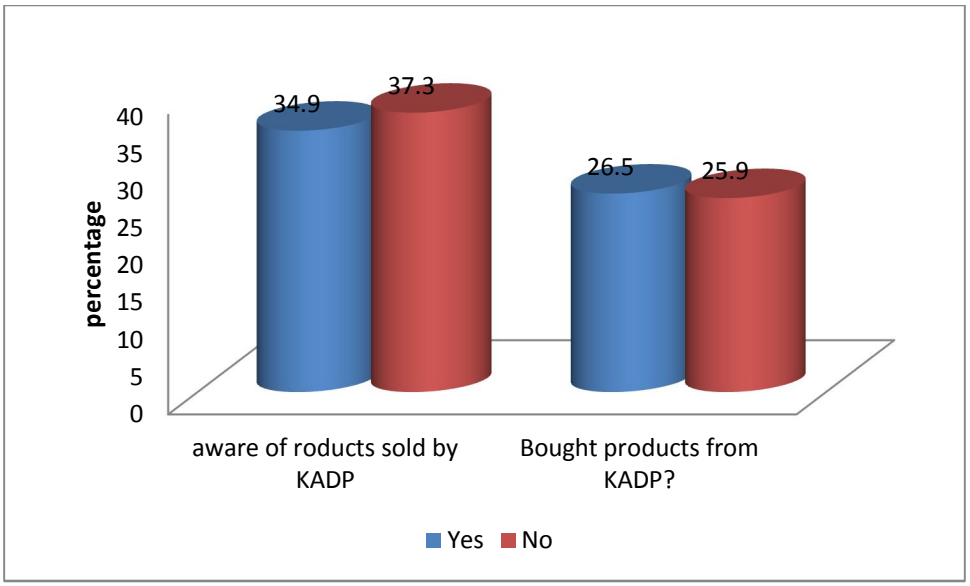


Figure 4.12: Distribution by Percentage of Respondents by products bought and sold from K.A.D.P. Source: Field Survey, 2011.

Fig 4.12 shows the percentage distribution of awareness of respondents by products sold and bought by ADP, from this result, it is evident that among the few respondents (34.9%) who are aware of products sold, only 26.5% of them bought the products from ADP. However, there is need for more adverts of products and increased awareness.

4.20 Relationship between Farmers and Extension Workers of ADP.

From figure 4.13, the majority (76.5%) accepted that they had once contacted an ADP staff while 13.3% had never contacted and the remaining said nothing. Among the 76.5% who had ever contacted a project extension staff, only 68.1% had approached them with a problem while 12% of them had never contacted any extension staff of KADP. Similarly, 19.9% were having no response at all. Figure 4.14, also shows that 64.5% of the respondents revealed that they have taken problems to ADP staff and the helpful suggestions were appreciable or

welcomed. While only a few (11.4%) disagreed for the suggestions made by ADP in addition, 24.1% mad no response.

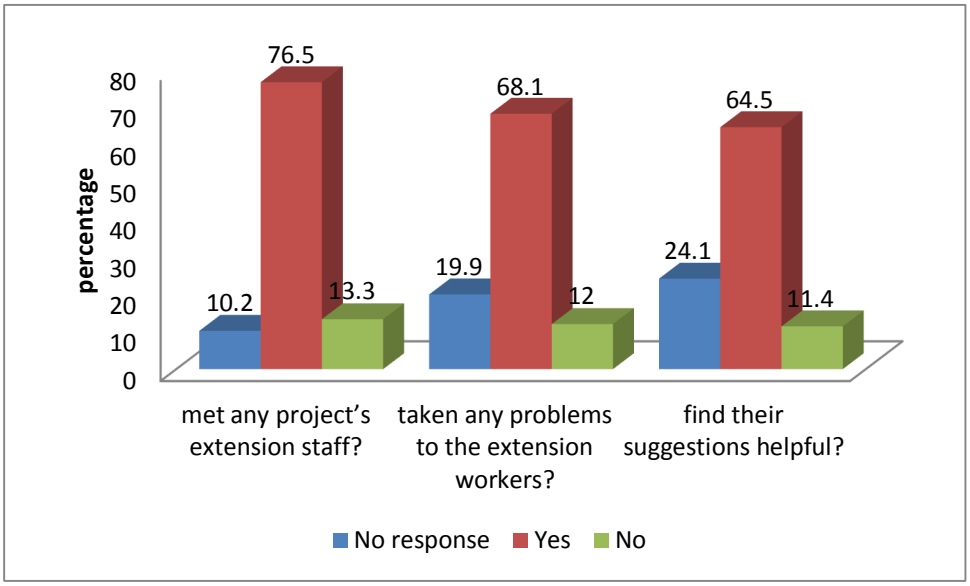


Figure 4.13 Percentage Distribution of Respondents by contact and addressing problems to ADP Staff for Suggestions. Source: Field Survey, 2012.

It is observed from Figure 4.13 that, respondents who had taken problems to the ADP staff are as a result of the high proportion that had been in contact or met with the staff earlier. It is also certain that nearly all respondents who had taken problems to the Extension workers were given helpful suggestions.

4.21 Project Feeder roads, Dams and Benefits Derived of ADP Project.

Figure 4.14, indicates that 48.2% are aware of the project feeder roads while 11.4% are ignorant. The remaining 20.5% made no response. Figure 4.14, shows that 41.6% of the respondents are not aware of dams constructed by the project while 21.1% are aware of the dams constructed. About 37.3% of the respondents are not willing to respond. Figure 4.7, shows that

57.2% of the respondents would have benefited more if they were richer while 12% say no and the rest had no choice.

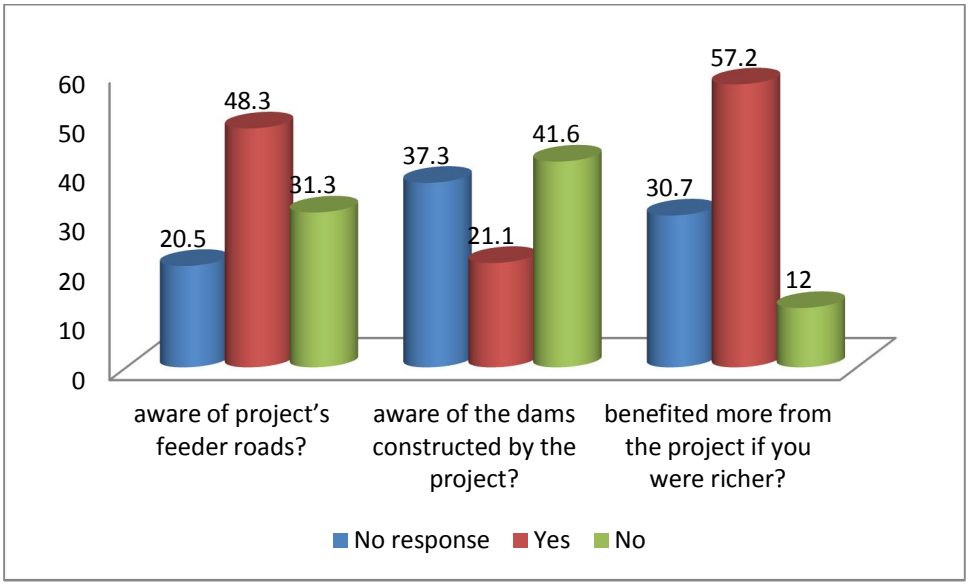


Figure 4.14: Distribution of Respondents Awareness of Project feeder roads, dam's construction and Benefits derived from Projects if richer.

Source: Field Survey, 2012.

It was found that the respondents that are aware of feeder roads and dams are 48.3% and 21.1% respectively while 57.2% confirm they would benefit from the project if richer. The need for increased awareness of feeder roads and dams cannot be overemphasized as it plays a key role in agricultural development. Apart from the fact that, the feeder roads facilitate the movement of goods, people and services they are also connected to the major trunk A road for evacuation of goods to market (Adams Vogel, 1986).In addition, slightly above half of the respondents confirm that they could benefit more from the project if they were richer.

Valid	**2005**	**2006**	**2007**	**2008**

No of Growers	22,350	34,829	56,521	102,657
Hectares	10,133	20,470	30,888	60,835
Yield-kg-per ha	1,286	2,265	2,483	2,857
Production tones	6,300	26,248	46,554	114,254

Table 23: Maize Production Area and Yield Figures Expressed as sole crop Equivalent. Sources: K.A.D.P. (Report)

4.22 Distribution of Respondents According to Number of People Fed

According to Figure 4.15, majority (33.7%) of the respondents feed 6-10 people followed by 22.9% feeding 11-15 people. Only a few people feed more than 21 persons (10.2%).

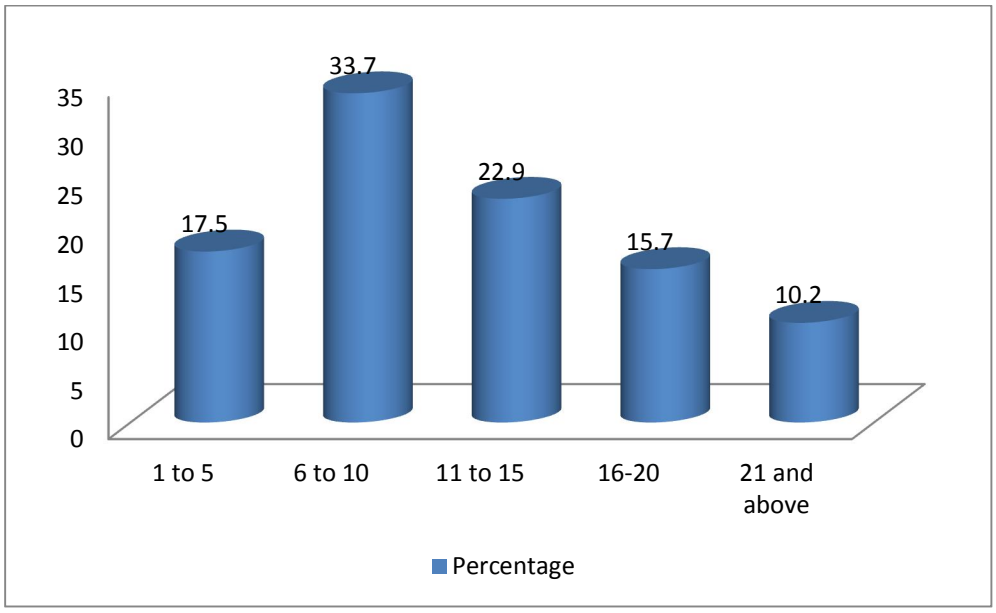


Figure 4.15 Distribution of Respondents by Percentage of number of people fed. Source: Field Survey, 2012

The large family sizes of house hold are as a result of the polygamous nature of the Hausas dominating in this part of the country. More so, the farmers also increase wives with better incomes generated from the ADP and as a result, the increase in house hold to support house labour. On the average, most respondents have a wife or two as seen by the high proportion of distribution shown in Fig 4.15 but as benefits from ADP project increases, the respondents increase wives and children to support them when they are old and equally inherit the land.

Objective In farming	**Respondents**	**Frequency**	
To be self sufficient	166	50	83
To make money	166	30	15
To cultivate	166	15	25
To modernize my farming	166	5	10

Table 24: Logit Estimate of Percentage Distribution of Farming Objectives. Source: Field work (2010).

IMPACT THROUGH SOCIO-ECONOMIC WELLBEING (TRANSFORMATION)

The focus of discussion shall be on the effects of the project on social and economic aspects of the rural economy under consideration.

The farmer perceived the importance of the project activities and found them useful. Initially the production was mainly of a subsistence type, but with the coming of the project, agriculture has been oriented towards cash crop production. This is because the farmers have

seen the importance of generating higher income at the shortest possible time. According to the survey, 30% of the respondents farmed their lands in order to make money, while 50% cultivated their lands in order to provide food for subsistence, see table 10. Usually it is the male adults that constitute the working class of the population, the man engaged himself in other petty trading, during the dry-season. In order to provide food for the family. On the other hand the women do not work on the farms but are largely dependent on the working class. These constitutes the young and middle aged persons. Usually these are the class of people who are always ready to adopt any innovation.

Usually during the dry-season, the younger ones moved out to the urban centre for employment "Cin Rani" but with the provision of dams, water is made available for fishing and irrigation, this has helped greatly in the reduction of the number of out migrants to other areas.

(i) **Impact on Labour**

Labour in Lere Local Government area has been transformed and activated. The labour tended to work for more wages and a general decline of the 'Gandu System' which was in operation before the project. These local farmers have discovered that productivity increase when labour is intensely used. There is the shift towards the hired labour, where there is effective supervision the labour feels committed to work, because payment would be in accordance with the amount of effort expended. The major labour force of these areas are those of the age group of 20 – 49 years, where as the old people are completely dependent. These people constitute only 15% of the respondents and are aged 60 + years. The younger people have found useful the advice of the extension staff improving their marketing system there by selling directly to the project, and realizing more income than that of the Gandu system, this has helped in the disintegration of the system and the consequent individualistic tendencies of the farmers.

The older people attach no importance to any innovation while the younger ones are not economically independent and very sensitive to any change, and are not likely to have built up the capital to cover the cost of the problem.

(ii) Income (capital) Transformation

The local farmers depended to a large extent on their farm products, to raise their needed capital. Normally, besides the farming there are other activities like dyeing, barbing, trading and butchering to mention but a few, that the people depended on the flow of income has increased greatly and people work for more wages because the project offers better prices for the farm produce.

According to the survey, when these local farmers were asked the number of wives they have, most of them had three (3) to four (4) wives. This is not surprising because of their religious factors, most of them are Muslims and the religion permits the practice of polygamy. Besides, this has been due to the fact that the income generated for newly introduced maize has increased as already outlined.

The coming of the project in 1987 has actually increased the standard of living of these rural farmers. More income now flows into this area (Lere L.G). As a result of the higher income, consumption pattern have changed considerably due to the purchase of durable goods. There was substantial increase in the purchase of such items especially in the year 2006, as visualized on table 25.

Valid	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**Total respondent**	**Frequency**	**%**
Electric generating set	15	20	35	5	10	-	166	95	95%
Torch lights	20	5	5	5	10	10	166	55	55%

Harvesters	10	5	5	10	12	3	166	45	45%
Trailers	20	30	5	2	3	5	166	65	65%
Pick up	10	12	3	5	5	10	166	45	45%
Personal car	10	10	10	12	8	6	166	56	56%
Commercial bus	12	12	8	8	10	10	166	60	60%
Motorcycle	5	15	30	-	-	20	166	70	70%
TV/Radio set	5	10	15	15	15	20	166	80	80%
Modern housing	10	8	8	8	10	12	166	66	66%
Refrigerator/ Deep freezers	7	8	10	16	20	22	166	83	83%
Satellite/Cable	5	8	20	-	20	6	166	59	59%

Table 25: Logit Estimate of Percentage Distribution of Respondents purchase of durable items.

The major objectives of the local farmers were to accumulate wealth and purchase a motor car or motor cycle in fact the mode transportation is changed and is still changing. It has been found that the local farmers have even turned to the purchase of pick-up-vans (Canter) in order to transport their goods to the urban centre. The highest consumption ever made was in 2006, because this was the time when the project was in full force to purchase the farmers goods at a very good price. Actually most of the development in this village area is attributed to this period. The rate of purchase of kerosene lamp was granter and it has scored 70% of the total purchase of durable items, it shows the drastic decline in the use of palm oil candle. Motor cycles took about 30%. The social patterns of this rural local farmers has been changed, now that the people not only discarded the use of mud beds, and the consequent adoption of cotton/grass mattress, modern beds were even purchased and this carry 60%, see table 25.

(iii) Change in the Housing Patterns

Prior to the project, the housing system was that of a typical rural settlement but transformed: The rounded roofing systems are changed to corrugated sheets. Mud houses are changed to the cement blocks; wages are now higher, than before with most people saved their money and build mud houses either with mud roofing's or using iron sheets these resulted the transformation of this Local Government to a typical urban centre in Hausa land.

(iv) Change in purchasing patterns

Before the project came into being, these local farmers paid little attention to the purchase of durable goods. The most important to look into is the communication system in terms of the use of Radio-set.

Initially the use of Radio-/TV sets have not been appreciated, as most of the farmer do not listen to it, and of course have no means to purchase one. Nowadays these farmers found the radio useful as a means and media of communication, as a lot of gain is accrued, due to the project's programmes. About 70% of the local farmers possessed radio-sets. Initially the normal trend was for local farmers to use palm oil candles and kerosene lantern, but the project introduced rechargeable torchlight and Generating sets at a much wider scheme in the year 2008, at that material time the income per head was high. Actually most of the purchases made was in 2006 as evidenced on table (25) that this has been due to the increase in income in that period. This is further supported by the greater yield in maize production and subsequent higher prices accrued from it. Nowadays there is a gradual change in the use of kerosene lamps to the use of generation sets. The social standard of these local farmers has changed considerably. It is found that some of them turned to be tailors, because of the income accumulated and

greater/saving mode while others migrate out of this rural areas to the urban center to do 'Achaba' motor cycle transport, only to return to their farm with the arrival of rains.

(v) Migration Patterns

Saminaka town acts as a nucleus centre of the surrounding village and hamlets. People move into this area and take the advantage of the project activities to purchase items and return to their hamlets (commuters) while, some of the already adopted innovation in Sabon Birnin Saminaka is spread to the other adjacent villages and hamlets and a few settled down permanently , because of the services offered by the project.

(iv) Market systems

The farmers have found it useful to expand the market for these villages in Saminaka Lere Local Government area, as a result of which the market has been expanded and reorganized. Goods that were not available in the market are now readily found. It is found that the market area of the villages operates twice a week and it ranks higher in Saminaka than other villages around it.

These achievements during the life of the project have been facilitated partly, because of the feeder roads constructed, which provides accessibility. Actually the general awareness at the initial stage of the project activities has motivated the farmers to respond quickly to the KADP. There is greater publicity of the project's problem regarding farming methods initially used and what they have got in store for the farmers which had helped greatly the farmers.

Most of the respondents acquired Arabic education either formal or informal. As a result of which roman scripts, in which the project propagated its programmes were not of much importance, because most if not all cannot read and write Roman scripts. The project therefore, through the help of the Local Government set up Adult-Education Classes. This has helped the

farmers understand and comprehend rural road construction and the innovation exposed to them and consequently influence their uses.

The pricing system of the farm produce has changed greatly with farmer selling his goods at his own contended price, the project fixed a standard price on each item of the products, and this has created new incentives in the minds of these rural farmers to produce more goods, at a standard rate to fetch them more money.

Now that marketing system has been improved and modernize and modernize, the farmers respond to the KADP. Usually the rate of diffusion of innovations offered by the project depends on the operating costs and the maintenance costs. And because the operating costs has reached its threshold, sufficient to maintain the spread of innovation, and its consequence adoption in this area and the farmers well being are changed economically and socially.

Income cannot be generated without any investments and project saw the need to offer credit and long term loan, which may be in money or kind to help these local farmers raise capital. efficient farming to be possible, the respondents suggested and recommended loan and credit as an effective means of improving their farming methods. It has been gathered that the major obstacle to farming is the lack of capital outlay otherwise they would have benefited more if they were richer than they were at the time of the interview. .Actually the use of tractors and ox-plough on loan and credit has been a vital issue to these local farmers of Lere L.G. Bull works has been offered on credit to farmers and this has helped in no small measure to increase the use of ox-plough.

As the market has been modernized in order to purchase agricultural inputs at a fairly subsidized rated from the project. The activities of the middle men in the project headquarters have been greatly reduced and the prices at the markets are checked and made known to the local

farmers, through the Agricultural Extension Research Liaison Services(AERLS)Samaru Zaria. Also certain commodities like sugar, milk, cement, were sold at a control price to the local farmers, in order to upgrade their standard of living and there has been greater demand of these items since 1997.

Normally, the farm produce is not sold just anyhow, it is usually stored by the farmer and sold when the need of money arises and he does not bother as to whether the output is great or not. All they are interested is to get what to eat and sell of the surplus, when the need for money arise. It has been argued that an increase in price for subsistence crop may increase producer's real income sufficiently, so as effect on his demand for consumption. The market surplus therefore may vary inversely with the market price; in Lere local government area this has been the case, as each farmer grow as much as he can possibly do, to generate maximum surplus and this could help them to meet their demand. The supply of inputs and relevant technology as explained in (Table 12) proffer discussions on the transformed local methods of farming and the importance's of these items visualized. The farmers look for the inputs when the need of its use arises and the capital to purchase the items could easily be raised, usually from the stored goods. At times when the farmer finds it difficult to raise the needed money, he either borrow money from the village head or relative or he abandons such items completely what the project does to help the farmers in the purchase of those items is to bring it nearer at their "door step" normally, this creates a certain incentives in the minds of these local farmers to purchase the items.

Usually it is those nearer to the project who benefit from these item and it is here that other activities are generated because the extension services of the project activities are felt greatly at the headquarters than anywhere else, before an innovation came into the village

wards(Districts), it has already been adopted and is only the “progressive farmers” who move out to the headquarters brought the ideas into their village area.

Normally the rate of adoption increase to the adjacent areas with the closest area to the sources of innovation greater chance of its adoption. Usually in these village areas, the farmers responded to any innovation before the adjacent village or hamlet. Saminaka being closer to the main road respondent greatly to the project than Ramin Kura. (Map 2)

With all the opportunities offered these local farmers, there has been a substantial increase in the standard of living though and their major farming shortcomings are lack of capital.

In general these local farmers have responded to the project because of the activities offered that has helped transformed them from a mere lowest level of economic activities to a higher standard of living.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summaries the findings and draw conclusion from the observations made. The chapter also suggests a number of recommendations that will improve the project.

5.2 Summary

This study was designed to assess impact of the socio-economic well being of farmers in Lere Local Government Area of Kaduna State. It was assumed that the standard of living of the farmers in Lere Local Government would have risen due to impact through provision of infrastructure and diffusion of relevant technology; farm inputs are effective in addressing rural poverty and alleviating hunger and arresting rural-urban migration which in turn will lead to rural integration and development.

One hundred and sixty six household heads were randomly selected in eight wards within the Local Government Area. The data used for the study were obtained by primary sources, through the means of structured questionnaire administered to the respondents. The analytical tools employed include descriptive statistics, logit regression model, T-test and Chi-Square.

Among the 166 respondents, 85 percent were engaged in one form of agricultural activity or the other. This is an indication that majority of the respondents' derived livelihood from agricultural activities with the exception of a few non farming groups. Similarly, among the

reasons given for engaging in agricultural activities is the high income derivable from maize cultivation.

Result of logistic regression analysis shows that age, education, occupations, years of faming experience household family size, farm size, credit, farm land ownership before KADP, farm land acquisition increase in farm land and farm size, acquisition of fertilizer, supplies of seeds and chemicals, adoption of new farming techniques were found to contribute to farmer's engagement in agricultural production. This is an indication that these parameters had an influence on agricultural productivity and diversification activities of farmers in the area. From the results of field survey it is adduced that the farmers were in abject poverty before the coming of KADP activities, now that the farmers have adopted the new farming techniques their social and economic well being as risen out of poverty to prosperity. Similarly, the T-test was indicates that there was significant difference in the mean income level of the farmers and the most poverty prone of the populace in non farming groups.

5.3 Conclusion

In a nutshell this study reveals that rural farmers in the area were engaged in crop cultivation with particular attention to maize. These socio-economic transformation and well-being were been influenced by several factors such as age, gender role. Education, household size, credit were found to contribute significant in influencing economic status, due to higher income and obviate poverty. . The study also reveals that farmers perception of poverty and its reduction varies reflecting individual experiences, and the effects of high standard of living is felt in terms of increase in income and improve food security of households.

The study further shows that rural economy is a relatively diversified economy. Furthermore, the study reveals that farmer's involvement with project activities is as a result of overwhelming need to survive and maintain livelihood. Therefore, the quest for improved standard of living which has been sought after by rural dwellers and their sympathizers would be met with higher successes when rural people realize the potentiality and effectiveness of the services offered by the project in the overall scheme of rural poverty reduction especially in rural communities of low income countries. It is therefore, the general conclusion of this study that Lere Zone of the KADP at Lere Local Government is a positive undertaking and an antidote to the chronic menace of poverty ravaging rural areas. This is because it enables rural people increase their income portfolio and insures households from insufficiency of food, thereby improving their food security status, while equally lessening their vulnerability to hunger, diseases and sudden deaths.

5.4 Recommendation

Based on the findings of this study the following recommendations are hereby advanced:

i. Although farming remains the main sources of income majority of farmers households perceived that they were living in poverty condition and non agricultural enterprises as an alternative strategy to curb the incidence of poverty among the population

ii. Policy makers should emphasize in their developmental programmes the need to encourage the development of rural cottage industries for services and urban patronage. This is not only seen as a booster to rural economy but also as an attraction to outsiders.

iii. Rural development is about links economic sectors, household empowerment, and people actively engage in activities that will boast their socio economic well being. Rural development would be a success if it is able to bridge different activities and enforcement.

5.5 Suggestion for further study

i. This study was carried out in only one Local Government Area (Lere) out of twenty three (23) Local government Area in Kaduna State; therefore, it is suggested that thus research work should replicated in other Local Government Areas of the State to ascertain the impact of KADP on the socio economic wellbeing.

ii. Logit Regression analysis and chi-square were used to measure the impact of KADP activities in this study, it is suggested here that other measures be used to analyze further studies.

iii. The study concentrated on non-agricultural and agricultural as the overall scheme of rural development and poverty reduction drive.

iv. It is evident that certain variables were excluded from examination, and that some of the variables investigated did not relate with the dependent variable as hypothesized. It is hereby, recommended that these and more variables be included in the model in futures studies.

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APPENDIX I

APPRAISAL OF THE IMPACT OF KADUNA AGRICULTURAL DEVELOPMENT PRJECT (KADP) ON THE SOCIO ECONOMIC WELL-BEING OF THE PEOPLE OF LERE LOCAL GOVERNMENT KADUNA STATE

The purpose of this survey is to assess how the Kaduna Agricultural Development project (KADP) has raised agricultural production and productivity; and whether it has affected the socio-economic well being of various sections of the rural population and with what results.

_____

(a) Name of Village_____ (b) Unguwa:_____

(c) Compound No._____ (d) Name of Respondent_____

_____ (e) Age_____

(f) Place of Birth_____ _____

Village District

_____

LGA

(g) Name of Interviewer_____ Date_____

_____

(a) What is your main occupation during the dry season?_____

_____

(b) For how many years have you been doing that work?

Less than 2 years_____ 2-5 years_____

6-10 years_____ More than 10 years_____

(c) Do you have any other occupation or ways of making money during the dry season?

(LIST ALL WAYS MENTIONED AND CIRCLE THE MOST IMPORTANT

1. _____
2. _____
3. _____
4. _____
5. _____

2. (a) What your main occupation during the rainy season?_____

_____

(b) For how many years have you been doing that work?

Less than 2 years_____ 2-5 years_____

6-10 years_____ More than 10 years_____

(c) Do you have any other occupations or way of making money during the rainy season?

(LIST ALL WAYS MENTIONED AND CIRCLE THE MOST IMPORTANT ONE)

1. _____
2. _____
3. _____
4. _____
5. _____

3. (a) Do you own a farm? Yes No

(b) If yes how many fields_____

(c) Give the size of each field (i) _____ (ii) _____

(iii) _____ (iv) _____

(d) If you do not own a farm give reasons why not_____

_____

4. Have you acquired more farmland in the last 4-5 years Yes/No
5. If answer to Q4 is yes please give details of how such farmland was acquired

(a) Inheritance (Gado)_____ (b) Allocation/Gift (Kyauta)_____

(c) Purchase (Saye)_____ (d) Pledge (Jingina)_____

(e) Loan (Aro)_____ (f) Lease (Haya)_____

(g) Sharo-cropping (Kashe muraba)_____

(h) Cleared bush without asking the village head_____

6. Why did you decide to acquire extra field in the last 4-5 years?

a	Had a bigger family, more workers
b	To plant more and grain more money
c	Purchased a plough to work more fields
d	Acquire loan to invest in farming

e	More inputs now available
f	To get prestige
g	Others

7. What crops did you grow on your this year?

   1. _____ 2._____ 3._____

   4. _____ 5._____ 6._____

(b) Have you introduced new crops on your farm in the 4 years? Give details:

New crop	Reasons for introduction

8. Do any family members help you with farm work? Yes/No

9. If the answer to question 8 is YES please fill in the following chart:

   Person helping respondent with farm work:

S/N	Name	Male or Female	Age	Kinship relationship	Work done	Paid or unpaid
1						
2						
3						
4						
5						

6						

10. The following questions relate specifically to the KAD project Lere Local Gov't.

11. (a) Are you aware of the KAD Project? Yes/No

(b) What project activities do you know about?_____

_____

12. (a) Do you derive benefits from these activities Yes/No

(b) If yes state the benefits_____

_____

13. (a) List the inputs you regard as important for your farming?

1. _____ 2._____

3. _____ 3._____

5. _____ 6._____

14. What are your problems in farming?

1. _____

2._____

3. _____

4. _____

15. (a) Have you received any help from the project (in getting the items mentioned in 13a)? Yes/No

(b) If No please give reasons why_____

_____

(c) If Yes state what sort of help?_____

_____

16. What changes have you noticed (agricultural and otherwise) in this village since the beginning of the KADP.

1. _____

2. _____

3. _____

4. _____

17. (a) What are you objectives in farming?_____

_____

(b) How can you achieve these objectives?_____

_____

(c) If Yes give how many bags you have bought in the following years.

Years			Where Bought
	Unit	Number	
1987			
1988			
1989			
1990			
1991			
1992			
1993			
1994			
1995			
1996			
1997			

20. (a) Where will you prefer to buy your fertilizer?_____

1. _____

2. _____

(b) Please give reasons for the preference_____

_____

21. (a) Have you any problems with regards to the purchase of fertilizers? Yes/No

(b) If Yes give a list of the problems (1) _____

(2) _____ (3) _____

(4) _____

(c) Have you any problems with the application of fertilizer? Yes/No

(d) Has the project staff helped you to solve these problems? Yes/No

22. (a) Have you been using insecticide? Yes/No

(b) If not why? _____

_____

(c) If yes give the following information:

Years			Where Bought
	Unit	Number	
1987			
1988			
1989			
1990			
1991			
1992			
1993			
1994			
1995			
1996			
1997			

23. (a) Do you own a sprayer? Yes/No

24. (b) If not why?_____

(c) If yes give the following information?

Years	Number Purchased	Where Purchased

25. Have you any problems in the purchase of either insecticides or sprayers? Yes/No

26. Have you any problems with the use of a sprayer or insecticides or sprayer? Yes/No

If Yes please give details 1. _____

2. _____ 3. _____

27. In what ways has the project helped you to solve these problems?

_____

_____

28. Were you aware of sprayer and insecticides before the project? Yes/No

29. Were you aware of Ox-plough before the project? Yes/No

30. Were you aware of tractors before the project? Yes/No

31. Do you possess an Ox-plought (s) Yes/No

If No state reasons why?_____

_____

32. (a) Have you ever used Ox-plough on your farm (s)? Yes/No

(b) If not why?_____

(c) If yes how did you obtain an Ox-plough?_____

_____

33. (a) If you posses an Ox-plough(s) give the following information:

No of Ploughs	Year of purchase	Where purchased	
		Place	Price

34. Do you any problems in the purchase of Ox-plough? Yes/No

If yes please give details: 1. _____

2. _____

3._____

35. Do you have any problems in the use of Ox-plough(s)? Yes/No

If yes please give details: 1. _____

2. _____

3. _____

36. Have the project staff helped to solve these problems? Yes/No

37. How can the project help you better in solving these problems?

_____38.

Do you own a tractor? Yes/No

If not why?_____

39. (a) Have you ever used tractor on your farm(s) Yes/No

(b) If yes how did you obtain tractor service?_____

_____

40. If you posses a tractor give the following information:

	No of tractors	Year of purchase	Where purchased	Source of Loan

41. (a) Do you have any problems in the purchase of tractor(s) Yes/No

(b) If yes list the problems _____

_____

(c) Do you have any problems in the use of tractor? Yes/No

(d) If yes list the problems _____

_____

42. In which ways can the project help farmers to own and maintain tractors(s)

43. What advantages if any do you see in using modern implements?

(tractors Ox-plough etc?)_____

_____

44. If you employed farm labour and purchased some items to facilitate your farming activities from where did you get the money to make these expenditures?

_____

45. From where did you get the money to meet expenditures for ceremonial or unexpected happenings?

Ans. _____

46. If you have borrowed money since last April from whom did you borrow it?

Ans. _____

(relative) (friend) (village head) (trader)

47. Is this person living in the village or his/she from outside the village?

Ans. _____

48. Where else might you have been able to borrow the money you needed?

Ans. _____

49. For what purpose did you use this borrowed money?_____

_____

50. Could you have used more borrowed money than you were able to borrow?

_____ Yes _____ No

51. Could you have used the additional money for? Ans. _____

_____

52. For how long will you keep the money before paying in back to the person borrowed from?

Ans. _____

53. If you ever obtain credit from the project please give the following information.

Year	Amount	Purpose	Period		Nature	
			From	To	By Instalment	Al Once

54. (a) Are you aware of the interest rate charged? Yes/No Give the rate.

55. (a) Do you have any problems in obtaining credit from the project? Yes/No

(b) If yes list the problems 1. _____

2. _____ 3. _____

(c) Please suggest possible solutions to these problems:_____

_____

56. (a) Do you know that the projects sells such goods as sugar, milk. Generators husking machine, grinding machine. Yes/No

(b) If yes have you ever bought any of such goods from the project? Yes/No

(c) If No why? _____

_____

(d) If yes give the following:

Year	Item purchased	Quantity Price

EXTENSION SERVICE

(a) Have you ever met any of the project's extension staff? Yes/No

(b) If yes have you ever taken any problems to the extension workers? Yes/No

(c) If no state why? _____

_____

_____

(d) If yes did you find their suggestions helpful? Yes/No

What problems have you that relate to extension services? _____

_____

How could the project's extension services be improved? _____

_____

_____

Do you know of the project's feeder roads? Yes/No

If yes what benefits do you derive from these roads? _____

_____

61. In which ways can the movement of goods to markets be improved in your locality?

_____

62. Are you aware of the dams constructed by the project? Yes/No

Thank you very much for answering my questions.

APPENDIX II

LOGIT REGRESSIONS

Case Processing Summary

Un weighted cases	N	Percent
Selected cases included in analysis	166	100.0
Missing cases	0	.0
Total	166	100.0
Unselected Cases	0	.0
Total	166	100.0

a. If weight is in effect, see classification table for the number of cases.

Dependent Variable encoding

Original Value	Internal Value
NO RRESPONSE	0
YES	1

BLOCK 0: BEGINNING BLOCK

CLASSIFICATION TABLE a,b

Observe	Predicted		
	DID FARMS ADOPT NEW TECHNIQUE SUCH AS USE AS USE OF TRACTOR BY THE ADP		
	NO RESPONSE	YES	Percent correct
Step 0 DID FARMS ADOPT NO RESPONSE	0	38	.0
NEW TECHHNUES SUCH AS USE OF YES TRACTOR BY THE ADP	0	128	100.0
Overall percentage			77.1

Variable in The Equation

	B	S.E	Wald	Df	Sig	Exp(B)
Step o constant	1.214	.185	43.216	1	.000	3.368

Descriptive Statistics

	Mean		Std.	Variance
	Statistic	Std. Error	Statistic	Statistic
AGE	46.3494	1.00575	12.95815	167.914
MAIZE(OUTPUT)	77.1506	4.89164	63.02435	3972.068
MAIZE(INCOME)	10782.229	869.40723	11201.529	1E+008
SORGHUM(OUTPUT)	200.8795	36.15713	465.85197	217018.06
SORGHUM (INCOME)				
RICE(OUTPUT)	4883.7349	330.16326	4253.8561	18095291
RICE(INCOME)	112.7229	25.42274	327.54907	107288.40
MILLET(OUTPUT)	2964.4578	368.29340	4745.1285	22516244
MILLET(INCOME)	41.0060	2.09114	26.94247	725.897
CATTLE(OUTPUT)	179320.72	9516.6419	122613.35	2E+010
CATTLE(INCOME)	.3072	.09541	1.22927	1.511
GOATS(OUTPUT)	16251.807	5258.4861	67750.854	5E+009
GOATS(INCOME)	.1325	.04402	.56721	.322
SHEEP(OUTPUT)	536.1446	198.94052	2563.1694	6569837.2
SHEEP(INCOME)	.0241	.01468	.18915	.336
POULTRY(OUTPUT)	164.4578	104.92792	1351.9017	1827638.2
POULTRY(INCOME)	2.0964	1.47826	19.04611	362.754
VALID N (listwise)	1975.9036	1393.3539	17952.109	3E+008

Variable Not In The Equation

		Score	Df	Sig.
Step Variables	V1	.804	1	.370
	V2	.097	1	.756
	V4	.086	1	.770

	V5	.120	1	.729
	V6	1.212	1	.271
	V7	1.105	1	.293
	V9	1.559	1	.212
	V10	.967	1	.325
Overall Statistics		5.931	8	.655

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	Df	sig
Step 1	Step	5.975	8	.650
	Block	5.975	8	.650
	Model	5.975	8	.650

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Negelkerke R Square
1	172.629[a]	.035	.054

a. Estimation terminated at iteration number e because parameter estimates changed by less than .001

Classification Table

	Predicted	
Observe	DID FARMS ADOPT NEW TECHNIQUE SUCH AS USE AS USE OF TRACTOR BY THE ADP	Percentage Correct

	NO RESPONSE	YES	
Step 0 DID FARMS ADOPT NO RESPONSE	1	37	2.6
NEW TECHHNUES			
SUCH AS USE OF YES	0	128	100.0
TRACTOR BY THE ADP			
Overall percentage			77.7

Variables in the equation

		B	S.E.	Wald	Df	Sig	Exp(B)
Step	V1	-.007	.016	.208	1	.648	.993
1[a]	V2	.559	.687	.664	1	.415	1.750
	V4	.083	.417	.040	1	.842	1.087
	V5	.011	.125	.008	1	.930	1.011
	V6	-.186	.146	1.613	1	.204	.830
	V7	-.113	.148	.585	1	.444	.893
	V9	-.348	.265	1.728	1	.189	.706
	V10	.055	.058	.916	1	.338	1.057
	Constant	1.737	1.339	1.683	1	.195	5.681

a. Variables(S) entered on step 1: V1, V2, V4, V5, V6, V7, V9, V10.

Regression

Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
	HAVE YOU RECEIVED ANY HELP FROM THE PROJECT(IN) GETTING THE ITEMS MENTIONED IN 13a) ENTENSION SERVICE BY ADP DO YOU DERIVE BENEFITE FROM		

	THESE ACTIVITIES, USE OF FERTILITIZER BY ADP, DID FARMS ADOPT NEW TECHNUES SUCH AS USE OF TRACTOR BY THE ADP, USE OF IRRIGATION MACINE BY ADP	Enter	

a. All Requested Variables Entered.

b. Dependent Variables: TOTAL OUTPUT

Model Summary

Model	R	R square	Adjusted	Std. Error of the Estimate
1	.204[a]	.041	-.001	72.27400

Model Summary

Model	Change Statistics				
	R Square Change	F Change	Df1	Df2	Sig. F Change
1	.041	.977	7	158	.450

a. Predictors: (Constant). HAVE YOU RECEIVED ANY HELP FROM THE PROJECT (IN GETTING THE ITEMS MENTIOED IN 13a), EXTENSION SERVICE BY ADP, DO YOU DERIVE BENEFITS FROM THESE ACTIVITIES. USE OF FERTILIZER BY ADP. DID FARMS ADOPT NEW TECHNUES SUCH AS USE OF TRACTOR BY THE ADP. IMPROVE SEED BY ADP. USE OF IRRIGATION MACHINE BY ADP

ANONA[b]

Model		Sum of square	Df	Mean square	F	Sig
1	Regression	35733.190	7	5104.741	.977	.450[B]
	Residual	825317.91	158	5223.531		
	Total	861051.09	165			

a. Predictors: (Constant). HAVE YOU RECEIVED ANY HELP FROM THE REOJECT (IN GETTING THE ITEMS MENTIONED IN 13a). EXTENSION SERVICE BY ADP. DO YOU DERIVE BENEFITS FROM THESE ACTIVITIES, USE OF FERTILIZER

BY ADP, DID FARMS ADOPT NEW TECHNUES SUCH AS USE OF TRACTOR BY THE ADO, IMPROVE SEED BY ADP, USE IRRIGATION MACHINE BY ADP

b. Dependent variables TOTAL _OUTPUT

Coefficients

Model		Unstandardized coefficient		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)					
	DID FARMS ADOPT NEW TECHNUES SUCH AS USE OFTRACTOR BY THE ADP	-12.231	68.988	.264	-.177	.860
	IMPROVE SEED BY ADP	45.269	33.878	-.049	1.336	.183
	USE OF FERTILIZER BY ADP	-7.96	26.558	.036	-.299	.765
	USE OF IRRIGATION	5.599	24.372	.255	.230	.819
	MACHINE SERVICE	42.207	34.947	-.026	1.208	.229
	EXTENSION SERIVICE BY ADP	-4.153	31.553	-.180	-.132	.895
	DO YOU DERIVE BENEFCITS FROM THESE ACTIVITIES	-20.168	10.457	.068	-.929	.056
	HAVE YOU RECEIVE ANY HELP FROM THE PROJECT(IN GETTING THE ITEMSMENTIOND IN 13a	6.286	8.652		.727	.469

a. Dependent variables :TOTAL_OUPUT

REGRESSION

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
Model	HAVE YOU RECEIVED ANY HELP FROM THE PROJECT(IN GETTING THE ITEMS MENTIONED IN 13a). EXTENSION SERVICE BY ADP DO YOU DERIVE BENEFITS FROM THESE ACTIVITIES, USE OF FERTILIZER BY ADP DID FARMS ADOPT NEW TECHNUES SUCH AS USE OF TRACTOT BY THE ADP. IMPROVE SEED BY ADP, USE OF IRRIGATION NACHING BY ADP[a]		Enter

a. All requested variable entered.

b. Dependent variables: TOTAL_INCOME

Model Summary

Model	R	R Square	Adjusted Square	Std. Error of
1	.242[a]	.058	.017	19772.47058

Model Summary

Model	Change Statistics				
	R Square Change	F Change	Df1	Df2	Sig. F Change
1	.058	1.400	7	158	.209

a. Predictors (Constant), HAVE YOU RECEIVED NAY HELP FROM THE PROJECT (IN GETTING THE ITEMS MENTIONED IN 13a), EXTENSION SERVICE BY ADP, DO YOU DERIVE BENEFITS FROM THESE ACTIVITIES. USE OF FERTILIZER BY

ADP, DID FARMS ADOPT NEW TECHNUES SUCH AS USE OF TRACTOR BY THE ADP. IMPROVE SEED BY ADP, USE OF IRRIGATION MACHINE BY ADP.

ANOVA[b]

Model		Sum of Squares	Df	Mean square	F	Sig.
1	Regression	4E+009	7	57205053.67	1.400	.209[a]
	Residual	6E+010	158	390950592.84		
	Total	7E+010	165			

a. Predictors:(Constant). HAVE YOU RECEIVED ANY HELP FROM THE PROJECT(IN GETTING THE ITEMS MENTIONED IN 13a) EXTENSION SERVICE BY ADP, DO YOU DERIVE BENEFITS FROM THESE NACTIVTIES. USE OF FETILIZER BY ADP. DID FARMS ADOPT NEW TECHNUES SUCH AS USE OF TRACTOR BY THE ADP, IMPROVE SEED BY ADP, USE OF CIRRIGATION MACHINE BY ADP

b. Dependent variable : TOTAL_INCOME

COEFFICIENTS[A]

Model		Un-standardized coefficient		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)					
	DID FARMS ADOPT NEW TECHNUES SUCH AS USE OF TRACTOR BY THE ADP	41748.922	18873.519	-.209	2.212	.028
	IMPROVE SEED BY ADP	-9880.035	9268.337	.009	-1.066	.288
	USE OF FERTILIZER BY ADP	393.546	7265.082	-.032	.054	.957
	USE OF IRRIGATION MACHINE SERVICE	-1378.049	6667.734	.141	-.207	.837
		6442.436	9560.552	-.185	.674	.501

EXTENSION SERIVICE BY ADP	-8219.975	8632.065	-.001	-.952	.342
DO YOU DERIVE BENEFFITS FROM THESE ACTIVITIES	-23.273	2860.857	-.146	-.008	.994
HAVE YOU RECEIVE ANY HELP FROM THE PROJECT(IN) GETTING THESE ITEMS MENTIOND IN 13a	-3753.304	2367.073		-1.586	.115

a. Dependent Variable: TOTAL_INCOME

T-TEST

Group Statistics

ARE YOU AWARE OF THE KAD	N	Mean	STD. Deviation	Std. Error Mean
TOTAL_OUTPUT YES	121	51.8977	67.80902	6.16446
	45	60.7222	83.49322	12.44644
TOTAL_INCOME YES	121	26423.507	17983.48090	1634.8619
	45	28045.214	24636.30629	3672.5637

Independent Samples Test

	Lenene's test for Equality of Variances	
	F	Sig
TOTAL_OUTPUT Equal variances Assumed	1.369	.244
Equal variances		

Not assumed		
TOTAL_INCOME Equal variances Assumed Equal variances Not assumed	4.844	.029

Independent Samples Test

TOTAL_OUTPUT	T.test for Equality means			
	T	Df	Sig. (2-tailed)	Mean Difference
Equal variances Assumed Equal variances	-699	164	.486	-8.82449
Not assumed	-635	66.761	.527	-8.82449
TOTAL_INCOME Equal variances Assumed Equal variances	-465	164	.643	-621.70666
Not assumed	-403	62.270	.688	-621.70666

Independent Sample Test

	T.test for Equality means		
	Std. Error Difference	95% Confidence interval of the difference	
		Lower	Upper
TOTAL_OUTPUT Equal variances Assumed Equal variances Not assumed	12.63288 13.88936	-33.76856 -36.54959	16.11957 18.90060
TOTAL_INCOME Equal variances Assumed Equal variances Not assumed	3489.80727 4020.01214	-8512.452 -9656.904	5269.0385 6413.4911

APPENDIX III

FREQUENCIES TABLE

Sex

	Frequencies	Percent	Valid percent	Cumulative percent
Valid male	137	82.5	82.5	82.5
Female	29	17.5	17.5	17.5
Total	166	100.0	100.0	

NO OF WIVES

	Frequency	Percent	Valid percent	Cumulative percent
Valid LERE	166	100.0	100.0	100.0

LOCAL GOVERNMENT

	Frequency	Percent	Valid percent	Cumulative percent
Valid .00	38	22.9	22.9	22.9
1.00	97	58.4	58.4	81.3
2.00	28	16.9	16.9	98.2
3.00	3	1.8	1.8	100.0
Total	166	100.0	100.0	

EDUCATIONAL QUALIFICATION

	Frequency	Percent	Valid percent	Cumulative percent
Valid NO RESPONSE	1	.6	.6	.6
PRIMARY	28	16.9	16.9	17.5
SECONDARY	7	4.2	4.2	21.7
ND	69	41.6	41.6	63.3
HND/BSC DEGREE	20	12.0	12.0	75.3
OTHERS	16	9.6	9.6	84.9
6.00	25	15.1	15.1	100.0
TOTAL	166	100.0	100.0	

WHAT IS YOUR PRIMARY OCCUPATION

	Frequency	Percent	Valid percent	Cumulative percent
Valid FARMER	87	52.4	52.4	52.4
CIVIL SERVANT	26	15.7	15.7	68.1
TRADING	26	15.7	15.7	83.7
ATSAN	18	10.8	10.8	94.6
OTHERS	9	5.4	5.4	100.0
TOTAL	166	100.0	100.0	

YEARS OF FARMING EXPERIENCE

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	18	10.8	10.8	10.8
RESPONSE	15	9.0	9.0	19.9
LESS THAN 2	25	15.1	15.1	34.9
YEARS	21	12.7	12.7	47.6
2-5 YEARS				
6-10 YEARS	87	52.4	52.4	100.0
MORE THAN 10				
YEARS	166	100.0	100.0	
TOTAL				

SECONDARY OCCUPATION

	Frequency	Percent	Valid percent	Cumulative percent
VALID FARMER	86	51.8	51.8	51.8
CIVIL SERVANT	28	16.9	16.9	68.7
TRADING	23	13.9	13.9	82.5
ATSAN	17	10.2	10.2	92.8
THERS	12	7.2	7.2	100.0
TOTAL	166	100.0	100.0	

SIZE OF FARM LAND

	Frequency	Percent	Valid percent	Cumulative percent
VALID .00	1	.6	.6	.6
1.00	110	66.3	66.3	66.9
1.20	2	1.2	1.2	68.1
1.30	1	.6	.6	68.7
1.40	3	1.8	1.8	70.5
1.50	10	6.0	6.0	76.5
1.60	4	2.4	2.4	78.9
2.00	16	9.6	9.6	88.6
2.10	1	.6	.6	89.2
2.20	2	1.2	1.2	90.4
2.30	2	1.2	1.2	91.6
2.40	2	1.2	1.2	92.8
2.50	4	2.4	2.4	95.2
2.60	1	.6	.6	95.8
2.80	1	.6	.6	96.4
3.00	1	.6	.6	97.0
3.40	1	.6	.6	97.6
3.50	2	1.2	1.2	98.8
4.00	1	.6	.6	99.4
5.60	1	.6	.6	100.0

TOTAL	166	100.0	100.0	

FAMILY SIZE

		Frequency	Percent	Valid percent	Cumulative percent
VALID	.00	7	4.2	4.2	4.2
	1.00	11	6.6	6.6	10.8
	2.00	37	22.3	22.3	33.1
	3.00	33	19.9	19.9	53.0
	4.00	19	11.4	11.4	64.5
	5.00	9	5.4	5.4	69.9
	6.00	13	7.8	7.8	77.7
	7.00	7	4.2	4.2	81.9
	8.00	11	6.6	6.6	88.6
	9.00	3	1.8	1.8	90.4
	10.00	3	1.8	1.8	92.2
	14.00	1	.6	.6	92.8
	15.00	2	1.2	1.2	94.0
	16.00	5	3.0	3.0	97.0
	17.00	1	.6	.6	97.6
	18.00	4	2.4	2.4	100.0
	TOTAL	166	100.0	100.0	

DID YOU OWN A FARM BEFORE THE KADP

		Frequency	Percent	Valid percent	Cumulative percent
VALID	NO RESPONSE	27	16.3	16.3	16.3
	YES	120	72.3	72.3	88.6
	NO	19	11.4	11.4	100.0
	TOTAL	166	100.0	100.0	

HAVE YOU ACQUIRED MORE FARMLAND IN THE LAST 4-5 YEAR

		Frequency	Percent	Valid percent	Cumulative percent
VALID	YES	104	62.7	62.7	62.7
	NO	62	37.3	37.3	100.0
	TOTAL	166	100.0	100.0	

ANY INCREASE IN FARM LAND SINCE 4 TO 5 AGO

		Frequency	Percent	Valid percent	Cumulative percent
VALID	YES	83	50.0	50.0	50.0
	NO	83	50.0	50.0	100.0

TOTAL	166	100.0		

HOW DID YOU ACQUIRED THE LAND

	Frequency	Percent	Valid percent	Cumulative percent
VALID	57	34.3	34.3	34.3
INHERITANCE	14	8.4	8.4	42.8
PURCHASE	17	10.2	10.2	53.0
PLEDGE	38	22.9	22.9	75.9
LOAN	20	12.0	12.0	88.0
LEASE	20	12.0	12.0	100.0
OTHERS	166	100.0	100.0	
TOTAL				

HOW DID YOU GET YOUR FERTILIZER

	Frequency	Percent	Valid percent	Cumulative percent
VALID ADP	48	28.9	28.9	28.9
MARKET	99	59.6	59.6	88.6
DIRECT FROM MARKET	7	4.2	4.2	92.8
POLITICAL PARTIES	12	7.2	7.2	100.0
TOTAL	166	100.0	100.0	

HOW DO TOU PLOUGH FIELD

	Frequency	Percent	Valid percent	Cumulative percent
VALID TRACTOR	23	13.9	13.9	13.9
FROM ADP	29	17.5	17.5	31.
OX-PLOUGH	33	19.9	19.9	51.2
USE DIRECT	81	48.8	48.8	100.0
LABOUR	166	100.0	100.0	
OTHERS				
TOTAL				

HOW DO YOU HARROW YOUR LAND

	Frequency	Percent	Valid percent	Cumulative percent
VALID TRACTOR FROM	23	13.9	13.9	13.9
ADP	27	16.3	16.3	30.1
OX-PLOUGH	101	60.8	60.8	91.0
USE DIRECT	14	8.4	8.4	99.4

LABOUR	1	.6	.6	100.0
OTHERS	166	100.0	100.0	
5.00				
TOTAL				

WHERE DO YOU GET YOUR SEED

	Frequency	Percent	Valid percent	Cumulative percent
VALID ADP	44	26.5	26.5	26.5
MARKET	110	66.3	66.3	92.8
DIRECT FROM MARKET	7	4.2	4.2	97.0
POLITICAL PARTIES	5	3.0	3.0	100.0
TOTAL	166	100.0	100.0	

ARE THE NEW FARMING TECHINES DEVELOPED IN YOUR AREA

	Frequency	Percent	Valid percent	Cumulative percent
VALID YES	108	65.1	65.1	65.1
NO	58	34.9	34.9	100.0
TOTAL	166	100.0	100.0	

DID FARMS ADOPT NEW TECHNIQUES SUCH AS USE OF TRACTOR BY ADP

	Frequency	Percent	Valid percent	Cumulative percent
VALID YES	128	77.1	77.1	77.1
NO	38	22.9	22.9	100.0
TOTAL	166	100.0	100.0	

IMPROVE SEED BY ADP

	Frequency	Percent	Valid percent	Cumulative percent
VALID YES	121	72.9	72.9	72.9
NO	45	27.1	27.1	100.0
TOTAL	166	100.0	100.0	

USE OF FERILIZER BY ADP

	Frequency	Percent	Valid percent	Cumulative percent
VALID YES	116	69.9	69.9	69.9
NO	50	30.1	30.1	100.0
TOTAL	166	100.0		

USE OF IRRIGATION MACHINE BY ADP

	Frequency	Percent	Valid percent	Cumulative percent
VALID YES	124	74.7	74.7	74.7
NO	42	25.3	25.3	100.0
TOTAL	166	100.0	100.0	

EXTENSION SERVICE BY ADP

	Frequency	Percent	Valid percent	Cumulative percent
VALID YES	120	72.3	72.3	72.3
NO	46	27.7	27.7	100.0
TOTAL	166	100.0	100.0	

ARE YOU AWARE OF THE KAD PROJECT

	Frequency	Percent	Valid percent	Cumulative percent
VALID YES	121	72.9	72.9	72.9
NO	45	27.1	27.1	100.0
TOTAL	166	100.0	100.0	

DO YOU DERIVE BENEFITS FROM THESE ACTIVITIES

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	39	23.5	23.5	23.5
RESPONSE	97	58.4	58.4	81.9
YES	30	18.1	18.1	100.0
NO	166	100.0	100.0	
TOTAL				

HAVE YOU RECEIVED ANY HELP FROM THE PROJECT (IN GETTING THE ITEMS MENTIONED IN 13a)

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	55	33.1	33.1	33.1
RESPONSE	66	39.8	39.8	72.9
YES	45	27.1	27.1	100.0
NO	166	100.0	100.0	
TOTAL				

HAVE YOU ANY PROBLEMS WITH REGARDS TO THE PURCHASE OF FERTILIZERS

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	46	27.7	27.7	27.7
RESPONSE	92	55.4	55.4	83.1

YES	28	16.9	16.9	100.0
NO	166	100.0	100.0	
TOTAL				

HAVE YOU ANY PROBLEMS WITH THE APPLICATION OF FERTILIZER

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	16	9.6	9.6	9.6
RESPONSE	36	21.7	21.7	31.3
YES	114	68.7	68.7	100.0
NO	166	100.0	100.0	
TOTAL				

HAS THE PROJECT STAFF HELPED YOU TO SOLVE THESE PROBLEMS

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	66	39.8	39.8	39.8
RESPONSE	79	47.6	47.6	87.3
YES	21	12.7	12.7	100.0
NO	166	100.0	100.0	
TOTAL				

HAVE YOU BEEN USING INSECTICIED

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	26	15.7	15.7	15.7
RESPONSE	120	72.3	72.3	88.0
YES	20	12.0	12.0	100.0
NO	166	100.0	100.0	
TOTAL				

DO YOU OWN A SPRAYER

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	29	17.5	17.5	17.5
RESPONSE	108	65.1	65.1	82.5
YES	29	17.5	17.5	100.0
NO	166	100.0	100.0	
TOTAL				

HAVE YOU ANY PROBLEMS IN THE PURCHASE IN THE PURCHASE OF EITHER INSECTICIDES OR SPRAYERS

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	45	27.1	27.1	27.1
RESPONSE	22	13.3	13.3	40.4

YES	99	59.6	59.6	100.0
NO	166	100.0	100.0	
TOTAL				

HAVE YOU ANY PROBLEM WITH THE USE OF A SPRAYER OR INSECTICIDES OR SPRAYERS

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	46	27.7	27.7	27.7
RESPONSE	21	12.7	12.7	40.4
YES	99	59.6	59.6	100.0
NO	166	100.0	100.0	
TOTAL				

WERE YOU AWARE OF SPRAYERS AND INSECTICIDES BEFOR THE PROJECT

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	15	9.0	9.0	9.0
RESPONSE	87	52.4	52.4	61.4
YES	64	38.6	38.6	100.0
NO	166	100.0	100.0	
TOTAL				

WERE YOU OF OX-PLOUGH BEFORE THE PROJECT

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	13	7.8	7.8	7.8
RESPONSE	92	55.4	55.4	63.3
YES	61	36.7	36.7	100.0
NO	166	100.0	100.0	
TOTAL				

WERE YOU AWARE OF TRACTORS BEFORE THE PROJECT

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	13	7.8	7.8	7.8
RESPONSE	118	71.1	71.1	78.9
YES	35	21.1	21.1	100.0
NO	166	100.0	100.0	
TOTAL				

DO YOU POSSES ANOX-PLOUGH

	Frequency	Percent	Valid percent	Cumulative

				percent
VALID NO	16	9.6	9.6	9.6
RESPONSE	44	26.5	26.5	36.1
YES	106	63.9	63.9	100.0
NO	166	100.0	100.0	
TOTAL				

HAVE YOU EVER USED OX-PLOUGH ON YOUR FARM

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	18	10.8	10.8	10.8
RESPONSE	62	37.3	37.3	48.2
YES	86	51.8	51.8	100.0
NO	166	100.0	100.0	
TOTAL				

DO YOU HAVE ANY PROBLEMS IN THE PURCHASE OF OX-PLOUGH

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	87	52.4	52.4	52.4
RESPONSE	44	26.5	26.5	78.9
YES	35	21.1	21.1	100.0
NO	166	100.0	100.0	
TOTAL				

DO YOU HAVE ANY PROBLEMS IN THE USE OF OX-PLOUGH

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	92	55.4	55.4.	55.4
RESPONSE	14	8.4	8.4	63.9
YES	60	36.1	36.1	100.0
NO	166	100.0	100.0	
TOTAL				

HAVE THE PROJECT STAFF HELPED TO SOLVE THESE PROBLEMS

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	94	56.6	56.6	56.6
RESPONSE	49	29.5	29.5	86.1
YES	23	13.9	13.9	100.0
NO	166	100.0	100.0	
TOTAL				

DO YOU OWN A TRACTOR

	Frequency	Percent	Valid percent	Cumulative percent

VALID NO	31	18.7	18.7	18.7
RESPONSE	24	14.5	14.5	33.1
YES	111	66.9	66.9	100.0
NO	166	100.0	100.0	
TOTAL				

HAVE YOU EVER USED TRACTOR ON YOUR FARM

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	31	18.7	18.7	18.7
RESPONSE	118	71.1	71.1	89.8
YES	17	10.2	10.2	100.0
NO	166	100.-	100.0	
TOTAL				

DO YOU HAVE ANY PROBLEMS IN THE PURCHASE OF TRACTORS

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	72	43.4	43.4	43.4
RESPONSE	65	39.2	39.2	82.5
YES	29	17.5	17.5	100.0
NO	166	100.0	100.0	
TOTAL				

DO YOU HAVE ANY PROBLEMS IN THE USE OF TRACTORS

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	65	39.2	39.2	39.2
RESPONSE	17	10.2	10.2	49.4
YES	84	50.6	50.6	100.0
NO	166	100.0	100.0	
TOTAL				

COULD YOU HAVE USED MORE BORROWED MONEY THAN YOU WERE ABLE TO BORROW

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	90	54.2	54.2	54.2
RESPONSE	29	17.5	17.5	71.7
YES	47	28.3	28.3	100.0
NO	166	100.0	100.0	
TOTAL				

DO YOU HAVE ANY PROBLEMS IN OBTAINING CREDIT FROM THE PROJECT

	Frequency	Percent	Valid percent	Cumulative percent

VALID NO	77	46.4	46.4	46.4
RESPONSE	49	29.5	29.5	75.9
YES	40	24.1	24.1	100.0
NO	166	100.0	100.0	
TOTAL				

DO YOU KNOW THAT THE PROJECTS SELLS SUCH GOODS AS SUGAR, MILK GENERATORS HUSKING MACHINE, GRINDING MACHINE

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	46	27.7	27.7	27.7
RESPONSE	58	34.9	34.9	62.7
YES	62	37.3	37.3	100.0
NO	166	100.0	100.0	
TOTAL				

IF YES, HAVE YOU EVER BOUGHT ANY OF SUCH GOODS FROM THE PROJECT

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	79	47.6	47.6	47.6
RESPONSE	44	26.5	26.5	74.1
YES	43	25.9	25.9	100.0
NO	166	100.0	100.0	
TOTAL				

HAVE YOU EVER MET ANY OF THE PROJECT'S EXTENSION STAFF

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	17	10.2	10.2	10.2
RESPONSE	127	76.5	76.5	86.7
YES	22	13.3	13.3	100.0
NO	166	100.0	100.0	
TOTAL				

IF YES HAVE YOU EVER TAKEN ANY PROBLEMS TO THE EXTENSION WORKERS

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	33	19.9	19.9	19.9
RESPONSE	113	68.1	68.1	88.0
YES	20	12.0	12.0	100.0
NO	166	100.0	100.0	
TOTAL				

IF YES DID YOU FIND THEIR SUGGESTIONS HELPFUL

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	40	24.1	24.1	24.1
RESPONSE	107	64.5	64.5	88.6
YES	19	11.4	11.4	100.0
NO	166	100.0	100.0	
TOTAL				

DO YOU KNOW OF THE PROJECT'S FEEDER ROADS

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	34	20.5	20.5	20.5
RESPONSE	80	48.2	48.2	68.7
YES	52	31.3	31.3	100
NO	166	100.0	100.0	
TOTAL				

ARE YOU AWARE OF THE DAMS CONSTRUCTED BY THE PROJECT

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	62	37.3	37.3	37.3
RESPONSE	35	21.1	21.1	58.4
YES	69	41.6	41.6	100.0
NO	166	100.0	100.0	
TOTAL				

DO YOU THINK YOU WOULD HAVE BENEFITED MORE FROM THE PROJECT, IF YOU WERE RICHER

	Frequency	Percent	Valid percent	Cumulative percent
VALID NO	51	30.7	30.7	30.7
RESPONSE	95	57.2	57.2	88.0
YES	20	12.0	12.0	100.0
NO	166	100.0	100.0	
TOTAL				

HOW MANY PEOPLE DO YOU FEED

	Frequency	Percent	Valid percent	Cumulative percent
VALID .00	13	7.8	7.8	7.8
2.00	1	.6	.6	8.4
3.00	3	1.8	1.8	10.2
4.00	4	2.4	2.4	12.7
5.00	8	4.8	4.8	17.5
6.00	4	2.4	2.4	19.9

7.00	6	3.6	3.6	23.5
8.00	8	4.8	4.8	28.3
9.00	15	9.0	9.0	37.3
10.00	23	13.9	13.9	51.2
11.00	7	4.2	4.2	55.4
12.00	8	4.8	4.8	60.2
13.00	6	3.6	3.6	63.9
14.00	6	3.6	3.6	67.5
15.00	11	6.6	6.6	74.1
16.00	5	3.0	3.0	77.1
17.00	6	3.6	3.6	80.7
18.00	6	3.6	3.6	84.3
19.00	1	.6	.6	84.9
20.00	8	4.8	4.8	89.8
21.00	3	1.8	1.8	91.6
22.00	2	1.2	1.2	92.8
25.00	3	1.8	1.8	94.6
28.00	2	1.2	1.2	95.8
30.00	3	1.8	1.8	97.6
31.00	1	.6	.6	98.2
38.00	1	.6	.6	98.2
80.00	1	.6	.6	99.4
100.00	1	.6	.6	100.0
Total	166	100.0	100.0	

APPENDIX 1

LOGIT REGRESSIONS

Case Processing Summary

Un weighted cases	N	Percent
Selected cases included in analysis	166	100.0
Missing cases	0	.0
Total	166	100.0
Unselected Cases	0	.0
Total	166	100.0

b. If weight is in effect, see classification table for the number of cases.

Dependent Variable encoding

Original Value	Internal Value
NO RRESPONSE YES	0 1

BLOCK 0: BEGINNING BLOCK

CLASSIFICATION TABLE a,b

Observe	Predicted		
	DID FARMS ADOPT NEW TECHNIQUE SUCH AS USE AS USE OF TRACTOR BY THE ADP		
	NO RESPONSE	YES	Percent correct
Step 0 DID FARMS ADOPT NO RESPONSE	0	38	.0
NEW TECHHNUES SUCH AS USE OF YES	0	128	100.0
TRACTOR BY THE ADP			77.1
Overall percentage			

Variable in The Equation

	B	S.E	Wald	Df	Sig	Exp(B)
Step o constant	1.214	.185	43.216	1	.000	3.368

Descriptive Statistics

	Mean		Std.	Variance
	Statistic	Std. Error	Statistic	Statistic
AGE	46.3494	1.00575	12.95815	167.914
MAIZE(OUTPUT)	77.1506	4.89164	63.02435	3972.068
MAIZE(INCOME)	10782.229	869.40723	11201.529	1E+008
SORGHUM(OUTPUT)	200.8795	36.15713	465.85197	217018.06
SORGHUM (INCOME)				
RICE(OUTPUT)	4883.7349	330.16326	4253.8561	18095291
RICE(INCOME)	112.7229	25.42274	327.54907	107288.40
MILLET(OUTPUT)	2964.4578	368.29340	4745.1285	22516244
MILLET(INCOME)	41.0060	2.09114	26.94247	725.897
CATTLE(OUTPUT)	179320.72	9516.6419	122613.35	2E+010
CATTLE(INCOME)	.3072	.09541	1.22927	1.511
GOATS(OUTPUT)	16251.807	5258.4861	67750.854	5E+009
GOATS(INCOME)	.1325	.04402	.56721	.322
SHEEP(OUTPUT)	536.1446	198.94052	2563.1694	6569837.2
SHEEP(INCOME)	.0241	.01468	.18915	.336
POULTRY(OUTPUT)	164.4578	104.92792	1351.9017	1827638.2
POULTRY(INCOME)	2.0964	1.47826	19.04611	362.754
VALID N (listwise)	1975.9036	1393.3539	17952.109	3E+008

Variable Not In The Equation

		Score	Df	Sig.
Step Variables	V1	.804	1	.370
	V2	.097	1	.756
	V4	.086	1	.770
	V5	.120	1	.729

	V6	1.212	1	.271
	V7	1.105	1	.293
	V9	1.559	1	.212
	V10	.967	1	.325
Overall Statistics		5.931	8	.655

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	Df	sig
Step 1	Step	5.975	8	.650
	Block	5.975	8	.650
	Model	5.975	8	.650

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Negelkerke R Square
1	172.629[a]	.035	.054

a. Estimation terminated at iteration number e because parameter estimates changed by less than .001

Classification Table

	Predicted	
Observe	DID FARMS ADOPT NEW TECHNIQUE SUCH AS USE AS USE OF TRACTOR BY THE ADP	Percentage Correct

	NO RESPONSE	YES	
Step 0 DID FARMS ADOPT NO RESPONSE	1	37	2.6
NEW TECHHNUES			
SUCH AS USE OF YES	0	128	100.0
TRACTOR BY THE ADP			
Overall percentage			77.7

Variables in the equation

		B	S.E.	Wald	Df	Sig	Exp(B)
Step	V1	-.007	.016	.208	1	.648	.993
1[a]	V2	.559	.687	.664	1	.415	1.750
	V4	.083	.417	.040	1	.842	1.087
	V5	.011	.125	.008	1	.930	1.011
	V6	-.186	.146	1.613	1	.204	.830
	V7	-.113	.148	.585	1	.444	.893
	V9	-.348	.265	1.728	1	.189	.706
	V10	.055	.058	.916	1	.338	1.057
	Constant	1.737	1.339	1.683	1	.195	5.681

a. Variables(S) entered on step 1: V1, V2, V4, V5, V6, V7, V9, V10.

Regression

Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
	HAVE YOU RECEIVED ANY HELP FROM THE PROJECT(IN) GETTING THE ITEMS MENTIONED IN 13a) ENTENSION SERVICE BY ADP DO YOU DERIVE BENEFITE FROM		

	THESE ACTIVITIES, USE OF FERTILITIZER BY ADP, DID FARMS ADOPT NEW TECHNUES SUCH AS USE OF TRACTOR BY THE ADP, USE OF IRRIGATION MACINE BY ADP	Enter	

c. All Requested Variables Entered.

d. Dependent Variables: TOTAL OUTPUT

Model Summary

Model	R	R square	Adjusted	Std. Error of the Estimate
1	.204[a]	.041	-.001	72.27400

Model Summary

Model	Change Statistics				
	R Square Change	F Change	Df1	Df2	Sig. F Change
1	.041	.977	7	158	.450

b. Predictors: (Constant). HAVE YOU RECEIVED ANY HELP FROM THE PROJECT (IN GETTING THE ITEMS MENTIOED IN 13a), EXTENSION SERVICE BY ADP, DO YOU DERIVE BENEFITS FROM THESE ACTIVITIES. USE OF FERTILIZER BY ADP. DID FARMS ADOPT NEW TECHNUES SUCH AS USE OF TRACTOR BY THE ADP. IMPROVE SEED BY ADP. USE OF IRRIGATION MACHINE BY ADP

ANONA[b]

Model		Sum of square	Df	Mean square	F	Sig
1	Regression	35733.190	7	5104.741	.977	.450[B]
	Residual	825317.91	158	5223.531		
	Total	861051.09	165			

c. Predictors: (Constant). HAVE YOU RECEIVED ANY HELP FROM THE REOJECT (IN GETTING THE ITEMS MENTIONED IN 13a). EXTENSION SERVICE BY ADP. DO YOU DERIVE BENEFITS FROM THESE ACTIVITIES, USE OF FERTILIZER

BY ADP, DID FARMS ADOPT NEW TECHNUES SUCH AS USE OF TRACTOR BY THE ADO, IMPROVE SEED BY ADP, USE IRRIGATION MACHINE BY ADP

d. Dependent variables TOTAL _OUTPUT

Coefficients

Model		Unstandardized coefficient		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)					
	DID FARMS ADOPT NEW TECHNUES SUCH AS USE OFTRACTOR BY THE ADP	-12.231	68.988	.264	-.177	.860
	IMPROVE SEED BY ADP	45.269	33.878	-.049	1.336	.183
	USE OF FERTILIZER BY ADP	-7.96	26.558	.036	-.299	.765
	USE OF IRRIGATION	5.599	24.372	.255	.230	.819
	MACHINE SERVICE	42.207	34.947	-.026	1.208	.229
	EXTENSION SERIVICE BY ADP	-4.153	31.553	-.180	-.132	.895
	DO YOU DERIVE BENEFCITS FROM THESE ACTIVITIES	-20.168	10.457	.068	-.929	.056
	HAVE YOU RECEIVE ANY HELP FROM THE PROJECT(IN GETTING THE ITEMSMENTIOND IN 13a	6.286	8.652		.727	.469

b. Dependent variables :TOTAL_OUPUT

REGRESSION

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
Model	HAVE YOU RECEIVED ANY HELP FROM THE PROJECT(IN GETTING THE ITEMS MENTIONED IN 13a). EXTENSION SERVICE BY ADP DO YOU DERIVE BENEFITS FROM THESE ACTIVITIES, USE OF FERTILIZER BY ADP DID FARMS ADOPT NEW TECHNUES SUCH AS USE OF TRACTOT BY THE ADP. IMPROVE SEED BY ADP, USE OF IRRIGATION NACHING BY ADP[a]		Enter

c. All requested variable entered.

d. Dependent variables: TOTAL_INCOME

Model Summary

Model	R	R Square	Adjusted Square	Std. Error of
1	.242[a]	.058	.017	19772.47058

Model Summary

Model	Change Statistics				
	R Square Change	F Change	Df1	Df2	Sig. F Change
1	.058	1.400	7	158	.209

b. Predictors (Constant), HAVE YOU RECEIVED NAY HELP FROM THE PROJECT (IN GETTING THE ITEMS MENTIONED IN 13a), EXTENSION SERVICE BY ADP, DO YOU DERIVE BENEFITS FROM THESE ACTIVITIES. USE OF FERTILIZER BY

ADP, DID FARMS ADOPT NEW TECHNUES SUCH AS USE OF TRACTOR BY THE ADP. IMPROVE SEED BY ADP, USE OF IRRIGATION MACHINE BY ADP.

ANOVA[b]

Model		Sum of Squares	Df	Mean square	F	Sig.
1	Regression	4E+009	7	57205053.67	1.400	.209[a]
	Residual	6E+010	158	390950592.84		
	Total	7E+010	165			

c. Predictors:(Constant). HAVE YOU RECEIVED ANY HELP FROM THE PROJECT(IN GETTING THE ITEMS MENTIONED IN 13a) EXTENSION SERVICE BY ADP, DO YOU DERIVE BENEFITS FROM THESE NACTIVTIES. USE OF FETILIZER BY ADP. DID FARMS ADOPT NEW TECHNUES SUCH AS USE OF TRACTOR BY THE ADP, IMPROVE SEED BY ADP, USE OF CIRRIGATION MACHINE BY ADP

d. Dependent variable : TOTAL_INCOME

COEFFICIENTS[A]

Model		Un-standardized coefficient		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)					
	DID FARMS ADOPT NEW TECHNUES SUCH AS USE OF TRACTOR BY THE ADP	41748.922	18873.519	-.209	2.212	.028
	IMPROVE SEED BY ADP	-9880.035	9268.337	.009	-1.066	.288
	USE OF FERTILIZER BY ADP	393.546	7265.082	-.032	.054	.957
	USE OF IRRIGATION MACHINE SERVICE	-1378.049	6667.734	.141	-.207	.837
		6442.436	9560.552	-.185	.674	.501

cli

EXTENSION SERIVICE BY ADP	-8219.975	8632.065	-.001	-.952	.342
DO YOU DERIVE BENEFFITS FROM THESE ACTIVITIES	-23.273	2860.857	-.146	-.008	.994
HAVE YOU RECEIVE ANY HELP FROM THE PROJECT(IN) GETTING THESE ITEMS MENTIOND IN 13a	-3753.304	2367.073		-1.586	.115

b. Dependent Variable: TOTAL_INCOME

T-TEST

Group Statistics

ARE YOU AWARE OF THE KAD	N	Mean	STD. Deviation	Std. Error Mean
TOTAL_OUTPUT YES	121	51.8977	67.80902	6.16446
	45	60.7222	83.49322	12.44644
TOTAL_INCOME YES	121	26423.507	17983.48090	1634.8619
	45	28045.214	24636.30629	3672.5637

Independent Samples Test

	Lenene's test for Equality of Variances	
	F	Sig
TOTAL_OUTPUT Equal variances Assumed	1.369	.244
Equal variances		

Not assumed		
TOTAL_INCOME Equal variances Assumed Equal variances Not assumed	4.844	.029

Independent Samples Test

TOTAL_OUTPUT	T.test for Equality means			
	T	Df	Sig. (2-tailed)	Mean Difference
Equal variances Assumed Equal variances	-699	164	.486	-8.82449
Not assumed	-635	66.761	.527	-8.82449
TOTAL_INCOME Equal variances Assumed Equal variances	-465	164	.643	-621.70666
Not assumed	-403	62.270	.688	-621.70666

Independent Sample Test

	T.test for Equality means		
	Std. Error Difference	95% Confidence interval of the difference	
		Lower	Upper
TOTAL_OUTPUT Equal variances Assumed Equal variances Not assumed	12.63288 13.88936	-33.76856 -36.54959	16.11957 18.90060
TOTAL_INCOME Equal variances Assumed Equal variances Not assumed	3489.80727 4020.01214	-8512.452 -9656.904	5269.0385 6413.4911

APPENDIX II

1.1 Population by Gender

sex	Frequency	Percentage
Male	137	82.5
Female	29	17.5
Total	166	100.0

1.2 Number of Wives

Wife	Frequency	Percentage
0	38	22.9
1	97	58.4
2	28	16.9
3	3	1.8
Total	166	100.0

1.3 Educational Qualification

Educational level	Frequency	Percentage
No response	1	0.6
Primary	28	16.9
Secondary	7	4.2
ND	69	41.6
HND/BSC	20	12.0
Other	16	15.1

Total	166	100.0

1.4 What is Your Primary Occupation?

Occupation	Frequency	Percentage
Farmer	87	52.4
Civil servant	26	15.7
Trading	26	15.7
Artisan	18	10.8
Others	9	5.4
Total	166	100.0

1.5 Years of Farming Experience

Responses	Frequency	Percentage
No response	18	10.8
Less than 2 years	15	9.0
2 – 5 years	25	15.1
6 – 10 years	21	12.7
More than 10 years	87	52.4
Total	166	100.0

1.6 Secondary Occupation

Occupation	Frequency	Percentage
Farmers	86	51.8
Civil servant	28	16.9
Trading	23	13.9
Artisan	17	10.2
Others	12	7.2
Total	166	100.0

1.7 Size of Farm Land

Farm size	Frequency	Percentage
1 Hecter	0	0
1-1.9 hecter	131	78.92
2-2.9 hecter	29	17.47
3-3.9 hecter	4	2.41
4 – 4.9 hecter	1	0.60
5-6 hecter	1	0.60
Total	166	100.0

1.8 Family Size

Number	Frequency	Percentage
1-5	116	69.88
6-10	37	22.29
11-15	3	1.81

16-20	10	6.02
Total	166	100.0

1.9 Did You Own a Farm Before the KADP?

Responses	Frequency	Percentage
No response	27	16.3
Yes	120	72.3
No	19	11.4
Total	166	100.0

1.10 Have You Acquired More Farmland in the Last 4-5 Years?

Responses	Frequency	Percentage
Yes	104	62.7
No	62	37.3
Total	166	100.0

1.11 Any Increase in Farm Land Since 4-5 Years Ago?

Responses	Frequency	Percentage
Yes	83	50.0
No	83	50.0
Total	166	100.0

1.12 How Did You Acquire the Land?

Acquisition	Frequency	Percentage
Inheritance	57	34.3
Purchase	14	8.4
Pledge	17	10.2
Loan	38	22.9
Lease	20	12.0
Others	20	12.0
Total	166	100.0

1.13 How Did You Get Your Fertilizer?

Fertilizer acquisition	Frequency	Percentage
ADP	48	28.9
Market	99	59.6
Direct from market	7	4.2
Political parties	12	7.2
Total	166	100.0

1.14 How Do You Plough Field?

Ploughing	Frequency	Percentage
Tractor from ADP	23	13.9
Ox-plough	29	17.4

Use direct labour	33	19.9
Others	81	48.8
Total	166	100.0

1.15 How Do You Harrow Your Land?

Harrowing	Frequency	Percentage
Tractor from ADP	23	13.9
Ox-plough	27	16.3
Use direct labour	101	60.8
Others	15	9.0
Total	166	100.0

1.16 Where Do You Get Your Seeds?

Seed acquisition	Frequency	Percentage
ADP	23	13.9
Market	117	70.5
Political parties	22	13.3
Others	4	2.4
Total	166	100.0

1.17 Where Do You Get Your Chemicals?

Chemical	Frequency	Percentage

acquisition		
ADP	44	26.5
Market	110	66.3
Political parties	7	4.2
Others	5	3.0
Total	166	100.0

1.18 Are There New Farming Techniques Developed in Your Area?

Responses	Frequency	Percentage
Yes	108	65.1
No	58	34.9
Total	166	100.0

1.19 Did Farms Adopt New Techniques Such as Use of Tractor by ADP?

Responses	Frequency	Percentage
Yes	128	77.1
No	38	22.9
Total	166	100.0

1.20 Improve Seed By ADP

Responses	Frequency	Percentage
Yes	121	72.9
No	45	27.1
Total	166	100.0

1.21 Do You Use Fertilizers By ADP?

Responses	Frequency	Percentage
Yes	116	69.9
No	50	30.1
Total	166	100.0

1.22 Do You Use Irrigation Machine By ADP?

Responses	Frequency	Percentage
Yes	124	74.7
No	42	25.3
Total	166	100.0

1.23 Extension Service By ADP

Responses	Frequency	Percentage
Yes	120	72.3
No	46	27.7
Total	166	100.0

1.24 Are You Aware of the KAD Project?

Responses	Frequency	Percentage
Yes	121	72.9
No	45	27.1
Total	166	100.0

1.25 Do You Derive Benefits From These Activities?

Responses	Frequency	Percentage
No response	39	
Yes	97	
No	30	
Total	166	100.0

1.26 Have You Received Any Help From The Projection (In Getting The Items Mentioned In 13 Above)

Responses	Frequency	Percentage
No response	55	33.1
Yes	66	39.8
No	45	27.1
Total	166	100.0

1.27 Have You Any Problems With Regards To The

Purchase Of Fertilizers

Responses	Frequency	Percentage
No response	46	27.7
Yes	92	55.4
No	28	16.9
Total	166	100.0

1.28 Have You Any Problems With the Application of Fertilizers?

Responses	Frequency	Percentage
No response	16	9.6
Yes	36	21.7
No	114	68.7
Total	166	100.0

1.29 Has The Project Staff Helped You To Solve These Problems

Responses	Frequency	Percentage
No response	66	39.8
Yes	79	47.6
No	21	12.7
Total	166	100.0

1.30 Have You Been Using Insecticides?

Responses	Frequency	Percentage
No response	26	15.7
Yes	120	72.3
No	20	12.0
Total	166	100.0

1.33 Do you own a sprayer?

Responses	Frequency	Percentage
No response	29	17.5
Yes	108	65.5
No	29	17.5
Total	166	100.0

1.32 Have You Any Problems in the Purchase of Either Insecticides or Sprayers?

Responses	Frequency	Percentage
No response	45	27.1
Yes	22	13.3
No	99	59.6
Total	166	100.0

1.33 Have You Any Problem With the Use of a Sprayer or Insecticides?

Responses	Frequency	Percentage
No response	46	27.7
Yes	21	12.7
No	99	59.6
Total	166	100.0

1.34 Were You Aware Of Sprayers And Insecticides Before The Project?

Responses	Frequency	Percentage
No response	15	9.0
Yes	87	52.4
No	64	38.6
Total	166	100.0

1.35 Were You Aware Of Ox-Plough Before The Project?

Responses	Frequency	Percentage
No response	13	7.8
Yes	92	71.1
No	61	21.1
Total	166	100.0

1.36 Were You Aware Of Tractors Before The Project?

Responses	Frequency	Percentage
No response	13	7.8
Yes	118	71.1
No	35	21.1
Total	166	100.0

1.37 Do You Possess an Ox-plough?

Responses	Frequency	Percentage
No response	16	9.6
Yes	44	26.5
No	106	63.9
Total	166	100.0

1.38 Have You ever Used Ox-plough on Your Farm?

Responses	Frequency	Percentage
No response	18	10.8
Yes	62	37.3
No	86	51.8
Total	166	100.0

1.39 Do You Have Any Problems in the Purchase of Ox-plough?

Responses	Frequency	Percentage
No response	87	52.4
Yes	44	26.5
No	35	21.1

Total	166	100.0

1.40 Do You Have Any Problems in the Use of Ox-plough?

Responses	Frequency	Percentage
No response	92	55.4
Yes	14	8.4
No	60	36.1
Total	166	100.0

1.41 Have the Project Staff Helped to Solve these Problems?

Responses	Frequency	Percentage
No response	94	56.6
Yes	49	29.5
No	23	13.9
Total	166	100.0

1.42 Do You Own a Tractor?

Responses	Frequency	Percentage
No response	31	18.7
Yes	24	14.5
No	111	66.9
Total	166	100.0

1.43 Have You Ever Used a Tractor on Your Farm?

Responses	Frequency	Percentage
No response	31	18.7
Yes	118	71.1
No	17	10.2
Total	166	100.0

1.44 Do you have any problems in the purchase of tractors?

Responses	Frequency	Percentage
No response	72	43.4
Yes	65	39.2
No	29	17.5
Total	166	100.0

1.45 Do you have any problems in the use of tractor?

Responses	Frequency	Percentage
No response	65	39.2
Yes	17	10.2
No	84	50.6
Total	166	100.0

1.46 Could you have used more borrowed money than you were able to borrow?

Responses	Frequency	Percentage
No response	90	54.2
Yes	29	17.5
No	47	28.3
Total	166	100.0

1.47 Do you have any problems in obtaining credit from the project?

Responses	Frequency	Percentage
No response	77	46.4
Yes	49	29.5
No	40	24.1
Total	166	100.0

1.48 Do you know what the projects sell such goods as sugar, milk generators, husking machine, and grinding machine?

Responses	Frequency	Percentage
No response	46	27.7
Yes	58	34.9
No	62	37.3
Total	166	100.0

1.49 If yes, have you ever bought any of such goods from the project?

Responses	Frequency	Percentage
No response	79	47.6
Yes	44	26.5
No	43	25.9
Total	166	100.0

1.50 Have you ever met any of the project's extension staff?

Responses	Frequency	Percentage
No response	17	10.2
Yes	127	76.5
No	22	13.3
Total	166	100.0

1.51 If yes, have you ever taken any problems to the extension workers?

Responses	Frequency	Percentage
No response	33	19.9
Yes	113	68.1
No	20	12.0
Total	166	100.0

1.52 If yes, did you find their suggestions helpful?

Responses	Frequency	Percentage
No response	40	24.1
Yes	107	64.5
No	19	11.4
Total	166	100.0

1.53 Do you know of the project's feeder roads?

Responses	Frequency	Percentage
No response	34	20.5
Yes	80	48.3
No	52	31.3
Total	166	100.0

1.54 Are you aware of the dams constructed by the project?

Responses	Frequency	Percentage
No response	62	37.3
Yes	35	21.1
No	69	41.6
Total	166	100.0

1.55 Do you think you would have benefited more from the project if you were richer?

Responses	Frequency	Percentage
No response	51	30.7
Yes	95	57.2
No	20	12.0
Total	166	100.0

1.56 How many people do you feed?

No. of People	Frequency	Percentage
1-5	29	17.5
6-10	56	33.7
11-15	38	22.9
16-20	26	15.7
21-25	8	4.8
26-30	5	3.0
31-35	1	0.6
36-40	1	0.6
41 and above	2	1.2
Total	166	100.0

APPENDIX III

APPRAISAL OF THE IMPACT OF KADUNA AGRICULTURAL DEVELOPMENT PRJECT (KADP) ON THE SOCIO ECONOMIC WELL-BEING OF THE PEOPLE OF LERE LOCAL GOVERNMENT KADUNA STATE

The purpose of this survey is to assess how the Kaduna Agricultural Development project (KADP) has raised agricultural production and productivity; and whether it has affected the socio-economic well being of various sections of the rural population and with what results.

_____

(a) Name of Village_____ (b) Unguwa:_____

(c) Compound No._____ (d) Name of Respondent_____

_____ (e) Age_____

(f) Place of Birth_____ _____

Village District

_____

LGA

(g) Name of Interviewer_____ Date_____

_____

(a) What is your main occupation during the dry season?_____

_____

(b) For how many years have you been doing that work?

Less than 2 years_____ 2-5 years_____

6-10 years_____ More than 10 years_____

(c) Do you have any other occupation or ways of making money during the dry season?

(LIST ALL WAYS MENTIONED AND CIRCLE THE MOST IMPORTANT

6. _____

7. _____

8. _____

9. _____

10. _____

2. (a) What your main occupation during the rainy season?_____

_____

(b) For how many years have you been doing that work?

Less than 2 years_____ 2-5 years_____

6-10 years_____ More than 10 years_____

(c) Do you have any other occupations or way of making money during the rainy season?

(LIST ALL WAYS MENTIONED AND CIRCLE THE MOST IMPORTANT ONE)

6. _____

7. _____

8. _____

9. _____

10. _____

3. (a) Do you own a farm? Yes No

(b) If yes how many fields_____

(c) Give the size of each field (i) _____ (ii) _____

(iii) _____ (iv) _____

(d) If you do not own a farm give reasons why not_____

_____

4. Have you acquired more farmland in the last 4-5 years Yes/No

5. If answer to Q4 is yes please give details of how such farmland was acquired

(a) Inheritance (Gado)_____ (b) Allocation/Gift (Kyauta)_____

(c) Purchase (Saye)_____ (d) Pledge (Jingina)_____

(e) Loan (Aro)_____ (f) Lease (Haya)_____

(g) Sharo-cropping (Kashe muraba)_____

(h) Cleared bush without asking the village head_____

6. Why did you decide to acquire extra field in the last 4-5 years?

a	Had a bigger family, more workers
b	To plant more and grain more money
c	Purchased a plough to work more fields
d	Acquire loan to invest in farming

e	More inputs now available
f	To get prestige
g	Others

7. What crops did you grow on your this year?

   1. _____ 2._____ 3._____

   4. _____ 5._____ 6._____

(b) Have you introduced new crops on your farm in the 4 years? Give details:

New crop	Reasons for introduction

8. Do any family members help you with farm work? Yes/No

9. If the answer to question 8 is YES please fill in the following chart:

   Person helping respondent with farm work:

S/N	Name	Male or Female	Age	Kinship relationship	Work done	Paid or unpaid
1						
2						
3						
4						
5						

6						

10. The following questions relate specifically to the KAD project Lere Local Gov't.

11. (a) Are you aware of the KAD Project? Yes/No

(b) What project activities do you know about?_____

_____

12. (a) Do you derive benefits from these activities Yes/No

(b) If yes state the benefits_____

_____

13. (a) List the inputs you regard as important for your farming?

1. _____ 2._____

3. _____ 3._____

5. _____ 6._____

14. What are your problems in farming?

1. _____

2. _____

3. _____

4. _____

15. (a) Have you received any help from the project (in getting the items mentioned in 13a)? Yes/No

(b) If No please give reasons why_____

_____

(c) If Yes state what sort of help?_____

_____

16. What changes have you noticed (agricultural and otherwise) in this village since the beginning of the KADP.

1. _____

2. _____

3. _____

4. _____

17. (a) What are you objectives in farming?_____

_____

(b) How can you achieve these objectives?_____

_____

(c) If Yes give how many bags you have bought in the following years.

Years			Where Bought
	Unit	Number	
1987			
1988			
1989			
1990			
1991			
1992			
1993			
1994			
1995			
1996			
1997			

20. (a) Where will you prefer to buy your fertilizer?_____

1. _____

2. _____

(b) Please give reasons for the preference_____

_____

21. (a) Have you any problems with regards to the purchase of fertilizers? Yes/No

(b) If Yes give a list of the problems (1) _____

(2) _____ (3) _____

(4) _____

(c) Have you any problems with the application of fertilizer? Yes/No

(d) Has the project staff helped you to solve these problems? Yes/No

22. (a) Have you been using insecticide? Yes/No

(b) If not why? _____

_____

(c) If yes give the following information:

Years			Where Bought
	Unit	Number	
1987			
1988			
1989			
1990			
1991			
1992			
1993			
1994			
1995			
1996			
1997			

23. (a) Do you own a sprayer? Yes/No

24. (b) If not why?_____

(c) If yes give the following information?

Years	Number Purchased	Where Purchased

25. Have you any problems in the purchase of either insecticides or sprayers? Yes/No

26. Have you any problems with the use of a sprayer or insecticides or sprayer? Yes/No

If Yes please give details 1. _____

2. _____ 3. _____

27. In what ways has the project helped you to solve these problems?

_____

_____

28. Were you aware of sprayer and insecticides before the project? Yes/No

29. Were you aware of Ox-plough before the project? Yes/No

30. Were you aware of tractors before the project? Yes/No

31. Do you possess an Ox-plought (s) Yes/No

If No state reasons why?_____

_____

32. (a) Have you ever used Ox-plough on your farm (s)? Yes/No

(b) If not why?_____

(c) If yes how did you obtain an Ox-plough?_____

_____

33. (a) If you posses an Ox-plough(s) give the following information:

No of Ploughs	Year of purchase	Where purchased	
		Place	Price

34. Do you any problems in the purchase of Ox-plough? Yes/No

If yes please give details: 1. _____

2. _____

3. _____

35. Do you have any problems in the use of Ox-plough(s)? Yes/No

If yes please give details: 1. _____

2. _____

3. _____

36. Have the project staff helped to solve these problems? Yes/No

37. How can the project help you better in solving these problems?

_____

38. Do you own a tractor? Yes/No

If not why?_____

39. (a) Have you ever used tractor on your farm(s) Yes/No

(b) If yes how did you obtain tractor service?_____

_____

40. If you posses a tractor give the following information:

No of tractors	Year of purchase	Where purchased	Source of Loan

41. (a) Do you have any problems in the purchase of tractor(s) Yes/No

(b) If yes list the problems _____

_____

(c) Do you have any problems in the use of tractor? Yes/No

(d) If yes list the problems _____

_____

42. In which ways can the project help farmers to own and maintain tractors(s)

43. What advantages if any do you see in using modern implements?

(tractors Ox-plough etc?)_____

_____

44. If you employed farm labour and purchased some items to facilitate your farming activities from where did you get the money to make these expenditures?

_____

45. From where did you get the money to meet expenditures for ceremonial or unexpected happenings?

Ans. _____

46. If you have borrowed money since last April from whom did you borrow it?

Ans. _____

(relative) (friend) (village head) (trader)

47. Is this person living in the village or his/she from outside the village?

Ans. _____

48. Where else might you have been able to borrow the money you needed?

Ans. _____

49. For what purpose did you use this borrowed money?_____

_____

50. Could you have used more borrowed money than you were able to borrow?

_____ Yes _____ No

51. Could you have used the additional money for? Ans. _____

_____

52. For how long will you keep the money before paying in back to the person borrowed from?

Ans. _____

53. If you ever obtain credit from the project please give the following information.

Year	Amount	Purpose	Period		Nature	
			From	To	By Instalment	Al Once

54. (a) Are you aware of the interest rate charged? Yes/No Give the rate.

55. (a) Do you have any problems in obtaining credit from the project? Yes/No

(b) If yes list the problems 1. _____

2. _____ 3. _____

(c) Please suggest possible solutions to these problems:_____

_____

56. (a) Do you know that the projects sells such goods as sugar, milk. Generators husking machine, grinding machine. Yes/No

(b) If yes have you ever bought any of such goods from the project? Yes/No

(c) If No why? _____

_____

(d) If yes give the following:

Year	Item purchased	Quantity Price

EXTENSION SERVICE

(a) Have you ever met any of the project's extension staff? Yes/No

(b) If yes have you ever taken any problems to the extension workers? Yes/No

(c) If no state why? _____

_____

_____

(d) If yes did you find their suggestions helpful? Yes/No

What problems have you that relate to extension services? _____

_____

How could the project's extension services be improved? _____

_____

_____

Do you know of the project's feeder roads? Yes/No

If yes what benefits do you derive from these roads? _____

_____

61. In which ways can the movement of goods to markets be improved in your locality?

_____

62. Are you aware of the dams constructed by the project? Yes/No

Thank you very much for answering my questions.