THE EFFECTS OF COOPERATIVE ORGANIZATIONS ON FARMERS' OUTPUT IN FUFORE LOCAL GOVERNMENT AREA OF ADAMAWA STATE

BY

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BEING A THESIS SUBMITTED TO THE DEPARTMENT OF GEOGRAPHY, SCHOOL OF ENVIRONMENTAL SCIENCE, FEDERAL UNIVERSITY OF TECHNOLOGY YOLA

IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF DEGREE OF MASTER OF SCIENCE (M.Sc) RURAL DEVELOPMENT.

DEDICATION

I declare that this work was carried out in its original form by Adamu Ardo Bello of the Department of Geography, Centre for Distance Learning, Federal University of Technology, Yola, Nigeria

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Sign Date

APPROVAL PAGE

This thesis entitled the effect of cooperative organizations on rural farmers' productivity in Fufore Local Government Area of Adamawa State by Adamu Ardo Bello meet the regulations governing the award of M.Sc Degree in Rural Development, Centre for Distance Learning, Federal University of Technology, Yola and is approved for its contribution to knowledge and literacy presentation.

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DEDICATION

This work is dedicated to all my Descendants.

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ABSTRACT

This study examined the effect of cooperative organizations on rural farmers' productivity in Fufore Local Government Area of Adamawa State. A total of 200 respondents who belong to cooperative organizations were selected from the four local government development areas and the local government headquarters. Questionnaires were administered to these respondents on their farming activities as members of the organizations. Results reveal that 44.5% of respondents practice crop cultivation, 26% acquired their land through inheritance, 51% confirm getting assistance from their organizations while only 5% confirm having incentives from government. Result of the regression analysis indicate that among the nine independent variables specified in the model, only five-literacy level (X_2), farm size (X_4), experience (X_5), family size (X_6), and marital status (X_1) emerge as significant factors that influenced the activities of the respondents. The study further reveal that a gross margin of ₦35,000 was realized per hectare from average total revenue of ₦53,000 and average total variable cost of ₦18,000. the social and economic improvement of members has made people to join existing cooperatives and also form new ones for this progress.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

A cooperative society and / or organization is a voluntary association that functions on a democratic basis with self help and mutual aid to satisfy a number of economic and social needs to provide wide variety of services. The concept of cooperative was born out of human suffering, degradation and exploitation. Consequently, modern cooperative movement began in England in 1844 in the days of the industrial revolution when factory workers all over Europe lived in great misery and abject poverty (Olukosi and Isitor 2005).

Naik and Bharwani (1980), observed that cooperative movement was initiated in India by passing the “cooperative credit societies act 1904” and the objective of this act was to provide the requisite legal basis for its establishment. Cooperative production credit societies can be achieved through large number of small holder rural producers since they have identified management executives that pursue their needs (Poostchi; 1985).

Cooperation can enhance the knowledge and skill in adult faster than while working individually. Thus, by sharing their work load and disseminating information, adult students may realize their goals more readily and thoroughly as a group than they may while working as individuals (Joseph 2007). Similarly the also observed that, in recent times with the advent of cooperative organizations may have perceived the advantages as being preferred over competitive situation.

Formation and development of cooperative organization has been accepted as a policy in most of the developing countries and therefore many governments have attached importance to cooperative as an instrument of economic development.

Several policies and programmes such as supply of agricultural credits, agricultural produce marketing, agriculture processing, supply of input, distribution of consumer goods, diary and poultry industries, rural electrification, fishing, housing and improved farming techniques are better provided through these cooperative organizations.

Ihimodu (1989) reported that agricultural cooperative can be classified into the following:

a) Agricultural Producer Cooperatives: These are groups of farming societies (FS) who produce various crops.

b) Agricultural marketing cooperative: This form of agricultural cooperative markets farm produce, members provide the farm produce for marketing purpose in the society. For instance, members can form an association just to market cotton or palm nuts.

c) Agricultural cooperative thrift and credit: This form of agricultural cooperative mobilizes credit and makes it available to its members at low interest rate.

d) Agricultural consumer cooperative: They sell/market manufactured products to their members at reasonable price.

e) Agricultural multipurpose cooperative: This form of agricultural cooperative is involved in production, processing, marketing, credit etc. for the benefit of its members. Ahukannah et al (1996), outline the principles of organizing successful cooperatives. There are, First, that the number of shares a member would hold has a limit, by stating the minimum and maximum number of shares a member holds.

Secondly, cooperative societies are characterized by membership this means that anybody who wishes to joint the cooperative society can do so no matter the status of the person in the society.

The third principle states that cooperative societies are excepted to be managed by members along democratic lines, because members have equal opportunity, which includes control and decision-making, which rest with the members.

The fourth principle is that cooperatives are expected to be politically and religiously neutral. This means that political and religious issues should not be discussed by members during meeting neither should they be allowed to influence the position of its members in discussion.

The fifth principle is that cooperatives are expected to serve their members instead of aiming at generating large return from their members.

The sixth principle is that cash trading characterizes most cooperative to avoid buying / selling produce on credit. Seven, cooperatives are expected to sell their goods at market price.

Another very important principle is that all cooperative societies are expected to render educational service to their members. These services include extension services for members of agricultural cooperatives.

1.2 Statement of Problem

Individual small holder farmers are characterized as unproductive or can only produce in small quantity, due to their low level of modern way of farming system. Majority of the farmers are poor and have little access to other sources of improving their cultivation needs. Other factors observed are their low level of literacy (education status), poor social and or physical infrastructure. These factors retard economic growth in the study area (Fadama Desk Office, Fufore 2007).

However, for a longtime, several efforts have been made in forming new cooperative organizations some of which include: marketing cooperative, consumer cooperative and multipurpose cooperatives (Michael and Johnny, 1992). Nevertheless the World Bank assisted programs such as Fadama II and Local Empowerment and Environmental Management Project (LEEMP) have in recent time assisted communities in resuscitating and forming new cooperative groups. Another important problem is the activities of middlemen in the market, who by their activities deprived the small holder farmers their opportunity to fully enjoy their investment.

Furthermore, small holder farmers pay more during input acquisition and other services rendered to them simply because of their small nature and the activities of the middle men. This problem operating at a very small scale

coupled with activities of middleman has a combined effect of reducing the productivity of the farmers. These problems are therefore going to be investigated against the effect of the two aforementioned World Bank projects that are introduced into the study area.

1.3 Aim and Objectives

The aim of the study is to assess the effects of cooperative organizations on the farmers' output in Fufore Local Government Area of Adamawa State.

The specific objectives are to:

- Identify the socioeconomic characteristics of members of cooperatives in the study area;
- Assess the effects of specific factors of farmers' output in the study area;
- Assess the costs and return of cooperative members' production in the study area; and
- Identify the factors that limit the smooth operation of cooperative societies in the study area.

1.4 Hypothesis

i. Cooperative organizations have no positive effect on the output farmers in the study area.

1.5 Significance of the Study

Rural population is basically characterized as peasant, that is those people who are economically poor, they are mostly under privileged in their access to other sources of funds be it from government or other donor agencies both local and international.

It is therefore imperative for them to form cooperative societies, put resources together to maximize inherent advantage and also access other funds through government assistance; loans from banks and World Bank grant to enable them improve their living standard.

The study can therefore reveal changes that impacted on the rural farming populace, highlight the problems associated with cooperative societies and proffer possible solution and suggestions.

1.6 Study Area

1.6.1 Location

The area extends form latitude $12^{0}10^{1}$ to $12^{0}10^{1}$ longitude $12^{0}10^{1}$ to $13^{0}10^{1}$E with total land area of 4,162.5 square kilometer, (Adamawa State Ministry of Land and Survey, Yola 2007). The Local government shares boundaries with Song Local Government to the North, Yola the State Capital to the West, Jada and Mayo-Belwa to the South, while to the East it is bounded by the Republic of Cameroun.

1.6.2 Climate and Vegetation

The climate and vegetation of Fufore Local Government Area is segmented into two, thus the Southern Guinea Savannah zone, and the Northern Guinea Savannah zone. The former enjoys a mean annual rainfall of 1100mm-1600mm and rain distribution of 6-7months, the more abundant woody species in the area are: *Diospyros ellioti, Ceiba Pendanta bombe (Rimi), Oslatum* while the latter enjoys mean annual rainfall of 900mm-1100mm and their rainfall distribution last for 4-5months, the more abundant woody plants species of this area are *Afzelia africana (Kawo), Vitellaria paradoxa (Kiriya), Terminalia indica (tsamiya, tamarine), Laziflora, Termanali gahicscen.* The species of grass found in both area's included: *Pennisetum (Namre, Spear grass), Andropogan gayanus (volunde gamba grass), Hyprarrhenia, Bracharia and Aristida (Endamyel)* (Department of Ecology, Ministry of Agriculture Adamawa State 1997, Akosim, et al 1999).

1.6.3 Population and Land Use

The major tribes of the local government are Verre, Bata and Fulani while others found as settlers are Hausa, Laka, Chamba and few of other major tribes of the country. The 2006 census head count (NPC, 2006) reveals that the local government has 105,784 males and 101,503 females totaling 207,287 for both sexes. The major activity and/or occupation is agriculture, however, little of local manufacturing is also practised. The agricultural activity being practised include crop cultivation, animal rearing and fishing, while major crops grown include Guinea corn, maize, rice, groundnut and cowpea.

1.6.4 Rural Infrastructure and Market Periodicity

The markets in Fufore Local Government operate weekly. This is so because the area is short of roads network as only Yola-Gurin through Fufore, the Local Government headquarters is tarred, commercial activities are little appreciative.

1.7 Scope of the Study

The study is specifically concerned with analysis of the effects of cooperative societies activities on rural development mainly in the improvement of agricultural output through loans and input procurement, organized marketing and training (sensitization) of the rural farmers. In the process of analysis, problems and prospects of agricultural cooperative in the study are highlighted.

1.8 Limitation of the Study

It is for time and financial constraint that the research work is limited to only development areas as they are the nerve centres of the villages of the study area.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Serious attention was paid to rural development in the last four decades, concerning the poverty level and under development in the rural communities in Nigeria. Successive government in Nigeria has designed several rural development programmes in the national development plan to curb the vulnerability of our rural people by establishing various types of cooperatives for artisans and craftsmen as well as thrift and loan in the fourth national development plan period. A sum of about ₦183million was allocated to cooperatives development programmes (Chike and Ogbazi 1995).

Onlisa and Obuikwu (1992) in their analysis of the argument, postulated by Kristol and Friedman (1978) agreed that cooperative is one of the most effective vehicles for organizing modernized rural production which has become one of the most important preconditions for efficient mobilization of production resources and accelerated rural progress.

As far back as 1928, the Rural Commission on agriculture in India opined. We have great hopes that many millions of peasant proprietors may be led to a better life through a sound cooperative movement, (Shiriram 1985).

The Nabutaka farmers cooperative in central Uganda started by hiring a tractor and planting maize, then moved onto intercropping with other plants such as groundnuts, pineapples and bananas. The group have enjoyed reduction in the cost of farm inputs as well increase the size of their plot. The

dividends from the scheme are shared equally among members and used to buy the following season's farm inputs and cover household expenses such as children school fees (Spore 130, 2007).

2.2 Rural Farmer Production

The characteristics of small scale peasant farming in Nigeria do not differ significantly from what prevail in other developing societies. A typical Nigerian small scale farmer is described as one who cultivates an area of land varying from 0.10 to 5.99 hectares (Okigbo, 1978). Small holder farmers predominantly use simple tools such as hoe, machetes, sickle for their cultivation purposes (Eicher and Baker 1982). Peasant agriculture is mainly characterized by the application for low level of production and small scale nature of most of the farm holdings. This is because Africans realize that the potentials for significant incremental agricultural production using traditional inputs and management practices in limited, therefore to achieved rapid agricultural development modern technologies require both social organization of people into groups and their ability to create, form and enforce and an idea into the society (Ihimodu 1989).

Idachaba (1981) observed that the main approaches to the implementation of these objectives include mechanization to make possible larger scale operations, cultivation of newly introduced improved crops, and the use of modern or mechanical method for the processing of agricultural products. This attempt has made us to believe that the mechanization of agriculture holds the key to economic change in the developing countries.

Small scale producers in Uganda improve their livelihoods through effective market information, between sellers and buyers through Information Communication Technology (ICT) the website also offers advice on best crops and animals farming practices (Spore 126 2006). Agricultural experts and other proponents for rural development believed that agricultural development is the key to development in rural areas (Chike and Ogbazi 1995).

Trinidad Ministry of agriculture land and marine resources have organized youths in a programme tagged. Youth Apprentice Programme in Agriculture (YAPA) involving young people aged between 17 and 25 intern on farms and other agricultural enterprise, where they learned practical skills in farm management crop and livestock production, marketing and accounting. To date, more than 1,500 young people have taken part in YAPA and the results have prove so good that the ministry in planning to expand the programme (Spore 129, 2007).

In the early part of 1990, Edmond Mahutu and 12 other young people who lived in the Masimanimba region, 250km east of Kinshasa decided to start a business of growing pepper, and have harvested 30 sack each weighing 10kg. They were on their struggle against unemployment and idleness, which befall many rural dwellers. The continued their effort to attain food security planting maize, cassava and peanut (Spore 121, 2006). Similarly, in an effort to improved market value of bananas farmers at Masisi territory in the democratic republic of Congo province of Nord-Kivu, most of whose livelihood depends exclusively on agriculture, a non governmental

organization NGO known as sundicat de defense des interests paysans (SYDIP), grouped farmers together in 1993 and trained them on the need to reduce their banana production to replace this their mass production to haricot beans, sweet potatoes and marrows. Which has created diversification and that has paid off, for in less than 6months, the price of banana has risen ten folds (Spore 125, 2006).

Concerned of the low farm gate prices and growing competition caused by globalization, more than 100 participants examined the role of producer organization and the support needed if farmers are to be fully involved in the decision making process which concern them at a seminar organized in Brussels in early May 2006 by the technical centre for agriculture and rural development (CTA) together with the network of farmers organization and agriculture producers in West Africa. A speaker representing a platform of farmers organization of Central Africa, Elizabeth Atangana, stressed that family farming is first and foremost “away of life, a social, ecological and cultural unit”. Others, like John Mutunga, from Kenya National Federation of agricultural producers, Ibrahim Caulibaly, from the Malian federation of producers organization spoke, of their efforts to get farmers’ voices heard in the national political arena. The French participant Marcel Mazoyar, noted that a better future depends largely on the degree of help received from the main decision makers. It is not land that is lacking but the resources to work it in a modern manner (Spore 124, 2006).

“My advice is that there are many rivers, and if we use them, the problem of hunger will no longer exist”. This is a statement from Charles Mkwapita of Thyolo a district in southern Malawi. Spurred on by his success, more than 500 people have joined him to form an association, Manthimba irrigation scheme. He stated small irrigation canal using a hoe to tap water from the nearby Mapelera River and irrigate his maize garden. To him, rains are erratic, and his household always ran out of food before the beginning of the next growing season. Therefore by this practice he was able to harvest his maize crop three times, that first year and sold the surplus to earn income. The association now maintain 93 hectares sown with maize, beans, sugarcane, banana and vegetables. The venture now attracted support from World Vision Malawi an NGO that helps members build bigger and longer irrigation canals (Spore 124, 2006). Also in the same paper it was reported that plan are in hand to invest close to 2 Million Euro to help the poorest countries develop horticultural production focusing on high value fruit and vegetables to satisfy consumers who are increasingly demanding quantity, diversity and quality as determined by world vegetable centre (AVRPC), the French agricultural research centre for international development (CIRAD) and the internationals ociety for horticultural science (ISHS).

Spore 125(2006), reported a statement made by Peter Haziel a British agriculturalist and devoted researcher and adviser on agriculture that small holder production remain the best way forward for economic growth and poverty reduction in the ACP countries. In his paper Fredrick (2006) organized

by united national conference on trade and development UNCTAD Expert meeting reported that bulk of population lives in the rural areas, and agriculture provides over 70% of employment. It is a major source of raw material for the industries in Uganda growing at an annual rate of between 3.5-5% over the last 15years signifying an important contribution to GDP.

In this study, rural farmer production in therefore dependent on individual government and non governmental organization NGO's encouragement and support for the transformation of rural dwellers social and economic conditions for a better development by themselves through participation in agricultural, economic and social activities as a result of Association and/or cooperative organization so as to enable their capacity to cope with task of life.

2.3 Uses of Cooperative Organization

The majority of peasant farmers are small and widely dispersed in rural areas and poor in bargaining power in the market for selling their farm produce and buying the farm needs. They are also weak in obtaining their needs of investment and operating capital. The main reason for this is that the farmers are yet to realize the values of cooperative efforts. The general features of cooperative societies in Nigeria as described by Ihimodu (1989) and Ahu Kannah et al (1996) are as follows:

Cooperative societies are usually registered under the relevant cooperative laws. This makes the existence of such a society legal and recognized by law.

a) They operate as limited liability. Just like ordinary companies, whose profit/loss is limited to only members of such a society.

b) There is provision for a minimum number of members that join a cooperative society. By law, the minimum number is six (6) (Agricultural cooperatives) while others are required by law to have a minimum of ten (10) to enable them have registration.

c) There exist primary, secondary and apex organization/societies with the later affiliated to international cooperative alliance.

d) There is provision by law for a member to have some proportions of shares.

Agricultural productivity can be better increase through cooperative societies. Professionals and businessmen have realized the need to join efforts with a view to meeting competition, spending risk and making profits. Odubanjo (1981) showed that there is no organization in Nigeria today that has much facilities as the cooperatives movement to operate at the village level for equitable distribution of government amenities, forming organization of this types is very indispensable for modernizing agriculture and rural societies in general. Studies have shown that most of the farmers who are innovators are members of one or more organization. Peter and Anthonia (1971) and Atala (1984) viewed that urban contact and active participation in cooperative organizations to be closely related to adoption of agricultural innovation.

Johns (2003) observed that one of the benefits of farmers organizations is that they provide people who share some common interest with significant economies of scale in accessing services and in take collective action aimed at improving their socio-economic conditions. In rural area where producers are dispersed and scattered and communication are not optimal, the importance of these organizational is even greater.

Ihimodu (1989) indicated that to achieve rapid agricultural development, modern technologies requires both social organization of people into groups and their ability to create, form and enforce an idea into the society. Women farmers' organization can also not be neglected in agricultural development as also observed by Weidman (1987), Anyawu (1996), Jiggins (1996). These women farmers cooperative societies are backbone to women in agricultural production.

Olayade (1981) viewed cooperative as one of the most effective vehicles for organizing rural production as cited by Jungur and also observed that Adamawa State Government has actively encouraged cooperatives in order to promote social economic changes desirable for attainments of its rural development. Olayide (1975) also pointed out that a cooperative association is a voluntary organization of persons with a common interest formed and operated along democratic lines for the purpose of supplying service at cost to its members who contribute capital and business. Olisa and Obiukwe (1992) observed that cooperative is one of the most effective vehicles for organizing modernized rural production which has become one of

the most important preconditions for efficient mobilization of production resources and accelerated rural progress.

Mba and Ogbazi (1995), mention that in some part of Nigeria groups of people had in the past setup cooperative societies for the purpose of providing support in traditional housing development.

Some of the uses of cooperatives as pointed out by Bharwani and Naik (1980) included the following.

Firstly cooperative society enables its members to secure economic services of various kinds at lower cost, whether its agricultural production, marketing, processing or supply and services. The members certainly enjoy the benefit of cooperative action in the economic spheres.

Secondly, cooperative with its more enlightened and progressive economic ideals can be used as powerful means to combat monopolistic tendencies which usually exploit the common man. Thirdly, a cooperative organization functioning in the true spirit can also help to reduce social tensions as the basis of equality.

Fourthly, cooperation is concerned with social peace and stability, a evidenced by its approach to generation of employment opportunities and adoption of moral and equitable policy toward all, in respect of dealing in trade and investment decision. It therefore envisages minimizing of conflict between the cooperative enterprises and the country and also between employers and employees, in the process; it aims at social changes that will ensure optimization of economic welfare.

Fifthly, cooperative in general, therefore, constitute a training ground for planning on democratic lines as well as to acquire competence to run the enterprise as a business organization

The International Institute of Rural Reconstruction (IIRR) and African Conservation Tillage Network (ACT) (2005) reported, whether old or new, local organizations may need outside help so that they can support their members adopt new agricultural techniques and programs, they may also be able to benefit from technical training to participate in field days and exchange visit, linkages with other groups or institution and leadership development.

According to Maheshwari (1985) a team of agricultural experts submitted its report to the government of India 1963 on ten point programme to increase food production and recommended that the supply of farm credit based on production potentials which should be made easily available through strengthened cooperatives, supplies of fertilizers, pesticides, improved seeds, and other inputs were also to be made available through the cooperatives, similarly marketing arrangements and service were to be provided to enable the cultivator to obtain market price for his surplus.

Poostchi (1985) reported that the best of production credit system is through cooperative societies since individual members can be mentioned by cooperative executive and equally be guided where things are going wrong.

Spore 126 (2006), “Strength in numbers” reported that farmers coming together to form a cooperative takes more advantage of economics of scale, as producers can often get cheaper prices for inputs such as credit and

negotiate higher revenues for their output together with lower cost for transport and packaging.

Samson and Early (2006) suggested that one of the format for minimizing these problems under the economic environment of developing countries is the introduction, popularization and active support by the government of multipurpose cooperative can encompass producer association for production of arable cash crops, marketing association for the sales of produce, supplies association for the provision of farm inputs, service association (for such services as electricity, water supply, irrigation, telephone, hospital and transportation) processing association that give form and time utility to produce, and credit association for the supply of credit on a low interest rate basis to participating members.

2.4 Effects of Cooperative Organizations on Farmers Output

In Nigeria, the history of informal cooperative is as old as that of the people. This is because as Miller (1975) opined, the life pattern of people is in cooperative, people voluntarily combine efforts to hunt, clear land, build houses and engage in other economic activities.

Jonas (2003) observed that apart from benefiting producers in rural areas who are dispersed and scattered, farmers' organizations are also important ways for poor people to have an effect and to become stronger in financial terms.

Abang and Sunday (2006) observed from their research conducted in Ogoja Local Government Area of Cross River State that cooperative societies

in general have contributed positively to food and cash crop production such as cassava, yam, rice, palm oil and cocoa among others. The formation of the societies has also brought about some improvement in income and some aspects of living condition of the farmers; and has provided employment opportunities in the area.

Peter (2006) reported honey processors had greater advantages in marketing their productions in a joined large organization for a favourable price bid, bulk purchase of packaging materials, greater cash resources and better access to credit and above all stand a position to negotiate sales contracts and distribution channels.

Mandela (1994) stated that cooperative education is the great engine of personal development, it is through education that the daughter of a peasant can become a doctor, that a son of mine worker can become the head of the mine, that the child of a farm worker can become the president of a great nation, it is what we make out of what we have, not what is given, that separates one person from another.

Johnson, et-al. (991) pointed out that more efficient and effective exchange and processing information take place in cooperative than competitive or individualistic situation. Similarly as observed by Smith (1991) by helping each other, rather than competing against one another students will be able to study more material quickly and more thoroughly. USDA (2005), reported that the mission of rural Americans by providing leadership in building cooperative business including sustainable cooperative that can

prosper in the global market place. Report from www.sandiago.com (2007), reveals that the revamped cooperative has exclusive deals with about half its members who cannot or do not contract to sell their crop to major cigarette-makers or leaf dealers directly, cooperative officials say their will offer members a chance to earn profits from its dealings while offering cooperative prices for their crop-about $1.40 a pound, said Lamar Deloach, a metter, Ga, grower and member of the coop's board of directors. People organized cooperative to improved their income or economic position or to provide a needed service. Gelen and Gerald (2007), made the following observation from different communities in USA.

- The California Canning Peach Association is a cooperative bargaining association based in Lafayette. Peach growers contract their production to processors. The grawer-owned cooperative bargains with the largest processor, for grower price and delivery schedule. Members realize significant additional money per ton for their peaches than grower who market on an individual basis. The cooperative also keeps growers advised on project market volume and other conditions that may affect their operation.
- St. Mary's General Hospital in Lewiston, a 230-bed rural health care facility, is a member of Synermet Cooperatives that services 20 hospital. In one year St. Mary's saved more that $479,000 by purchasing fuel oil, medical supplies, laboratory products, food, film,

pharmaceutical, and services through the cooperative. These savings helped health care provider's stretch limited resources.

- Tillamook County Creamer Association was organized in 1909 as a quality control organization for 25 cheese factories operating in Tillamook Country, an area 30miles wide and 60miles long between the Pacific Ocean and the Coastal Range mountains during the past years, the 25 cooperative have consolidated into a single cooperative. Tillamook produces and sell more than 45million pounds of cheese a year. Sales are mainly in the pacific coast states of Oregon, Washington, and California, with an ever growing volume going to all parts of the United States. Due to the emphasis the cooperative places on family farm operations, young dairy producers have been encouraged to stay on the farm and continue to build on the foundation laid by earlier generation.
- Frontier cooperative at Norway stated out in a van in 1976. its mossion was to provide low-cost organic herbs, and spices to its members. Today, with 5,400members, frontier is a solidly managed cooperative that become the Nation's premier distributor of organic seasonings. Developing new products rates high on the cooperative's list, such as frontier pure larger, an organic beer, as well as encapsulated herb products.
- Water Mark Association of artisans was formed in 1978 by 35 rural women near Elizabeth city. They pooled their efforts to sell baskets,

quilts and other hand made gift items. Today the 750 member artisans produce decorative wooden products, rocking horses, antique, rag dolls, teddy bears, duck decoys, wreathes, and basket which are marketed around the world. About three-fourths of the members are for low-income backgrounds. Many are single unemployed mothers with few job skills.

- Members of blues water harvesters cooperative in port oxford harvest sea urchins. They depended on several private firms to extract and clear package “roe” for export to Japan. In recent years all of these firms ceased operations. The water men were left without a processing facility. So the cooperative purchased a processing facility which enabled members to continue their livelihood through cooperative action.
- Frankfort is a small city of 1,500 on the shores of Lake Miching. Many older residents wanted the comfort and convenience of retirement living, but didn’t want to leave the area. Initially, 54 couples moved into an especially designed, new elderly housing cooperative close to the centre of the community. The new cooperative is the latest example of an emerging trend in providing affordable senior citizen housing facilities that are ideally suited to small rural communities.
- Glasgow Cooperative, Inc., was organized in 1923 at Missouri, as a farm supply purchasing association. It services farmers in a 15 mile

radius of Glasgow. In its 70year history, it has returned nearly 8percent of gross sale in patronage back to the members. The cooperative also has excellent history of revolving member equities. Both activities have reduced the cost of providing farm supplies to the members.

Maheshwari (1985) reported that department of debt and investment survey of the Reserve Bank of India (1971) reveals that cooperatives provides more than one-fifth of the total credit requirement of agriculture.

Therefore, to succeed with agriculture, farmers need to work together, getting training and credit, for the purchase of farm equipments, seeds, and setting up small trails of new techniques learning. These are all easier in group; some things are possible only if people collaborate with one another. It is against this backdrop that the study wants to focus on members' credit sources, their training and or capacity building to new technologies on modern ways of farming, as well to study the socio-economic characteristic of members to cooperative output.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter is on the method used in this work. It discusses the types of data collected and their sources, the data collection methods and the analytical tools used.

3.2 Type and Sources of Data

Both primary and secondary data were used. Structured questionnaires were administered to respondents to source information on their personal data, farming activity, level of participation in cooperative activities and the benefits or improvement acquired on their living standard.

3.3 Sampling Procedure

The sample was drawn from four Development Areas and the local government administrative headquarters that make up the study area. These are: Gurin, Malabu, Daware, Yadim and Fufore, the local government headquarters. This was done at the headquarters because the lists of all membership of the societies are available there. However, after these were selected, the members were identified at their based and interviewed.

Two hundred respondents were selected within five sample areas based on their percentage incorporation to the regulatory authorities (Adamawa State Ministry of Commerce, Corporative and Industries, Fufore Area Office). One hundred and fifty cooperatives were found registered and active with the regulatory authority. Table 3.1 therefore presents the number

of registered cooperative societies and the number of respondents that were drawn from each of them.

Table 3.1: Percentage Distribution of Respondents from Five Sample of the Study Area.

Sample Area	No. of registered cooperatives	% Total Incorporation	No. of sampled respondents
Fufore	54	36	72
Gurin	29	20	40
Yadim	26	17	34
Daware	23	15	30
Malabu	18	12	24
TOTAL	**150**	**100**	**200**

3.4 Data Analysis

Based on the objectives, three major statistical techniques were used in analyzing the data collected, these are: descriptive statistics, regression analysis and gross margin analysis.

- Descriptive statistics was employed to achieve objectives (i), by using percentages, arithmetic mean and charts.
- Regression analysis was used to achieve objectives (ii), and is specified as follows:

The general form of the regression analysis is specified as:

$Y = f(x_1, x_2, x_3 \ldots\ldots\ldots\ldots\ldots\ldots x_n)$

Where Y = Total profit of members for the preceding year

X_1 = Age of farmers (years)

X_2 = Literacy level

X_3 = Gender

X_4 = Farm size

X_5 = Experience

X_6 = Size of family

X_7 = Marital status

X_8 = Wages

X_9 = Farm input (fertilizer, chemical and animal feed and medication).

- Gross margin analysis was used to achieve objective (iii).

Thus, tools for analysis as described by (Olukosi and Erhabor, 2005) is

GM = TR – TVC

Where: GM = Gross Margin

TR = Total Revenue

TVC = Total Variable Costs

And TR = P.Q = Where P = Unit price of various output in crops and animals, and

Q = Quantity of crop output and animals.

CHAPTER FOUR
RESULT AND DISCUSSION

4.0 Introduction

This chapter discusses the following:

- The socio-economic characteristics of respondents.
- The effects of specific factors on members' output.
- Cost and returns of respondents
- The factors that limited smooth operation of cooperative societies.

4.1 Socio-Economic Characteristics of Respondents

The socio-economic characteristics of respondents are, age of farmers, literacy level, gender (sex), farm size, experience, size of family, martial status, labour and farm input. Table 4.2 below therefore represents four functional regressional forms employed.

Estimated Parameter of Output

Regressional analysis indicated that number of statistical significant parameters vary among the functional forms used. However, the F test results show that overall regression models were statistically significant, although adjusted R^2 was generally low for all functional forms used, exponential and Cobb Douglas function have higher adjusted R^2s.

The exponential model seems to yield better results in terms of number of statistically significant parameters and expected signs of parameters literacy level, farm size, size of family, and marital status variables were statistically significant. This suggested that all the statistically significant parameters have important effects on the effect of cooperative organization on

farmers' output in the study area. These are depicted from social variables of the respondents (farm size, size of family, marital status, literacy level and experience) which indicate significant contribution to being a cooperative member. However, this does not apply to non cooperative members as the study simply considered benefits derived from cooperative members.

The coefficients of X_4 and X_6 (farm size and marital status), respectively carried negative signs though violated some regressional assumptions, but were consistent with a prior expectations, that a decrease on the farm size and marital status (i.e not to marry more wives in this case) who have a positive effect on the farms output in cooperative organization with regards to farm size, linear function however produced the same results. Cobb-Douglas and Semilog functions produced a poor result, each in terms of significant level of all the parameters. For this reason explanatory variables in these models were not discussed in detail.

Table 4.1 For Estimated Parameters of the Regression Analysis:

Variable	Linear	Semi log	Exponential	Double log (Cobb-Douglass)
Age of farmers (X_1)	1176.46	26478	11.01	0.75
Literacy level (X_2)	1978.12	22155	0.02**	0.29
Gender (sex) (X_3)	-76725	0	0.02	0.0001
Farm Size (X_4)	74.49**	-11444	-0.648**	-0.115
Experience (X_5)	3.97**	4935.3	-0.0008	0.053
Size of family (X_6)	-3571.1	-10867	0.0000043**	-0.0213
Marital Status (X_7)	0.95	4360.3	-0.045*	0.064
Wages (X_8)	-0.24	-88043	0.000043	-0.0366
Farm input (X_9)	0.0910	1290.28	-000019	0.0298
F	4.502	2.126	5.034	2.54
Adjusted R^2	0.16	0.16	0.18	0.21

** Significant @ 1%

* Significant @ 5%

Source: Data Analysis.

4.2 The Effects of Specific Factors on Members' Output

The factors considered include farming activities of members, method of land acquisition, cooperative participation and sources of funds of the respondents.

4.2.1 Farming Activities of Respondents

Table 4.2.1 reveals that 44.5% of the respondents are in crops cultivation, 31% practise animal production while only 24.5% practise fishing. This indicates that majority of the respondents are crop producers, this is not unconnected with the fact that people still live in poor condition, striving hard to acquire grains for the sustenance of their families, relegating other vibrant village economic opportunities that can bring better fortune for them. The table

also shows that Daware has the highest number of participants, followed by Gurin while Yadim was observed to be the least. This is because of their inability of get farm input and other government subsidies.

Table 4.2.1 Distribution of Respondents based on Farming Activities:

	Fufore	Gurin	Yadim	Daware	Malabu	Total	Percentage
Animal Husbandry	15	13	8	17	9	62	31%
Crop Farming	15	22	17	16	19	89	44.5%
Fishing	7	12	3	19	8	49	24.5%
Total	**37**	**47**	**28**	**52**	**36**	**200**	**100%**

4.2.2 Method of Land Acquisition of Respondents

Table 4.2.2 presents the method of land acquisition by the respondents. Those who acquired their land area through purchasing top the list by 51% followed by inheritance with 26% while those who acquired by donation and lease has 13.5% and 9.5%, respectively. This therefore shows that members have enough zeal for developing their economic interest if they can be empowered by both skilled training and financial support. However, it has also been observed that, the inability of land owners to have a definite mode of land lease also constitutes a problem. Similarly, the polygamous nature of people is also responsible for the fragmentation of inherited cultivable land into pieces thereby resulting to small holdings. The table also indicates that Fufore Local Government Headquarters ranked first for members ability to

purchase land on their own. It is an indication of their awareness on resource control for their development project and progress.

Table 4.2.2 Method of Land Acquisition of Respondents

	Fufore	Gurin	Yadim	Daware	Malabu	Total	Percentage
Purchase	32	22	11	18	19	102	51%
Leased	6	3	1	4	5	19	9.5%
Inherited	10	11	13	10	8	52	26%
Donation	2	5	7	7	6	27	13.5%
Total	**50**	**41**	**32**	**39**	**38**	**200**	**100%**

4.2.3 Cooperative Participation of Respondents

Table 4.2.3 shows that 51% of respondents enjoy some assistance from their societies, these therefore reveals that being a member of a cooperative one would get one assistance or the other from his group.

However, only 26% have agreed to having training in their societies, this alarming situation is therefore not in consonance with Ihimodu (1989) postulation who reported that “to achieve rapid agricultural developments, modern technologies, it requires both social organization of people into groups and their ability to create, form and enforce an idea into the society. Also 23% of the respondents strongly belief that there are problems associated their cooperative societies. The table also shows that Fufore and Daware enjoyed much assistance from government and donor agencies, as indicated by their 51% and 50% respectively. These form of assistance included the following:

(i) Actualization of Local Development Plans (LDP) through payment of counterpart fund by the government and the eventual release of required fund by the World Bank; (ii) Procurement of farm inputs, e.g. fertilizer, seeds, artificial insemination; (iii) Provision of Tube Wells and Motorized boreholes. Also among the problems experienced in the study areas are: Government regulatory agencies neglect and or nonchalant attitude, lack of funds to boost their economic interest and above all lack of seriousness on some of their members.

Table 4.2.3 Cooperative Related Responses of Respondents

	Fufore	Gurin	Yadim	Daware	Malabu	Total	Percentage
Cooperative Assistance	33	20	13	21	15	102	51%
Training by Cooperative	12	8	6	18	8	51	26%
Problems of Cooperatives	6	5	16	11	8	46	23%
Total	**51**	**33**	**35**	**50**	**31**	**200**	**100%**

4.2.4 Sources of Fund of Respondents

Table 4.2.4 shows that 80% of respondents are dependent on personal savings for the execution of their activities, 10% have benefited from bank loans, while 5% each benefited from government incentives and donations from donor agencies. However, the table shows that majority of the cooperative members who saved their money for their projects are from Fufore and the list of them are from Yadim.

Table 4.2.4 Sources of Fund of Respondents

	Fufore	Gurin	Yadim	Daware	Malabu	Total	Percentage
Loan from Bank	8	2	0	6	4	20	10%
Personal Savings	55	30	15	35	25	160	80%
Government incentives	3	1	1	5	0	10	5%
Donation	2	1	1	4	3	10	5%
Total	**68**	**34**	**17**	**49**	**32**	**200**	**100%**

4.3.1 Gross Margin Analysis for 200 Respondents on the Effects of Cooperative Organizations ON Farmers' Output in Fufore L.G.A (Crop, Animal And Fish Production).

Results in table 4.3.1 show the costs and returns of cooperative members' output in the study area. Total variable cost was observed as 6,127,429 and these produce a total revenue of 17,933,195 on a total land area per hectare of 334/ha. Thus yielded 18,345.6 and 53,692.2 of TVC/ha respectively. Consequently, a gross margin of 35,346.7 was realized from deducting TVC from TR. The result therefore indicates that, members, had a break even in the production process, however, they would have realize from deducting TVC from TR. The result therefore indicates that, members had a break even in the production process. This may not be realized if members had no opportunity of enjoying knowledge, skill, ideas and some incentives

that are shared among them. However, they would have realize more if they had injected more funds in their business that is by:

1. Increasing the number of fishing tools to have more harvest.
2. Increase the number of their stock also employs the service of skill labour.
3. Improving on their non farming skill and trade.
4. Improving their land for crop cultivations, if the required inputs are readily available.

Similarly, disposal of farm outputs could be when the prices have appreciated not immediately from the farm gate to boast their revenue.

Table 4.3.1 Costs and returns of cooperative members in the study areas

Variable Costs	**Amount**
Tenancy	70115
Labour	4200990
Stock cost	1198133
Cost of feed, fertilizer, chemical etc.	169131
Cost skilled services	204760
Cost of fishing tools	284300
Total Variable Costs	**6127429**
Revenue	
Income on sales of bag	225151
Income after cattle production	238622
Income as profit	11244000
Income on fishing	1328900
Income outside cooperative	15016522
Total Revenue	**17933195**
Total Land Area (ha)	**334ha**
Total Variable Cost/ha	**18345.596**
Total Revenue / ha	**53692.2006**
GM/ha	**35346.7006**

CHAPTER FIVE

Summary, Conclusion and Recommendation

5.1 Summary

This study was designed to find out the effect of cooperative organizations on rural farmer's productivity in Fufore Local Government Area of Adamawa State. Questionnaires were used to collect primary data from the respondents while secondary data was from related literature.

The results of the findings reveal that there were significant effects of cooperative organizations on the rural farmers of the study area. These include, meeting up with immediate family needs, e.g. provisions of sufficient food for the family, payment of children fees, hospital bills, social services e.g. provision of portable water, drainages and roads rehabilitation. Others include procurement and hire of farm inputs, capacity building (training) trade and other enhancement.

The results also show of that some cooperatives were able to acquire loan from banks and very little of them access the World Bank grants.

The findings also reveal that there are five variables that affect the respondents. These are; farm size, experience, size of family, marital status and literacy level.

Majority of members of cooperative organizations are peasant, these therefore makes it difficult for them to pay for the counterpart fund as a requirement for the World Bank funds. Other problems also enlisted are

government regulatory authority neglect to cooperative organization's activity that they envisage to constantly monitor their activities to know their ferrying.

The result of the respondents on farming activities indicated that most cooperatives produce crops and relegating other farming practices, similarly cooperative organization are mostly dependent on their personal savings and contributions because they cannot access funds from banks.

5.2 Conclusion

Even though cooperative organization has been an old age activity it has not been seen as a purposeful venture not until recent time in the study area. Many people have now cherished it and realize the importance of coming together for their self help. Despite the numerous problems highlighted by some of the respondent they still uphold that it is worth practicing, there is a deep gold in the crust only a patient member can wear it.

5.3 Recommendation

From the results of the study, the following recommendations are made:

i. There is need for government to enhance the affairs of cooperative regulatory agencies so as to constantly monitor its activities and also provide desired assistance and incentives, this way can reduce the poverty level in people.

ii. Government should assist in the payment of counterpart fund required by donor agencies.

iii. Training (capacity building) has to be routinely given to understand variety of other economic project that can even surpass what they dwell on.

iv. Cooperators should make the best use of their experience to avoid repeating similar mistakes of their fail project.

v. Agric and commercial bank should assist in providing loans to cooperative organization since recovery is more certain as fund will be given to group not individual.

vi. Government should channel their developmental programme through the cooperatives this will allow affective implementation.

vii. Extension/advisory officers should work together with cooperative organization for effective dissemination of ideas and new agric technologies.

viii. Cooperative members must be sincere, and their executive should be prudent in their management and most posses high level of integrity.

REFERENCES

Ahukannah, L.I, Ndinwechi, G.I and Arukwe, O.N (1996), *Commerce for Senior Secondary,* Africa Feb. Publishers Limited, Onitsha Nigeria pp139-142.

Akosim, C. Tella, I.O and Jatau, D.F (1999) Vegetation and Forest in: Adebayo A.A. and Tukur A.L (eds), *Adamawa State in Maps.* Paraclete Publishers Yola Nigeria. Pp 32-35.

Anyawu, A.C, (1996) Gender issues of Priority in Agricultural Extension Delivery Systems.

Atala, T.K (1984). The Relationship of Socio-economic Factors Utilization of Information Sources in Nigeria Village. *The Nigerian Journal Agricultural Extension* Vol.2 (1 and 2) AEARLS, ABU.

Chike, H.M and Ogbazi, J.U (1995), *Introduction to Rural Development Planning,* Computer Edge Publishers. Pp 53-56.

Eichar, C.K and Bakeri D.C (1982) Research on Agricultural Development in Sub-Sahara Africa. A critical Survey M.S.U *International Development Paper.* Pp. 47-48.

Fadama II (2007) a Source of joy to the Rural Communities, Fadama Desk Office, Fufore Local Government Secretariat.

F.A.O, (1962), Training and Extension in Cooperative Movement. *A Guide for Field Extension Workers, Food and Agricultural Organization Rome, Italy P.42.*

Hartsoe. S. (2005), Farm Scene: Tobacco farmers banking on new role for cooperative, hhttp://www.sign.onSandiego.com/news/nation (2007).

Idachaba, F.S (1981), Agricultural Research Staff Instability the *Nigeria, Experience Nigeria Journal of Agriculture Vol.3 (1).*

Ihimodu, I.T (1999), *Manual for Mobilizing Cooperatives towards a developed and self-reliant society,* Directorate for social mobilization, Abuja, Nigeria.

International Institute of Rural Reconstruction (IIRR) and African Conservation Tillage Network (ACT) (2005), conservation agriculture. *A manual for farmers and extension workers in Africa,* Nairobi, Africa consernal network tillage network Harare publisher 2005 in Kenya by majestic printing works limited Nairobi Kenya.

Poostchi, I (1985). *Rural Development and the developing countries. An interdisciplinary introductory approach.* 3rd edition an Alger press limited pp146.

Johnson, et-al. (1991), The Role of Cooperative Education in Adult Learning Environment. http://horizon.unc.edu/conferences/ic/papers/18.html: Pp.3 of 6.

Jonas, R (2003), why are Farmers Organizations Important for Rural Development, by UN System Network on *Rural Development and Food Security.*

Jiggins, J.S and Olawoye, R.K.I.E (1996) Improving women farmers' access to extensions services in swansan, E.B *Improving agricultural extension.* A reference manual, FAO, Rome pp.26-27.

Joseph, F.C (2007), The role of Cooperative Education in Adult Learning Environment. hhtp/horinz.UNC.Edu/conference/papers/18.lat.ml.

Mandela, N. (1994), ICT for Rural Youth Livelihoods, Cited by Joy Oliver: Highlights giving Youth a Voice Published by ACP-EU *Technical Centre for Agriculture a Rural Cooperation (CTA).*

Kristol, I. (1978) and Friedman M. (1962) The Peasantry and the Cooperative Spirit. Cited by Olisa and Obuiku (1992), *In Rural Development in Nigeria Dynamics and Strategies Pp.242.*

Masheshwari, S. (1985), *Rural Development in India,* A public Policy Approach Publishing by Sage Publications New Delhi / Beverly hills / London Pp146 India Prt. UD.

Miller, L.F (1975) *Present and potential use of credit by small maize and rice farmers in Kwara State, Nigeria.* Mechanical Report AETR / 75-3 Department of Agriculture Economic University of Ibadan Nigeria.

Michael, S.O and Johnny, I.O (1992) *Rural Development in Nigeria, Dynamics and Strategies, Mekslink Publishers, Nigeria. Pp.223-247.*

Ministry of Land and Survey (Survey Area Office Yola Adamawa State 2007).

Ministry of Commerce, Cooperative and Industries (Fufore Area Office, Adamawa State 2007).

Naik, D.D and Bharwani, S.S (1980) Management and Development of Cooperatives, D.K.B Publishers, Bombay.

National Population Commission NPC (2006). Nigeria Census Yola NPC Office.

Odubanjo, E.K (1981), The Role of Cooperative in Nigeria Agriculture Proceeding Seminar organized by the Central Bank of Nigeria (1981) o Agricultural credit and Finance in Nigeria. Problems and prospects.

Ojie, A.F and Ejaro S.P (2006) *Rural Cooperatives and Agricultural Development Ogoja Local Government of Cross River State,* Research Abstract tot eh Department of Geography, University of Abuja. In the "Book of Abstract" of the 48th Annual Conference of the Association of Nigeria Geographers, "Geographical Perspective on sustainable Rural Development in Nigeria" Federal University of Technology Yola August 2006, Edited by Adebayo A.A.

Olayide, S.O (1975): Organizing Rural Production Cooperatives. In S.O Olaiyide, O. Ogunfowora, S.M Essang and F.S Idachaba (Eds) *Elements of Rural Economics* Ibadan University Press Publishign House: pp344.

Olayide, S.O (1981), Organizing Rural Production-Cooperative Elements of Rural Economics; cited by A.A.U Jongur, Agricultural financial and cooperatives in Igwe, E.C, Mshelia, S.I, Jada, M.Y (eds) in: *Agricultural in Adamawa State* (2005). Paraclete Publishers Yola.

Olukosi J.O and Erhabor, P.O (2005) *Introduction to farm management economics 2nd edition* Agitab Publishers Yola: Pp30.

Olukosi J.O and Isitor S.U (2005), *Introduction to Agricultural Marketing and Prices: Principles and Application.* Living Books Series FCT Abuja, pp66-72.

Okigbo, B.N (1978), Cropping System as Related Research in Africa AAASA Anniversary Series, Pp.81.

Peter, A. (1971): Analyses of selected factors that influence the adoption of important Farm Practices among Tobacco Farmers in the Western State, *the Nigeria Agricultural Journal* Vol.8(2) pp.123-131 Published by Agricultural Society of Nigeria.

Peter D.P (2006), *Bee keeping the Tropical Agricultural list,* Bee Keeping Consultant Nairobi, Kenya, Macmillan Publisher Limited published in Cooperation with ACP-EU *Technical Centre for Agricultural and Rural Cooperative* (CTA) Pp97-98.

Poostchi, I. (1985) *Rural Development and the developing countries on interdisciplinary introductory approach, 3rd edition on Alger Press Limited Pp.147.*

Rapp, G. and Ely G. (1996), Cooperative Information Report on how to start Cooperative, why Cooperative are organized pp.5 of 41 hhtp://www.rurdev.usda.gov/rbs/pub/cirof/rpt.htm2007.

Samson, O.O and Eairl O.H (1982), *Introduction to Agricultural Production Economics,* Cooperative Farming, Ibadan University Press Publishers. Pp.124-126.

Siriram, M (1985), *Rural Development in India, a Public Policy Approach. Sage* Publications New Delhi/Beverly hills/London pp.146.

Smith, I Johnson, J. (1991), The Role of Cooperative Education in Adult Learning Env., hhtp//horizon.unc.edu/conference/papers/18.lat.ml

Southerimer, S. (1991): Women and Environment. A Crisis and Development in the third World Pp.83.89.

Spore 121, February (2006), DRC for the Young, Pp.9

Spore 124, August (2006), Clamping Down on cattle rustling pp.6

Spore 124, August (2006), A Future for Farming pp.6

Spore 124, August (2006), DIY Irrigation Yields by Returns, Pp.7

Spore 125, October (2006), Fewer Benanas Make Bigger Profits pp.8

Spore 125, October (2006), Small is Beautiful, pp.16

Spore 126 December (2006), Bridging the information gab for farmers, pp9.

Spore 129 June (2007), Support for Young Farmers Pp.6.

Spore 130 August (2007), Share holder farmer Pp.6

Spore 130 August (2007), United we farm Pp.5

USD (2005), Rural Development report on Rural *Business Cooperative Services* of November 23, 2005: In Wikipedia, the free encyclopedia.

Weidmenann, J.L (1987) *Agricultural Extension for women farmers in Kaduna State. Occasional Press, World Bank, Washington DC.*

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Dear Respondents,

I am a student of the above named institution undertaking a research on the effects of cooperative organization on farmer's output of Fufore Local Government Area.

2. The attached questionnaire is designed to generate data that will be used to bring improvement on better cooperation in order to enhance socio economic status of all stakeholders. It should however, be noted that information derived will exclusively be used for a research purposes.

3. In view of the above therefore, you are requested to honestly and concisely complete the attached questionnaire, please.

Adamu Ardo Bello

SECTION 'A' PERSONAL DATA

1. Name of your community…….
2. Gender Male [ ] Female [ ]
3. Age……
4. Literacy level a) Primary [ ] b) Secondary [ ] c) Tertiary [ ]
5. Family size a) 2-10 [ ] b) 10 and above [ ]
6. Marital Status a) married [ ] b) single [ ]

SECTION 'B' FARMING ACTIVITIES

7. Are you a farmer? a) yes [ ] b) no [ ]
8. What type of farming do you practice? a) crop cultivation [ ]
   b) animal husbandry [ ] c) fishing [ ] d) other specify……
9. Source of land acquisition. a) personally owned [ ] b) lease [ ]
   c) inherited [ ] d) donation [ ] others (please specify)……..
10. If lease, what is the amount paid for a single year tenancy of a hectare land ……..N
11. What is the size of your farm: …….. hectares
12. Method of land preparation a) manual [ ] b) ox plough [ ]
    c) tractor [ ] d) a and b only [ ] e) all combine [ ]
13. For how long have you been farming? …… years
14. What type of crop do you cultivate? a) rice [ ] b) maize [ ]

c) vegetable [ ] d) others specify……

15. What is the source of your production labour…….. and how much do you spent on it……N
16. What is a price of a bag of your farm output……N
17. How many bags do you realize last cropping season……N
18. What is the number of stock do you maintain for a period……
19. How much do you spent on feed N…….. and medication……N
20. What is the unit sale after production……N
21. How much do you spent on feed N……and mediation……..N
    As well as skilled service N……. for a production period.
22. What is the unit sale after production……N
23. How often do you go for fishing?.....
24. What is your annual estimate income on fishing……..N
25. Indicate any other non-farming activities you are engage in…….
26. What is your total profit on that activity last season?,,,,,,,,,,,,,,,,N……

SECTION 'C' COOPERATIVE APRTICIPATION

27. What is the name of your cooperative society?.....
28. How long have you been in the cooperative?.....years
29. What is your mains sources of fund? a) personal savings [ ]
    b) loans from banks [ ] c) government incentives [ ]
    d) donations from world donor agencies e.g. Fadama Ii, LEEMP [ ]
    e) other (specify)……
30. Do you conduct training in your society? a) Yes [ ] b) No [ ]
31. Is your cooperative assisting you in getting your farm requirements at the right time. a) yes b) no [ ]

SECTION 'D' BENEFITS DERIVED FROM PARTICIPATION IN COOPERATIVE ACTIVITIES

32. By which way have you benefited from the society?
    a) crop yield increase [ ] b) increase in knowledge and skill [ ]
    c) physical infrastructure and material acquisition [ ] d) all of the above [ ]
33. Did your earnings from the above enable you to
    a) build a new house [ ] b) renovate your dilapidated building [ ]
    c) increase the number of rooms in your house [ ] d) non of the above [ ]

34. Did your earnings from the above enable you to a) marry a wife[ ]
b) add the number of your wives [ ]
c) assist you in paying your children school fees [ ]
d) none of the above [ ] e) all of the above [ ]

35. Is your cooperative assisting in selling your farm output a) yes [ ] b) [ ]

36. Is your cooperative assisting in storing your farm output a) yes [ ] b) [ ]

37. Do you enjoy being a member of a cooperative? a) yes [ ] b) [ ]

38. If yes state your reason……..
…….

39. If no state your reasons……..
…….

40. What is or/are the problems of your cooperative?
…….

41. Suggest possible solutions to the problems mentioned above……...
…….

Thank you.

APPENDIX I

Tables on farming activities, methods of land acquisition, source of funds and cooperatives related responses of the respondents in the study area.

Variables	Frequency	Percentage (%)
Farming Activities		
Animal husbandry	62	31
Crop farming	89	44.5
Fishing	49	24.5
TOTAL	**200**	**100**
LAND ACQUISITION		
Personality owned	**1022**	51
Leased	19	9.5
Inherited	52	26
Donation	27	13.5
TOTAL	**200**	**100**
Cooperative Participation		
Cooperative assistance	102	51
Training by cooperative	52	26
Problem of cooperative	46	135
TOTAL	**200**	**100**
Source of Fund		
Loans from bank	20	10
Saving from contribution	160	80
Government incentives	10	5
Donation	10	5
TOTAL	**200**	**100**

Source Survey Data 2008

APPENDIX II

LINEAR FUNCTION
Dependent Variable Y
Analysis of Variables

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	9	20356973965	22621885996	4.502	0.0001
Error	147	748747579326			
C total	158	952344553294			

Root MSE	70888.30326	R-square	0.2138
Dep means	79274.20126	Adj R-sqaure	0.1663

Variable	DF	Parameter Estimate	Parameter Estimate Standard Error	1 for HO: Parameter 0	Prob>/T/
Intercept	1	97707	26851.129135	3.639	0.004
x1	1	1176.469539	652.53066179	1.803	0.0734
x2	1	1976.120796	1141.5176450	1.733	0.0852
x3	1	76735	16333.666754	4.697	0.0001
x4	1	74.491841	182.29552065	0.409	0.6834
x5	1	3.970385	1.47955825	2.683	0.0081
x6	1	3571.110070	2513.8270670	1.421	0.1575
x7	1	0.955740	7.39884080	0.129	0.8974
x8	1	0.248207	0.27650450	0.898	0.3708
x9	1	0.091063	0.16591170	0.549	0.5839

SEMI-LOG FUNCTION

Dependent Variable Y

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	8	125941760	157402145	2.126	0.0578
Error	37	27391858698	740320505.34		

Root MSE	2720.83139	R Square	0.3149
Dep Mean	59830.00000	Adj R-sq	0.1668
C.V	45.47690		

NOTE: model is not full rank latest =square solutions for the parameters are not unique. Some statistics will be misleading. A reported DF of 0 to B means that the estimate is biased.

The following parameters have been set to 0, since the variable are a linear combination of other variables as shown.

LOG X3 = 0

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	1 for HO: Parameter 0	Prob>/T/
Intercept	1	74398	105796.13785	0.703	0.4863
LOGx1	1	26478	34119.654551	0.776	0.3327
LOGx2	1	26478	19585.230790	1.131	0.2662
LOGx3	0	0			
LOGx4	1	114444	71816534386	1.594	0.1195
LOGx5	1	4935.531196	9791.3100871	0.504	0.6172
LOGx6	1	10867	13167.767167	0.825	0.4145
LOGx7	1	4360.313730	3440.9589860	1.267	0.2130
LOGx8	1	880.432805	3272.5413843	0.269	0.7894
LOGx9	1	1290.284670	3078.6718744	0.419	0.6776

LINEAR FUNCTION
Dependent Variable Y
Analysis of Variables

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	9	15.88850	1.76539	5.034	0.0001
Error	149	52.25722	0.35072		
C total	158	68.14573			

Root MSE	0.59222	R-square	0.2138
Dep means	11.03732	Adj R-sqaure	0.1663
V.C	5.36557		

Variable	DF	Parameter Estimate	Parameter Estimate Standard Error	1 for HO: Parameter 0	Prob>/T/
Intercept	1	11.010474	0.22432000	49.084	0.0001
x1	1	0.015504	0.00545131	2.844	0.0051
x2	1	0.019282	0.00953648	2.022	0.0450
x3	1	0.0648732	0.013645490	4.754	0.0001
x4	1	0.000828	0.00152294	0.544	0.5875
x5	1	0.000043727	0.00001236	3.538	0.0005
x6	1	0.045445	0.02100104	2.164	0.0321
x7	1	0.000042852	0.00006181	0.693	0.4892
x8	1	0.000001996	0.00000231	0.864	0.3888
x9	1	0.000001791	0.00000139	1.293	0.1982

DOUBLE-LOG FUNCTION

Dependent Variable: LOG Y

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	8	5.51912	0.68989	2.540	0.259
Error	37	1.04895	0.27159		
C Total	45	15.56806			

Root MSE	0.52115	R Square	0.3545
Dep Mean	10.04895	Adj R-sq	0.2150
C.V			

NOTE: Model is not full rank latest =square solutions for the parameters are not unique. Some statistics will be misleading. A reported DF of 0 to B means that the estimate is biased.
The following parameters have been set to 0, since the variable are a linear combination of other variables as shown.

LOG X3 = 0

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	1 for HO: Parameter 0	Prob>/T/
Intercept	1	7.774644	2.02637279	3.837	0.005
LOGx1	1	0.759709	0.65351289	1.163	0.2525
LOGx2	1	0.291807	0.37512691	0.778	0.4416
LOGx3	0	0			
LOGx4	1	0.115133	0.13755424	0.837	0.4080
LOGx5	1	0.053118	0.18753846	0.283	0.7716
LOGx6	1	0.213675	0.25220963	0.847	0.4023
LOGx7	1	0.064150	0.06590662	0.973	0.3367
LOGx8	1	0.036650	0.6268082	0.585	0.5623
LOGx9	1	0.029868	0.05896753	0.507	0.6155