Contribution Of Farm Service Centres To Agricultural Production In Plateau State, Nigeria

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ABSTRACT

Development of agriculture and improvement in productivity is impossible without increasing farmer's knowledge and access to quality inputs. In view of this, the mandate of Farm Service Centre's was examined. Survey method was used to source for secondary and primary data. A total of 526 questionnaires were administered in twelve Farm Service Centers in 10 local government areas of the three agricultural zones of Plateau State. The study included; institutional evaluation, services rendered, patronage, access to inputs, crop cultivation and performance. Results revealed that Farm Service Centers were unable to discharge their mandate satisfactorily because inputs and services were not available or inadequately supplied. This situation adversely affected their contribution to agricultural production. Empirical evidence revealed that average yield of crops such as maize and sorghum in 2007, was below 1 ton (1000kgs/ha). The study concluded that Farm Service Centre's could make significant contribution to agricultural productivity. But it requires public and private partnership (PPP) for sustainability. This paper discusses concepts and models of Farm Service Centre's, mandate, resource availability, patronage, crop production and suggestion for the establishment of sustainable models.

Keywords: Knowledge, patronage, productivity, sustainability, Technologies.

1. INTRODUCTION

Agriculture in Plateau State, Nigeria (Fig.1and 2) and globally, has been influenced by physical and anthropogenic factors such as soils, temperature, rainfall, technology, economics, politics, culture and land tenure systems.

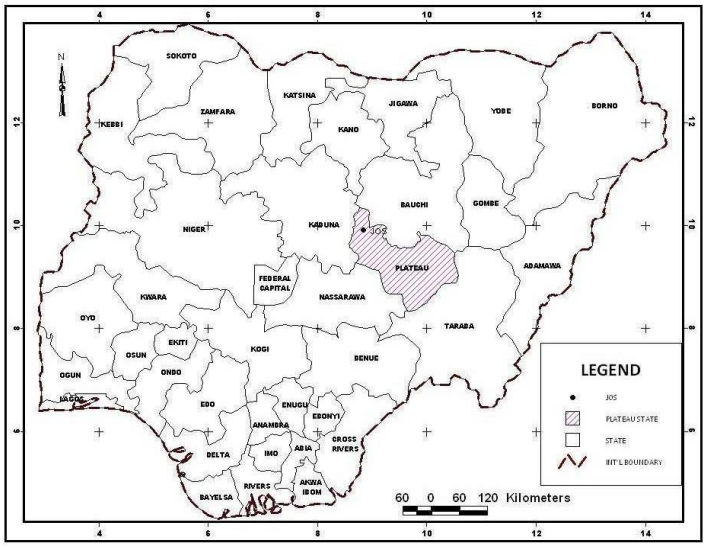

FIG 1: Nigeria showing Plateau state

Source: Geographic Information Systems (GIS) Laboratory, Department of Geography and Planning, Jos, Nigeria (2011).

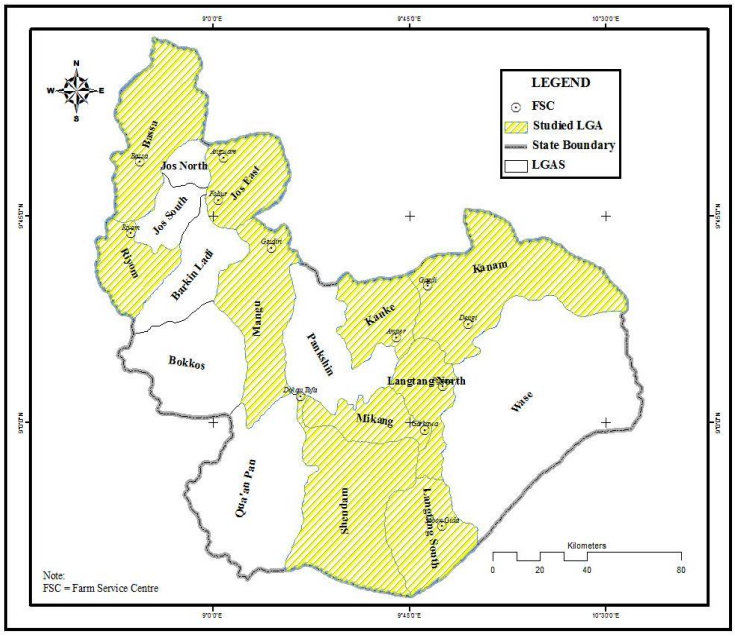

FIG 2: Plateau State showing selected study areas.

Source: Geographic Information Systems (GIS) Laboratory, Department of Geography and Planning, University of Jos, Nigeria (2011).

Over the years these factors have continued to affect farmer's production. Government officials, non-governmental organizations (NGO'S), local, national and international institutions, civil societies and stake holders emphasize the need to secure food security by investing adequately in agriculture. But, annual budgets seem to undermine production capacity and food security. The reality is that agricultural production is negatively affected. Food security is therefore becoming seriously threatened. A lot of factors may be responsible. For instance, one of the major constraints to agricultural production in Nigeria is the dominance of small holders farming contributing over 90% of total agricultural output. The bulk of agricultural output is usually from households who cultivate an average of less than 2 hectares. Besides, agricultural production techniques have remained rudimentary (Adeoye, 2005[1]).Perhaps this explains why yields of crops such as maize, millet, and sorghum which together account for about 1/3 of the harvest area, remain virtually unchanged with output just about 1.5tons/ha. In Nigeria, current fertilizer application is estimated at 13kg/ha. This is far below Food and Agricultural Organizations recommended standard of 200kg/ha (National Food Reserve Agency, 2008[2]).

Apart from the factors mentioned earlier, there are others such as inadequate or lack of access to farm inputs, traction technology-tractors, farm equipments, poor storage, lack of agro-processing facilities, mass urban-rural migration in search of white collar jobs and general laziness (Crudan News Letter, 2009 [3]). Farmers have to contain with poor agricultural policy, poverty alleviation implementation programmes, inflationary factors, and continued use of rudimentary traditional traction technologies. Also, the poor performance of agricultural sector and the incentives of oil boom have encouraged labour out migration from agriculture,

devaluation of the Nigerian currency, the Naira, has made the country's export products less competitive in the world market. It is very discouraging to note that Plateau State has 2,714,700 hectares of land suitable for agricultural production but only 1.5million hectares are being cultivated (National Bureau of Statistics, 2006[4]).Given the prevailing constraints earlier mentioned, crop production has been very low. For example, production figures since 2001-date, are less than one ton/ha (Baklit, 2012[5]).In spite of the potentials crop productivity has been greatly affected by the following factors; Degrading resource base, competition for land, low income, lack of agricultural credits and loans, and low investments in agriculture. For instance, only 3.2% was invested in 2004 compared to budgetary expenditure. This is far below 10% recommended by African Union (AU) at the conference of African Ministers of agriculture that was held on 2/03/2003, at Maputo, in Mozambique.

The purpose of this paper is to discuss the nature and the extent of the contribution of Farm Service Centre's (FSC'S) to agricultural production, provide empirical evidence and information that could guide the government and stake holders towards putting in place strategic and sustainable models of Farm Service Centre's. It is expected that government as the major regulatory body, should promote not only agricultural productivity but also state-of –the -art best practices, technologies, and services, guarantee innovation diffusion and enterprise development. Besides, existence of FSCs is very important because they are a novelty and critical to providing small scale farmers with quality inputs, services and information they need to make the transition to successful commercial agricultural production (Kvezereli, 2010[6]).Achieving this depends on their efficiency and functionality. For instance, farmers at all times should have access to farm equipment, improved seeds, services of experts such as qualified agronomists, extension economists and veterinarians.

2. CONCEPTUAL DEFINITION AND MODELS OF FARM SERVICE CENTRE'S

It is necessary to create Farm Service Centre's because agricultural production takes place largely in rural areas within predominantly dispersed settlements, each lacking in threshold population for production and support of basic infrastructures capable of generating sustainable socio-economic development. Farm Service Centre's were created to: provide essential farm inputs, including supply of farm equipment, especially machinery to farmers or make available services to ensure that farmers are supported with a wide range of services (AGROCEL, 2005[7]).According to James Richardson International (2005[8]), FSCS are the heart of operations, forming the vital link between farmers and end users, consumers around rural communities and globally.

Farm Service Centre's are a novelty for farmers as well as the entire local communities and the state at large. Their existence is very important as the development of agriculture in the state depends on the proper

functioning of these centers. In some countries, for example, Georgia, they are private, for profit businesses, focused on commercial delivery of high quality goods and services to smallholder farmers. Their activity has proven to be both commercially viable; with over $2million dollars in goods and services sold to 25,000 clients since 2007, as well as critical to providing small farmers with quality inputs, services and information they need to make the transition to successful commercial agricultural production (Kvezereli, 2010[9]).

Farm Service Centre's in Nigeria are products of Agricultural Development Programmes (ADPs) Sponsored by the world Bank in 1975/6.The purpose was for input provision or delivery to farmers because it was realized that access to inputs could boost agricultural production all over the country. Consequent upon this, Farm Service Centre's were created in 1987 by Plateau State Agricultural Development Programme (PADP) to promote increased agricultural productivity and thereby facilitate rural development. It was established to serve 365, 584 farm families (PADP, 1995[10]). The ratio of Farm Service Centre's to farm families was to be 1: 10,000. As a policy, farmers should not travel more than between 5-10 kilometers. The mandates of FSC'S in Plateau State and elsewhere appear to be similar and these include; providing input supply and / or making available farm equipment/machinery.

Given their mandate it is implied that farmers could purchase inputs, gain access to agro-chemicals such as pesticides, fertilizers, agricultural credits and loans, technical equipment/machinery especially tractors, as well as technical training. For example, improved (advanced and more productive) seeds were also marketed to farmers at these locations in an effort to raise yields and improve efficiency (PADP, 1995 and USAID, 2011[11])

FSCs were centrally conceived by all the Agricultural Development Programmes (ADPs) created by the Federal Government of Nigeria (FGN) in the 1970-1980s, to provide high quality products, key inputs and superior services, through a network of integrated service delivery systems. The Farm Service Centre is conceived as an input-output centre at the village level, where farmers can obtain extension services, advice, credit and other forms of inputs as well as sell their products (Idachaba and Okorie, 1983[12]).

However, USAID is of the view that Farm Service Centre's are expected to be profit-oriented, privately owned enterprises intended to provide agricultural inputs, services, and market linkages just as it has made for Afghan farmers needs for transition to agricultural production even at the commercial level. To a large extent, efficient supply chains that can deliver sufficient quantities of high quality products to farmers at lower costs, improving production and creating cost efficiencies (USDA, 2009[13]). These centre's could also serve as nodes or produce access to market and technical information, output markets, working capital financing in order to address the multiplicity of challenges facing, Afghan, or Plateau State farmers and globally.

2.1. MODELS OF FARM SERVICE CENTRE'S

To sustain agricultural production, many countries have adapted the strategy of establishing agricultural Farm Service Centre's to provide different types of services as may be specified. Examples of some of these models include; Farm Service Agency (FSA) in the United State of America, Hartebeeskraal Thusong Farm Service Centre in South Africa , Farm Credit Canada (FCC) Guelph Service Centre and China Farm Service Centre.

Farm Service Agency (FSA) in United States of America renders a wide range of services to farmers. These include; administration of farm commodities, crop insurance, resource conservation, disaster management or control programmes, payments and issuance of agricultural loans to farmers through a network of state and county offices. In other locations such as Michigan, Agricultural Service Centre's provide inputs service (improved seeds and chemical fertilizers) agronomy and crop protection. Other services include: scouting and sampling, GPS soil sampling, report generation and crop insurance.

While, Hartebeeskraal Thusong Service Centre in South Africa provides advice and support to people participating in food security projects-hydroponics tunnel production as integrated service empowerment through participation (Jacobs, 2009[15]). Essential nutrients are supplied through irrigation rather than the soil. A company known as ESKOM, supported the irrigation system by providing two tanks to replace leaking dams, offered a ten day training programme (capacity building) organized by an NGO, Skills for Africa, refresher training on fertilizer and maintenance systems and markets/supplied fresh produce to street hawkers as well as production of pre-packed produce which has high profit supplied to supermarkets as far as Bracken fell.

Farm Credit Canada (FCC) Guelph Service Centre is a financially self-sustaining Federal Crown Corporation operating in 100 offices located primarily in rural Canada. It is Canada's largest provider of business and financial service to farmers and agricultural businesses (Farm Credit Canada, 2008[16]). The centre supports all sectors of agriculture with finances and alliance partnership. Profits are re-invested into agricultural green development products and services to benefit the industry.

The focus is on providing technical services (capacity building) to equip farmers to ensure environmental protection. For example, land conversion-converting environmentally sensitive land to perennial cover, taking care of vulnerable areas-managing agricultural lands near water and helping producers to adopt Beneficial Management Practices (BMP'S) ,Water Shade Evaluation(WSE) and shelter belts- planting trees on agricultural land funded under Canada's broad agricultural policy framework.

China Farm Agency services include; management of farm commodities, conservation and making loans available to farmers. Funding is available every year. Like in 2002, $4.08 billion was expended. Eligible farmers can access different types of loans to help cushion the effect of disasters, operate or own farm land (USDA, 2009[17]).Up to $400,000 can be obtained payable after seven years or direct guaranteed sum of between $200,000-300,000 as operational capital to persons interested in agricultural production.

None of these models fit into that of Plateau State, Nigeria. Therefore, conscious efforts must be made to establish sustainable and functional models through involvement of stakeholders in the communities in order to facilitate the availability of farm inputs, services, knowledge update or capacity building, technological applications and increase agricultural productivity.

3. MANDATE AND RESOURCE AVAILABILITY

According to the information provided by the Project Monitoring and Evaluation (PME) Department, 2012, the mandate of the Farm Service Centre's is to "Take inputs to the door steps of rural farmers in the state". Thus, the centre's have only one primary role to play as a creation of Plateau Agricultural Development Programme (PADP, 1989[18]). It is very clear that the mandate has been stated in broad terms only as the quantum of farm inputs is neither indicated nor specified. Given this situation, the implication is that resource availability became a matter of probability because it was only when inputs are available before they could be distributed to the centre's. This arrangement turned out not to be very reliable as the centres were unable to discharge their mandate satisfactorily. The reason for their failure was because there were no annual budgetary allocations in terms of adequate funding for input procurement for distribution. Consequently, inputs and services were inadequate or not available in most of the centres since 2001 to date.

The resources that were made available at the centres included; Farm inputs, staffing and stores. For example, the inputs supplied or distributed to the centres were: Improved seeds, agro-chemicals and technical farm equipment. The information on the various farm inputs and equipment made available to the FSC's from 2001-2008 is summarized (TABLE 1).

Table 1: Input Distribution (2001-2007)

Farm Service Centre	Farm Inputs List	2001	2002	2003	2004	2005	2006	2007	2008
Fobur (Jos East LGA)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Jebu-Bassa (Bassa LGA)	Fertilizer								
	Karate EC	1000 mls	5000 mls			25o mls	2250 mls		
	Apron star	8500 gms	300 gms				300 gms	21 gms	
	Tricel							1,250 mls	
	Gramoxone								4 ltrs
	Primextra								2 ltrs
	Glycel					4 ltrs		4 ltrs	
	Maize	260 kgs	60 kgs	120 kgs	72 kgs	14,400/ 50 kgs	205 kgs	20 kgs	175 kgs
	Cabbage	45 kgs	45 kgs		14 kgs	29 kgs	15 kgs	18	

								kgs	
	Sweet pepper	95 kgs			50 kgs	25 kgs	25 kgs		
	Carrots	75 kgs	10 kgs	10 kgs	15 kgs	55 kgs	16 kgs		5 kgs
	Lettuce		25 kgs						
	Tomatoes		30 kgs		25 kgs	19 kgs	37 kgs	0.5 kgs	
	Onions		10 kg			3 kg			
	Cucumber		0.5 kg		10 kg	5 kg	10 kgs		3 kgs
	Water melon						10 kgs	5 kgs	
	CP 15 Sponger						1 kg		
Ganawuri (Riyom LGA)	Cabbage	1,105 grms	1,250 grms	140 grms	775 grms	400 grms	525 grms		
	Carrots	1,800 grms	200 grms		500 grms	750 grms			
	Sweet pepper	900 grms	1,500 grms	3,000 grms	1,500 grms	875 grms	575 grms		
	Tomatoes		1,400 grms						
	Maize		32 kgs		200 kgs		20 kgs		
	Agro-chemicals								
	Apronstar	200 kgs	300 kgs	1,500 kgs					
	Decis	10 ltrs							
	Acetal LQ			4 ltrs					3 ltrrs
	Gramozone								
	Knapsack						2		
	Matchets				5 ms	35 ms			
Dengi (Kanam LGA)	Primextra	15 ltrs	15 ltrs				3ltrs		
	Ronstar				4				
	Karate EC						1,250 mls		
	Rice farro 2	60 kg							

***Source**: Field Work, 2011.*

The table indicates that annual input supply for a period of eight years (2001-2008) was irregular, grossly inadequate and not even available to farmers. A similar experience has been reported by an Independent Evaluation Group (IEG) (2012) that supplies of fertilizers for instance, in Ilorin and Oyo (Kwara and Oyo States) in Nigeria, were erratic, largely because of centralized government control of international procurement and very heavy subsidy programme which did not encourage availability or regular and timely delivery during fiscal difficulties. This is rather very unfortunate.

Details of the results from TABLE 1 revealed that the supply of farm inputs and equipment to the sampled FSCs has been quite unsatisfactory. For instance, only Bassa received improved maize seeds consistently

from 2001-2008 and 14,400 of 50kg bags in 2005. In view of the prevailing situation, absence or inadequacies of inputs and services have implications for patronage of the centre's and crop production.

4. PATRONAGE, SERVICES AND CROP PRODUCTION

One of the objectives of the study was to find out how well or badly the FSCs have discharged their mandate. It is envisaged that if the centres are functional and discharging their responsibilities very well, patronage of the Farm service Centre's will be all year round. Unfortunately this appears not to be happening because a critical observation of the results revealed that only 34% and 32% of the respondents from central and southern zones visit the centre's mainly during the rainy season, while only10% from the northern zone visit the centre's during the wet season and less than 10% visit the centre's all year round (Figure 3). However, the situation is not the same in countries such as Georgia because Farmers visit Service centre's to obtain inputs and other services regularly and at any season of the year. Also, at Abu Dhabi Farmers Services Centre (ADFSC) in the United Arab Emirate, over 3,000 registered members patronized the centre regularly regardless of the season (Muhammad, 2011[21]).

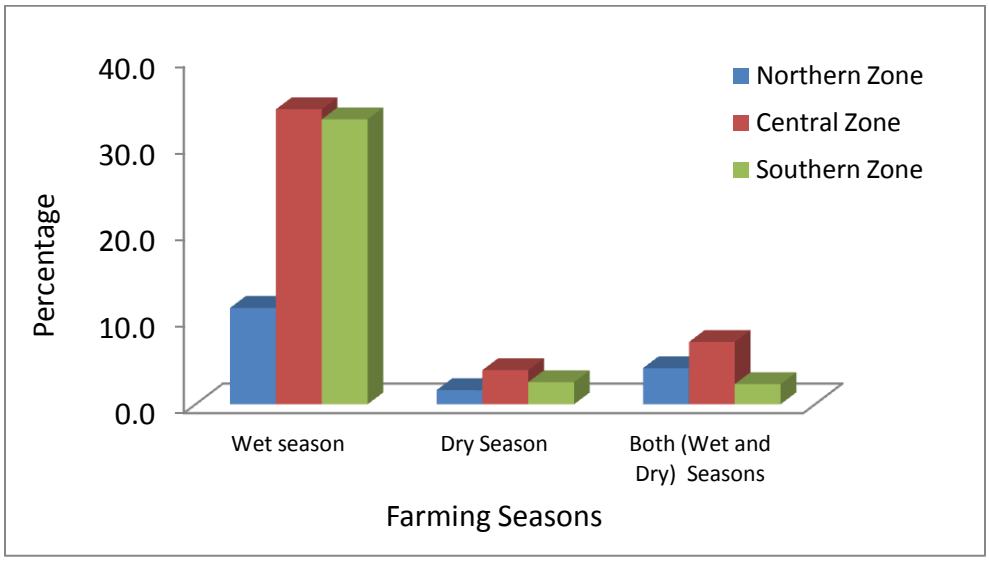

FIG 3: Farmers Patronage of Farm Service Centres at different farming seasons.

Source: Field Work, (2011)

FSC's are expected to be providing services to farmers and so it was necessary to find out whether farmers do have access to their services and to ascertain their contribution directly or indirectly to agricultural productivity. Respondents were asked to mention the type of services they have access to. For example, their responses (Fig.4) revealed that 25% and 10% of the respondents from the southern and central zones had access to crop management services, 10-11% received services on soil nutrition management

(fertility/maintenance) less than 15% received instruction on pest control. On the whole, the services provided by FSCs to respondents are generally unsatisfactory.

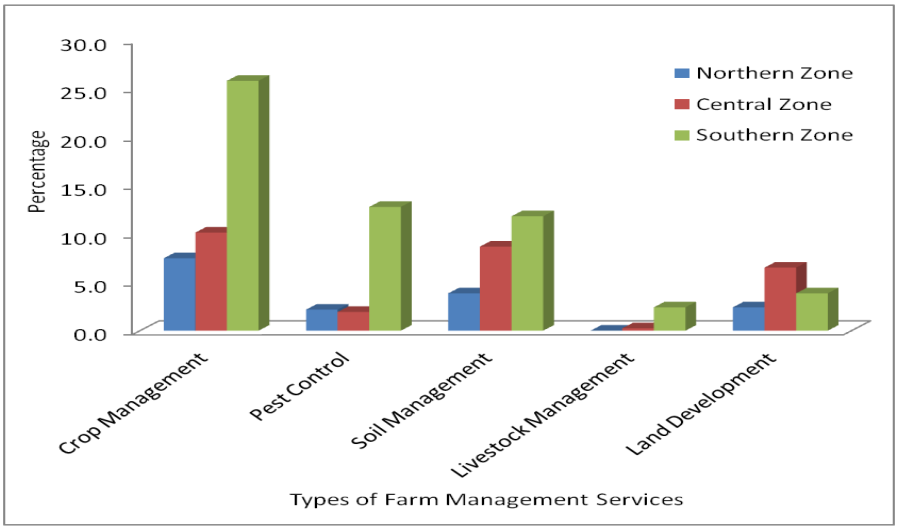

FIG 4: Access to Farm Service Centre Services, 2011.

Source: Field Work, (2011)

Where farmers do not have easy access to services such as crop management, pest control and farm inputs as mentioned earlier, there is the likelihood of not achieving increase agricultural production. The implication is that production level will be very low.

Although there is no base line data or record of the nature and extent of their contribution to increased agricultural productivity, farmers have been introduced to new farming systems, such as mono cropping for maize and a wide variety of vegetables like cucumber, lettuce, carrots and cabbage. An assessment of the cultivated land area, crop yield and agricultural productivity at the locations of farm service centres was done. The results in TABLE 2 have revealed that; Respondents in the study area cultivated large expanses of land for certain crops but achieved very low crop yields. For instance in 2007, for grains like maize the yield in Pilgani was 810kgs/ha, at Angware it was 710gs/ha but at Gindiri it was just 100kg/ha.The yield for sorghum was just 510kgs/ha at Angware, while other centres realized less than even 500kgs/ha. However, rice yield was a bit better. At Angware the yield was 2,050kgs/ha, at Pilgani it was up to730kgs/ha but in other centres it was less than 500kgs. The yield for millet is also unimpressive. Only 100kgs/ha was produced at Gindiri while the remaining centres had less than 500kgs/ha.

Table 2: Crop Yield (2001-2007)

FSC Locations	Crop	Yield (Kg/HA)						
		2001	2002	2003	2004	2005	2006	2007
Angware	MAIZE	740	380	380	590	600	690	710
Gindiri		140	140	120	70	110	100	100
Pilgani		550	660	680	710	790	840	810

Angware	SORGHUM	260	290	330	480	560	530	510
Bassa		61	84	68	63	61	63	66
Fobur		29	27	36	41	38	57	42
Ganawuri	MILLET	210	280	290	320	340	300	280
Gindiri		130	130	240	130	100	100	100
Dokan Tofa		170	180	200	180	180	170	150
Angware	RICE	1760	1120	800	1500	1750	1900	2050
Gindiri		210	120	140	140	120	140	110
Pilgani		760	860	840	780	730	730	730

Source: Field Work, (2011).

5. STAKEHOLDERS AND ESTABLISHMENT OF SUSTAINABLE FARM SERVICE CENTRES

Developing agriculture and the economy of a nation is impossible without having functional Farm Service Centers Framework or programme. This has been confirmed globally because of the critical role that they could play in promoting increase agricultural productivity and diversification of economies. Therefore, to promote the development of agriculture and increased productivity in Plateau State, Nigeria,, a participatory model adapted after El-Ghonemy's interaction model of rural development is proposed by fig. 5. This approach is to galvanize all stakeholders into developing a practical and sustainable farm service institution. These include; Agricultural Financial Institutions, Village Cooperative Societies, Community Development Associations, Traditional Institutions, Micro-Finance Banks, community Banks and the Government. Each of the stakeholders has specific roles to play. For example:

i. Agricultural Financial institution's major role is to provide agricultural credit and loans for value chain activities such as loans for farm inputs (seeds, fertilizers, agro-chemicals and pesticides),development loans (tractors, agricultural machinery/equipments/implements), promote corporate farming on-farm and off-farm, silos, agro-processing, polishing, transportation and export of products. Apart from ensuring access to credit facilities, they are expected to be involved in capacity building and creating linkages with agro-dealers or companies for training workshops by resource persons.

ii. Village Cooperative Societies in the rural areas should be concerned with forming or organizing themselves into different groups. For example, farmers input procurement cooperatives, farmer's producer's cooperatives or private farmer's commercial programme (PFCP).They are to pool available resources together from members and utilize the same in the best possible manner like establishment of a functional Farm Service Centre and the benefits are shared by members.

iii. Community Development Associations are to provide platforms for creating increase awareness and foster effective communication relating to community development issues and concerns, organize training opportunities for capacity building through identified resource persons. Members could raise funds for project

execution locally or externally to promote for instance, agricultural and economic development in the community. One such projects should be the establishment of a functional Farm Service Centers that will ensure regular availability of farm inputs and services, traction technology and construction of basic agricultural infrastructures' in rural areas.

iv Micro-Finance Banks are to extend microloans to individual businesses and organizations, make social investments, and foster development of small businesses and economic growth. Also, they should provide tools to entrepreneurs through levels of financial expertise and business resources.

v. Traditional Institutions as custodians of culture and traditions of land should focus on community-based land tenure and government land policy issues, explore avenues for equitable land ownership based on an acceptable justifiable principle or philosophy of the community, make informed decisions about how to ensure that land should be made available for agriculture or any development project when the need arises.

vi. While community Banks being depository institutions, typically locally owned and operated should focus on the businesses and needs of the community, organizations or individuals. They are expected to make small loan lending decisions through people who understand the local needs of the community, businesses, families and farmers. Thus, they manage community money and financial goals for strong future such as investing in the establishment of a participatory farm service centre to promote sustainable agriculture and increase productivity.

vii. Government is to play an effective regulatory role, to defend the establishment of Participatory development projects like Farm Service Centre that has direct bearing on the socio-economic life of the people. Thus, establish a public private partnership (PPP). More importantly, it should adopt a strong internationally acceptable and applicable standard of good governance relating to land tenure, coordination, promoting democratic, meaningful participation of project execution, planning and management of natural resources.

Development of an interaction model of Farm Service Centres (FSCs) could promote the need for a multi-dimensional and sustainable approach to service provision that could facilitate increased agricultural productivity through institutions such as Farmers' Cooperative Societies, Micro-Finance, Community Development Associations, and Traditional and Religious bodies. It can also promote the development of Renewable Energy Technologies by Research and Development (R&D). Thus, the institutions are expected to execute their roles and also come up with initiatives that will fuel agricultural productivity in Plateau State; an interaction model of a Farm Service Centre (Fig.5).

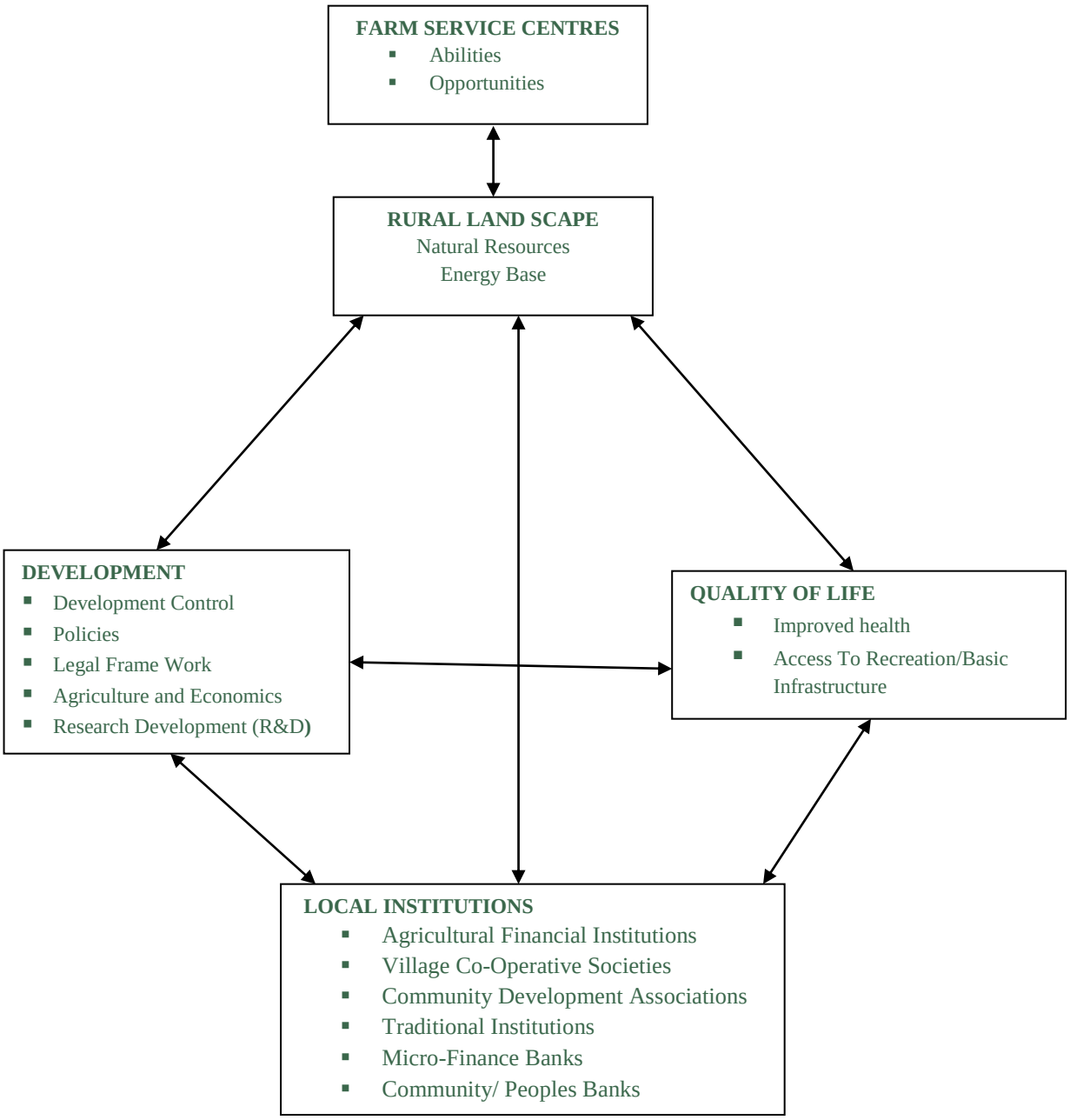

FIG 5: Interaction Model of Farm Service Centre.

Source: Adapted from El-Ghonemy, 1984.

Establishment of participatory models of farm service institutions is very necessary because of their pivotal role as opined by Kvezereli in 2010, that Farm Service Centers are a novelty for farmers as well as the entire region. It is also important to note that in the United Kingdom, Cornwall Council, 2012 recognized their

services as contributing towards achieving sustainable agricultural development, improving the social environment and economic well-being of rural communities.

It is envisaged that government would play its regulatory role by putting in place a just and egalitarian legal frame work and a dynamic agricultural development policy that guarantees' the flow of information, ideas for efficient harnessing or utilizing natural resources available in rural areas. The combined network of participation by all stakeholders is required to support research and development (R&D), production or procurement of farm inputs, traction technology, equipment and implements to be regularly made available at affordable cost to farmers at established Farm Service Centres. Furthermore, these centers are expected to be very functional where farmers could have regular access to goods and services especially, input supply, modern traction technology and basic agricultural infrastructures'. Effective utilization of all these will certainly give rise to increase in agricultural productivity, diversification of economies of the rural areas, improved income generation and quality of life.

6. CONCLUSION

The paper has discussed and highlighted activities and contribution of Farm Service Centres to agricultural production in Plateau State. Although institutional information on the nature and extent of their contribution to increased agricultural productivity was not available, empirical evidence from field survey revealed that over the years, crop production and yield of grains such as maize, rice, millet and sorghum was below one ton (1000Kgs/ha). Unavailability of annual budgetary allocations affected input procurement, resource availability, patronage, rendering of basic services, crop production and the performance of the FSCs. Consequently, they were unable to discharge their mandate satisfactorily. This is a very disturbing scenario because the Farm Service Centres have been in existence for over 20 years in the three agricultural zones in Plateau state.

Agriculture is scientific and location specific. Therefore, to ensure increase in agricultural productivity, Farm Service Centre establishment should involve effective participation of local institutions being the stakeholders within the communities. This is very important because of the role each of them could play in order to ensure sustainable availability of farm inputs, resources, adequate funding, service delivery, capacity building, and knowledge acquisition; access to state-of-art the technologies through research and development institutions and its application in agricultural practice.

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