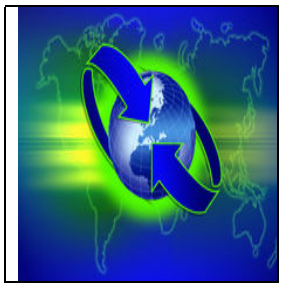

Fadama programme and Food Security in Nigeria: a Case Study of Cross River State, Nigeria

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Abstract

Nobody denies the reality that food is essential to life with all living organisms (Man inclusive). In this light, FADAMA Development Project is a World Bank development programme which collaborates with the Federal, State and local governments in Nigeria in agricultural productivities, especially in areas of food security livelihoods sustenance and poverty reduction. The objective of this study is to investigate the impact of Fadama Development Project on food security in Cross River State, Nigeria. The survey inferential research design has been adopted for the study. The study areas cover the Bekwarra local government area in the Northern Senatorial District of Cross River State, Yakurr local government area in the Central Senatorial District of the state as well as Akpabuyo local government representing the Southern Senatorial District of Cross River State. The stratified random and purposive sampling technique was adopted for the study. Sample size of 1500 (i.e., 500 for each geopolitical zone under the study) was selected for the study. Hypotheses were formulated in line with the objectives of the study; t-test or one sample mean (also known as population t-test) was employed to test the hypotheses. Based on data analysis and empirical findings, it was discovered that the Fadama project has contributed to food availability and also to accessibility and affordability of food distribution, some recommendations were made among which is that Government and relevant authorities should through agricultural programmes such as FADAMA ensure adequate provision of financial incentives to farmers that is sufficient enough to boost food production and gearing of rural farmers' incomes in the upward direction that consequently ensures reduction in rural poverty.

Keywords; Fadama programme, food security, food accessibility, food affordability, poverty reduction and socioeconomic status of farmers

Introduction

Food is essential to life with all living organisms (Man inclusive). Okon (2009) observed that because food is so basic to man's existence, modern societies tackled the problem of food shortages in three ways: by attaining self-sufficiency in the production of their food requirements; by supplementing their integral food production efforts with food

importation: and by adopting a strategy that is rather imperialistic in nature by controlling the resources of others in order to ensure the regular supply of one's needs. Of the three, food self-sufficiency is the most reliable policy to be pursued which we are yet to be attained in Nigeria.

Olusola (2013) explained that a country experiences food self-sufficiency or food security when all people, at all times have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life. This means that the right to adequate food is realized when every man, woman, child, alone or in community with others, has physical and economic access at all times, to safe and nutritious food, consistent with the right to adequate food and the fundamental right of everyone to be freed from hunger (FAO, 1996; FAO,2013).

Food security can be defined at various levels such as regional, national and global levels (Lofgren and Richards, 2003). At the Global level, food security means adequate global food availability and adequate capacity of the food-deficit countries to import. For this to be ensured, barriers to trade especially in food items at the international level must be removed. At the national level, food security connotes adequate food availability from all sources to meet the per-capita food requirement of the population. In Nigeria, Agbo, Rousseliere and Julien, (2014)observed, that availability of adequate food storage facilities, affordability of rising food import bills, provision of appropriate channels for food marketing and distribution, and the development of food processing infrastructures among others are key factors for consideration.

Food insecurity on the other hand is the inability to obtain sufficient, nutritious, personal acceptable food through normal food channels or the uncertainty that one will be able to do so (Sanusi, 2019). Between 1940s to early 1950, Nigeria had adequate food security. The country was able to feed her citizens and at the same time export the surplus food items for

foreign exchange earnings. Every region specialized in the production of one or two major crops. With the advent of civilian administration in 1999 greater attention was given to food production. The Nigerian Minister for Agriculture then, publicly restated government's commitment to combat hunger and malnutrition by providing adequate food for the people and ensure food security for all. To achieve this target a number of what he called food security initiative were launched among which is the National FADAMA Development project NFDP).

FADAMA Development Project is a World Bank development programme which collaborates with the Federal, State and local governments of Nigeria. The National FADAMA development project is executed in phases: FADAMA I and II focused mainly on the provision of irrigation facilities for crop production although, non-farmers were among FADAMA resources users, such as pastoralists, hunters, vulnerable and marginalized groups. FADAMA III project is a follow-up in 19 states which Cross River State, the research field of study is inclusive.

World Bank consultant on the FADAMA III project, Dr. Idris Badiru, made the disclosure that World Bank has earmarked 200 million dollars or N7.2 billion for FADAMA III additional financing of projects in Nigeria on Thursday in Calabar at the opening of the FADAMA III additional financing mid-term review mission to Cross River State. Cross River is moving in the right direction, this was the speech the consultant made, according to the SUN Newspaper publication (May 27, 2017).

Nigeria Agricultural Development Policies since 1960

A fundamental reality in the Nigerian economic environment is the acceptance that agriculture is the mainstay of the economy. To be sure agriculture represents a strategic asset to the overall national economy. The importance of agriculture is manifested in Nigeria as thus:

a. provision of employment opportunities to over 60 percent of Nigerian workforce.

b. Widespread prevalence of poverty has been linked to the level of the development of agriculture in Nigeria as over 40 percent of Nigerians live below poverty line;

c. Meeting the food and fibre needs of the population.

To Eminue (2005) agriculture does not only derive its importance from the number of foreign and domestic institutions and parastatals involved in its activities but under the 1999 constitution of the Federal Republic of Nigeria, agriculture is on the Concurrent Legislature list, which implies that either Federal or State governments (or both) could invest in them. However, in the past especially at independence agriculture was a Residual activity administered under the Ministry of Economic Development and classified under primary production activities and was the direct responsibility of the Regional governments (Eyo, 2005).

Agricultural policies in Nigeria has gone through history of changes, Osondu, Ezeh, Emerole and Anyiro, (2014), identified three phases of this transformation to wit: Pre-1970 era, 1971-1984 era and post 1984 era. The authors averred that both the technical and socio-economic forces operating within this system determined each era's policy. Prior to Nigeria's independence, when food was somewhat in abundance with respect to the needs, emphasis of public policy was to produce cash crops for export and foreign exchange. As observed by Eyo (2005) the first agricultural development plan of the first national development plan (1962-1965) where agricultural development was planned as part of the government's effort to meet the general objectives of creating necessary conditions for achieving and maintaining a high possible rate of improvement in standard of living of the people. Here the marketing boards were actively involved as it was a carryover of the colonial agricultural policies. During this period the agricultural sector revolved around research into the challenges of production of cash crops for exports thereby maintaining, the status – quo and jettisoning policies that would have addressed agricultural challenges in other areas as surplus in food crop production.

As pointed out by scholars that the agricultural development plan of the second national development plan (1970-1974) was seen as government effort to create necessary conditions for the improvement of the standard of living of the people, ensuring strong self-reliance and united nation; justice and order. The objectives of the agricultural sector included expansion of production of export crops, but ensuring availability of new materials to support domestic manufacturing and increasing rural employment. In contrast to the first agricultural development plan where the central government were passive, in this plan government showed commitment. To achieve the objectives of this plan, government evolved and utilized appropriate institutional and administrative apparatus to facilitate the smooth integrated development of these potentials.

According to Omotesho, Ogunlade, Lawa, and Kehinde, (2016)) the first step by government was the launching of the National Accelerated Food Production Programme in 1972, a strategy to give more food. This programme was formally initiated in six states in 1973 namely Western, East Central, Benue-Plateau, Lagos, Bendel and Kano (Adereti & Fadare, (2017). Its main objective was to accelerate the production of six major food crops to wit: rice, maize, millet, sorghum, cassava and wheat. The increased production is to be observed by using field test packages of improved practices that can out-yield the local and traditional ones. The project is integrated nationwide through adaptive research and extension programme which was designed to enable Nigerian farmers to rapidly increase food crop production.

Olusola, (2013) pointed out that various institutes and centres were established to guide and coordinate the activities of NAFPP. For instance, the National Rice/Maize centre was established for rice and maize in participating states. This centre is based at the National Cereals Research Institute (NCRI) in Ibadan, while a centre for millet, sorghum and wheat is at Samaru-Zaria and the National Root Crop Research Institute at Umudike-Umuahia takes care of cassava. The International Institute for Tropical Agricultural (ITTA), in Ibadan is the national coordinator of the programme (Ahungwa, Umeh & Muktar, 2013). The various crop research institutes

involved in the programme are expected to evolve, through researching on, high yielding varieties of the crops and transferring these to be tried by agents on farmer's farm. The NAFPP as a strategy in accelerating agricultural production consisted of three components namely: research, extension and Agro services which needed coordination and integration to give the best result. Specific recommendations were made to different states for each crop produced in their localities as was in the case of crops in Ogun state as established by IITA in 1976.

The agricultural development strategy of the second economic development plan laid the foundation for government's involvement in direct food production, by commencing the pilot phases of the agricultural Development Projects (ADPs) and the trial phases of the River Basin Development Programme. According to Cornelius, Kabir and Ojeleye, (2015) the ADPs were designed to improve the productivity of the farmers so as to make them the pilot for agricultural development in the country. The main reason for the establishment of this World Bank assisted agricultural projects was to stimulate the agricultural sector of country's economy through the development and provisions of input delivery system, low cost agricultural feeder roads, water supplies, soil conservation works effective extension services as well as providing credit and marketing services. Folorunsho, (2015) quoted Osuniogun and Oludimu (1986) by stressing that the main characteristics of the ADPs include:

a) Provision of seeds, fertilizers, chemicals and mechanical equipment either for sale on cash or credit basis at the farm service centres,
b) Construction of farm service centres;
c) Training of staff and farming in modern farming techniques, Construction and maintenance of rural roads, and
d) Provision of planning assistance and farm management.

Apart from, the performance of the ADPs in the area of food production, the ADPs activities in the infrastructural sector was commendable. As at December 1985, the ADPs had

constructed cumulatively 5,494km of feeder road and rehabilitated or maintained 3,537km road. They had constructed 601 farm service centres/stores. 71 development centres. 3,663 boreholes, 101 earthen dams, 686 wells, 908 staff housing units and 3,244 small motorized pumps for Fadama irrigation.

However, Metu, Kenechukwu and Olisa (2016) were of the view that despite the achievements of the ADPs, the projects had some major challenges. To them the World Bank Project Completion Reports highlighted the challenges to include such things as first; erratic financing regime, given the poor state of funding of existing projects, since 1981; second, is the incorrect technological package based on mono-cropping rather than prevailing mixed cropping, third, excessive reliance on expatriate management; fourth, short period set for phases of the project despite that most aspects of agricultural development are of a long-term nature, and so many others. But of all the challenges of the ADPs, lack of sufficient and timely release of funds remains their major obstacle. This probably accounted for their poor performance. This project cannot be jettisoned, but rather requires re-strategizing and re-planning to reposition the programme to achieve it envisaged goal, through deliberate commitment on the part of all players. Achieving food security through FADAMA project should be encouraged, hence our study of FADAMA projects in Cross River State.

Food security in Nigeria

Still underlying more conceptual issues is that of food security as Moses, (2017) posits that it is an access to sufficient food for normal and healthy living in the society. The World Bank (1986) perceives it from the same lens, as the access to sufficient food for an active healthy life by all people. However, FAO (1999 and 2010) cited in FAO, (2014) conceptualized food security in this manner, as the condition when all people have physical, social and economic access to sufficient, safe and nutritious food, capable to meet their dietary needs for an active and healthy life. This observation by FAO is quite comprehensive, because, it tends to touch on the

availability of food, people's access to food and their uses as well as the stability of all three components. Corroborating this assertion UNHLTF (2010) observed that this conceptualization includes the qualitative dimensions of safety and nutrition linking food security to people's energy, protein and nutrient needs for life, activity and growth.

To Barrett (2002) was quoted by Kolapo, Ologundudu, Adekunle and Ogunyemi, (2020) by stating that five key elements remains an analytically useful model of food security:

a. The physiological need of individuals for nutrients supplied by food must be useful in assessing food security at each units of analysis.
b. Recognition of behavioural patterns: The biological necessity of high frequency nutrient intake means that food security status may be time – varying, and present circumstances may be a function of both past experience and futuristic patterns.
c. Observing of the complementarities and trade-off between food and other variables, notably education and health.
d. Build upon an understanding and comprehension of uncertainty and risk. As the term security implies freedom from risk to biological lags inherent to food production and subjecting of food consumption decisions to temporarily uncertainty.
e. Grasping the irreversibilities and associated threshold effects that make the threat of an adverse nutritional state so turbulent.

The above analytical model of food security resonates with the 5As of food security or what is tagged the five components of food security as it relates to Availability (sufficient, supply); Accessibility (effective distribution), appropriateness (ecologically sustainable and safe), and Agency enables action). But there was a consensus among scholars that food security can be analyzed on the following levels:

a. Individual: All individuals regardless of age, religious affinity or location should have access to food at all times,

b. Household: The ability and willingness of every household to have enough resources to access appropriate food.

c. Community: The concerns underlying social, economic, and institutional factors within community that affects the quantity and quality of food and its affordability or price relative to the sufficiency of resources available at the disposal of the people to purchase it (Ahungwa, et al., 2013).

d. National: A country's food security has its bearing on such nation's defence, peace and security. The ability to meet her food needs is a guarantee to a peaceful nation. Self-sufficiency through local production secures a nation from external influences in the market economy.

e. Global: The ability of the global food production to meet the demand. On the other hand is the concept of food insecurity, which implies a limited ability to access, secure and consume adequate and nutritious food.

According to Kolapo, et al., (2020), food insecurity is the inability to obtain sufficient nutritious and personally acceptable food through normal food channels. More lucidly, Eminue, (2005) cited in Njoku, Fadiji and Ajah, (2022) opined that food insecurity indicates a form of vulnerability in the process of food entitlement and an expression of poverty. As food, security exists when all people, at all times have physical, social and economic access to sufficient, safe and nutritious food, which meets their dietary needs and food preferences for an active and healthy life. Food insecurity therefore, exists when people do not have adequate physical, social or economic access to food. As Otaha, (2013) averred that in chronic food insecurity, which arises from a lack of resources to produce or acquire food, the diet is persistently inadequate.

FADAMA programe as an agricultural project in Cross River State, Nigeria

The Fadama concept is an old tradition in Hausa, where flooded land is used for growing a variety of crops and small-scale irrigation. This land is suitable for irrigation, fishing and

providing feed and water for livestock. The project which was initiated in the early 1990s is now in its third phase, the first phase had only six participating states with only jigawa as a "core state" i.e. a state in which FADAMA I was fully implemented. Critical evaluation of the performance of FADAMA I clearly revealed that the full realization of project benefits was marred by some specific limitations at the level of project design and implementation, including the non –involvement of project clients in project planning; the project was restricted to crop production, neglecting downstream value chains, additional activities of marketing and processing, and ignoring of other FADAMA resources users.

FADAMA II: The second phase of the project known as FADAMA II was initiated to address some of the pitfalls of FADAMA I, which prevented the full realization of the potentials benefits of agricultural production activities. The pitfalls included poor development of rural infrastructure, storage, processing and marketing activities, low investment in irrigation technology, and poor organization of FADAMA farmers as well as lack of adequate techniques for greater productivity. FADAMA I and FADAMA II focused basically on provision of irrigation facilities for crop production, although non farmers were among FADAMA resource users, such as pastoralists, hunters, vulnerable and marginalized groups.

From the field surveys it can be concluded that the objective for communities to plan their own development agenda has been achieved. Women, the poor and disadvantaged groups have been given a voice through the project. The project is to pro –actively support women's organizations involved in project –related activities. The project has rehabilitated disabled men and women and trained them to be useful economic agents. The FADAMA II project is followed up by the FADAMA III

The FADAMA III is more like an agricultural diversification Programme, which is a paradigm shift under the FADMA project. It targets beneficiaries and the private economic units/small holders, who earn their living directly or indirectly from exploitation of natural

resources in a given area. Though, efforts have been made by successive government through policies and Programmes to boost food production, ensure food security and reduce rural poverty. Through Fadama III agricultural Programme, effort is on –going to establish Fadama microfinance Bank across all the state of the federation, after train – the trainers workshop to facilitate their efforts to expand the scope of their farming activities, educate farmers on when and where they can sell their produce after harvest (i.e. engage in business farming), provide them (farmer) and ensure that farmers contribute five percent of their interest for such Fadama micro –finance Bank. By so doing, the Fadama III project has supported ramping up of production of four prioritized staple crops. rice, cassava, sorghum and tomatoes across the states where projects are launched. Financing of such venture is drawn from the federal government and World Bank.

Statement of the problem

Before the oil boom of 1970s, Agriculture was the mainstay of the Nigerian economy. The country depended largely on it for her survival. Agricultural sector provided food for the ever-growing population, employment, raw materials for agro-based industries, capital for peasant farmers and foreign exchange earnings for the importation of capital goods. Ogbuagu (1995) observed that before independence in 1960, agricultural activities provided for over 60 percents of the country's GDP and in 1968, the sector still accounted for the highest foreign exchange earnings. But after Middle-East oil embargo of 1973, the oil sector took over the Nigerian economy and agriculture was relegated to the background.

According to Ndegwa, (2016) this has brought a dashed decline in the contribution of the agricultural sector to the country's GDP to 8.3% (1971-1971), the 3.0% (1981-1985), and witnessed a slight increase but still significantly low 4.6% (1986-1989). Since then, the overall contribution of agriculture to the nation's GDP has been on the decline. Agriculture remains stagnant, and food security remains an illusion while hunger and malnutrition are on the increase

in the country. The importance of the agricultural sector especially in the area of sustainable food supply and promotion of the national economy may have necessitated the initiation of various agricultural policies by successive regimes in Nigeria.

The Agricultural Development Project (ADP) was established in different parts of the country with the assistance of the World Bank in the mid-1970s. The programme was to provide extension services to farmers, provision of credit and marketing services and basic agricultural infrastructure to improve agricultural yields. River Basin Development Authorities (RBDA) were also established in 1976 to provide water related services to augument inadequate rainfalls for the purposes of improving yields. It is therefore necessary to state that the introduction of Fadama project was basically to encourage and enhance food security, in order to get access and affordable food to the rural door steps, how much has the objectives of the Fadama project been achieved? It is in the strength of this objective that this paper seeks to identify the role the Fadama project has played in the achievement of this objective of food security, poverty reduction and the improvement of the socioeconomic status of these participating farmers in Cross River State, Nigeria.

Objectives of the study

The specific objectives of the study are to:

a. Assess the extent to which FADAMA programme has contributed to the availability of food in Cross River State.
b. Assess the extent to which the FADAMA programme has contributed to the accessibility (effective distribution) of food in Cross River State.

Research questions

The following research questions were raised to guide this study:

a. What is the contribution of FADAMA programme to the availability of food in Cross River State?

b. How has the FADAMA programme contributed to food accessibility (effective distribution) of food supply in Cross River State?

Statement of hypotheses

The following null hypotheses were formulated to direct the study:

1. The FADAMA programme has not contributed significantly to the availability of food supply in Cross River State.
2. The FADAMA programme has not contributed significantly to the accessibility of food supply in Cross River State.

Research design and Methods

A research design is a plan or blueprint on how a research proceeds. According to Ndiyo (2005), the choice of a research design that will be suitable for a particular study is determined by many factors among which are the type of research, research hypotheses, scope of research and the sensitive nature of the research.

This study is basically a survey research. Hence, the survey inferential research design was adopted for the study. This permits the researcher to extract information from a targeted population through the use of questionnaire, observations or interview, and subjecting the data that is generated to statistical analysis for the purpose of drawing conclusions. Survey design is considered appropriate for the study because it is focused on the ideas, facts, opinion, perceptions and views of the people who have the wealth of experience on issues under investigation. Also, it is more economical, in terms of cost and time effectiveness. The design permits the drawing of inferential conclusion on the population based on sample evidence.

Area of the study

The study areas cover Bekwarra local government area in the northern senatorial district, Yakurr local government area in the central senatorial district and Akpabuyo local government

representing the southern senatorial district of Cross River State. Data was also sourced from the Ministry of Agricultures, FADAMA office, Calabar, Cross River State.

Population of the study

The term population has been defined by Odo (1992) cited in Muhammad, Abubakar and Balarabe, (2018) as the entire number of people, objectives, events and things that all have one or more characteristics of interest to a study". The population of this study is 695,622 derived from the three (3) Senatorial Districts (Zone) of Cross River State. The actual population of this study comprised of farmers, pastoral farmers, fishermen, traders on food stuff, agricultural extension workers, hunters, and vegetable garden farmers among others. Staffs of Ministry of Agriculture including desk officers of the various units including the Fadama project were also sampled from these local government area offices to be part of the respondents.

Sampling technique

In this study, the stratified random and purposive sampling technique was adopted in the selection of sample for the study. The technique allows the researcher to draw respondents based on three strata according to the three Senatorial Districts (Zone) of Cross River State, representing Northern, Central and Southern Senatorial Districts. On this basis, one Local government from each Senatorial District was chosen to form a strata. That is, one Local Government in Northern Senatorial District was selected to form strata (A), one Local Government area in Central Senatorial was selected to form strata. (B), while strata (C) were made up of one Local government area from Southern Senatorial District of the State. These Local Government Areas were randomly selected across the three Senatorial Districts by the researchers. The researcher thus adopted the purposive sampling technique to select the respondents for the study. Purposive sampling technique is used when the researcher uses his judgment to select a group of respondents based on the defined characteristics of the population.

Thus, five hundred respondents were purposively selected from each of the local government areas in each senatorial district.

Sample size

This study adopted a non-probability sampling technique to determine the sample size for this study. This was done through equal allocation of 500 targeted respondents to each Local Government Areas that were selected for this study. Thus, a total of one thousand five hundred respondents were used for the study.

Methods of data collection

The researcher made use of two methods of data collection in accomplishing this study namely: Primary and Secondary Data.

The primary sources of data used for the analysis of the study are those collected from the respondents through the designed questionnaire and interview. The questionnaires were administered by the researchers with the help of farmer's cooperative society's secretaries and chairman within the various political wards of the local government areas used for the study. While oral interview was conducted on some senior staff in FADAMA Offices in the Ministry of Agriculture both at the State and Local Government levels as well as the beneficiaries of the FADAMA programme. This was done to elicit further information from them on the issues under investigation.

Secondary sources of data

The secondary data for this study were collected from already written books both published and unpublished that were found to be relevant for this study. These include: textbooks, journals, magazines, government documents, internet, conference materials, seminar papers, and pasts research work by students and research institution.

Methods of Data Analysis

The statistical techniques used for data computations include simple percentage, descriptive analysis and t-test (one sample mean or population t-test). The t-test (also known as population t-test) was used to test the hypotheses with only one variable. Analysis of relevant data was done with the use of Statistical Package for Social Sciences (SPSS, Version 23.0)

Result and Discussion of Findings

Hypothesis one

The contribution of FADAMA programme to availability of food supply in Cross River State is not significantly high. There is only one variable in this hypothesis, which is the contribution of FADAMA programme to availability (sufficient) of food supply in Cross River State. The t-test or the population t-test was employed to test this hypothesis. This involves comparing the mean obtained from the study sample with a hypothesized or reference mean. This reference mean score was obtained by multiplying the average of the scores assigned to the four response categories for each of the items on the questionnaire by the number of items used to measure the contribution of FADAMA programme to availability of food supply in Cross River State (which was 9). Thus, the reference mean score = (4+3+2+1) X 9 /4=22.5

Testing hypothesis 1 involved comparing the sample mean on the contribution of FADAMA programme to availability of food supply in Cross River State with the reference mean score of 22.5. The results of the analyses are presented in Table 1. The results of analysis presented in Table 1 have shown the mean and standard deviation of the sample of the contribution of FADAMA programme to availability (sufficient) of food supply in Cross River State as focus in this study. The comparisons of the sample mean with the reference mean score of 22.5 yielded t-values of 70.07.

Table 1: Population t-test analysis of the contribution of FADAMA programme to availability of food supply in Cross River State is significantly high (N=1500)

Variables	X	SD	Df	t-value	p-val
Sample mean	35.09	5.89			
			1499	70.07*	.000
Hypothesized mean	22.5	0.00			

* Significant at .05 level, critical t = 1.96, df = 1498.

The calculated absolute t-values are each higher than the critical t-value of 1.96 at .05 level of significant with 1499 degrees of freedom. With this result, the null hypothesis is rejected. This implies that the contribution of FADAMA programme to availability (sufficient) of food supply in Cross River State is significantly high.

Hypothesis two

The contribution of FADAMA programme to accessibility and affordability of food distribution in Cross River State is not significantly high. There is only one variable in this hypothesis, which is the contribution of FADAMA programme to accessible and affordable food distribution in Cross River State. T-test was employed to test this hypothesis. This involves comparing the mean obtained from the study sample with a hypothesized or reference mean. This reference mean score was obtained by multiplying the average of the scores assigned to the four response categories of the items on the questionnaire by the number of items used to measure the contribution of FADAMA programme to accessible and affordable food distribution in Cross River State (which was 8).

Thus, the Reference mean score = (4+3+2+1) X 8/ 4= 20.00

Testing hypothesis 2 involved comparing the sample mean on the contribution of FADAMA programme to accessibility and affordability of food distribution in Cross River State with the reference mean score of 20.00. The results of the analysis is presented on Table 2

Table 2: Population t-test analysis of whether assessment of the contribution of FADAMA programme to accessible and affordable food distribution in Cross River State is significantly high (N=1500)

Variables	$\bar{X}$	SD	Df	t-value	p-val
Sample mean	30.76	4.89			
			1499	55.46*	.000
Hypothesized mean	20.00	0.00			

* Significant at .05 level, critical t = 1.96, df = 1499

The results of analysis presented in Table 2 have shown the mean and standard deviation of the sample on the contribution of FADAMA programme to accessible and affordable food distribution in Cross River State. The comparison of the sample mean with the reference mean score of 20.00 yielded t-value of 55.46. The calculated absolute t-value is higher than the critical t-value of 1.96 at .05 level of significant with 1499 degrees of freedom. With these results, the null hypothesis is rejected. This implies that the contribution of FADAMA programme to accessible and affordable food distribution in Cross River State is significantly high.

Discussion of findings

The result of data analyzed to test the extent to which the Fadama project has contributed to food security n cross river state yielded a t-value of 70.07, with the compared mean of 22.5 and a critical t-value of 1.96 at 1499 degree of freedom. The calculated t-value is higher than the critical table value of 1.96, meaning the contribution of the Fadama project to food security in cross river state is significantly higher. Authors like Njoku, Fadiji and Ajah, (2022) found a similar result in their study when they discovered that despite the shortcomings in the modus operandi of the Fadama project, there was a significantly higher contribution of the projct to food security in their study area. The implication of this result is that the project was well envisaged, but they were some technical glitches which affected the overall success of the project, principal

among these glitches were the delay in releasing of funds to participating members and beneficiaries to enable them implement the project components for which they were funded. These delay also affected the cropping seasons, as most funds come when it has almost become late for the growing of certain crops.

Most of the farmers however complained during the interview session that the program when it started did not give room or attention to mixed cropping, but only looked at monocropping as the focus of the program, but in later phases, most of the programmes now captured the different segments of the farming systems including pastoral, animal husbandry, vegetable growing among others. The result of the analysis that tested hypothesis two was also significant; the implication is that the Fadama programme contributed a great deal to the accessibility and affordability of food in the right quantity, quality and nutrition value to the people. Since the hypothesis looked at the contribution of FADAMA programme to the accessibility and affordability of food distribution in Cross River State.

The result is significantly high, meaning that the Fadama programme has contributed highly to the accessibility and affordability of food distribution in Cross River State. This result has also been confirmed by the finding of Agbo, Rousseliere and Julien, (2014) who posited that one major characteristics of food security is not just its availability, but its accessibility and affordability in its distribution and supply to everyone irrespective of race, age, religion or income status. Food security can only be guaranteed if everyone has access, can afford and the distribution is evenly done to reach everyone. Then and only then, can food security be guaranteed.

Kolapo, Ologundudu, Adekunle and Ogunyemi, (2020) found during their study of the impact Assessment of Fadama III Group Participation on Food Security Status of Rural Households in South West, Nigeria that food security has been guaranteed through the implementation of the Fadama program, this is also because this has not only provided food, but

also has helped to remove some people from poverty as they have a new means of livelihood through the cultivation of improved crop and animal varieties , which a serious deviation of the program from the original traditional low producing and longer production time to those improved varieties that grow within shorter periods and withstand harsh environmental conditions, including erratic rainfall and harsh climate conditions.

This same position had earlier been canvassed by authors like Osondu, Ezeh, Emerole and Anyiro, (2014); Omotesho, Ogunlade, Lawal and Kehinde, (2016); Sanusi, (2019), who in their respective studies found a significant relationship between the Fadama project and food security from their different points of views, the project did not just provide food for the populace, but has also engaged so many people in income generating ventures like there is a serious boom in their agricultural productivities, with enough food to make the beneficiaries including the community people have food to meet their daily dietary needs.

Evidence also suggested that the provision of funds to farmers through programmes such as FADAMA has significant impact on poverty reduction and enhancement of improved standard of living. The study thus shows that there is a positive impact of funds provision at reduction and improvement of lives and living conditions of farmers particularly those residents in the rural areas. Albeit, findings from the conducted survey show that benefits of agricultural programmes such as FADAMA have not trickled down to stimulating living conditions of farmers due to inadequate funds and failure of government, particularly states government, to release funds for such programmes as encapsulated in the policy document of some of these programmes, there is the urgent need for the deregulation of the flow channel through with funds are to are released to the farmers to carry out the projects on time..

Also, empirical findings from the study shows the interconnection and significance of agricultural programmes such as FADAMA to ensuring abundance of agricultural produce that enhance food security for humans. However, despite the importance and significance of

agricultural programmes such as FADAMA, there are growing concerns about the cost of living especially for urban farmers whose incomes are insufficient at meeting basic needs.

Conclusion

There has been a plethora of agricultural policies in Nigeria, one after another, this is because most of the programmes designed and implemented could not provide the needed result as enunciated or envisioned by the programme designers. Several governments and in conjunction with world's multilateral organizations have over the years formulated different agricultural policies and programmes in an effort to ensure creating sufficient food production that create necessary conditions for the achievement and maintenance of a high possible rate of improvement in the living standards and conditions of people. Some of these agricultural development strategic plans requires active and whole government involvement in direct food production and subsequently stimulates agricultural sector of the economy needed to enhance growth and development.

Unfortunately, the finding from this study indicates that government full involvement in the implementation of agricultural programmes is inadequate, particularly the provision of funds, tools and lands that is essential to achieving food security. From the result of this study, it has been established that the Fadama project has contributed a great deal to food security and food distribution, especially in terms of accessibility and affordability in the distribution of food to the populace. The project did not only stopped at the provision or production of food, but also went further to address some aspect of the rural poverty by engaging some rural poor in agricultural ventures, which could put food on their table and also put some money in their pockets to reduce poverty and improve their socioeconomic status.

Recommendations for policy directions

Based on the study's data analysis and empirical findings, we recommend thus;

i. Government and relevant authorities should through agricultural programmes such as FADAMA ensure adequate provision of financial incentives to farmers that are sufficient to boost food production and geared towards improving rural farmers' incomes in the upward direction, which will consequently ensure the reduction in rural poverty.

ii. Government should ensure holistic and sincere policy execution and implementation of planned and formulated agricultural programmes that stimulates and boost food production and consequently ensuring improved food security.

iii. There is the urgent need for the involvement and participation of all stakeholders, especially the beneficiaries and farmers, in the design, formulation and implementation of agricultural policies and programmes that will promote food security and reduce farmer's poverty status.

iv. Adequate monitoring and evaluations are required for agricultural programmes and policies with the objective of enhancing future agricultural programmes and policies that guarantee food security.

v. Lastly, government should ensure provision of lands and other agricultural tools that can assist farmers in growing of agricultural products in a bid to ensure food security. Also, ensure there is a reform on land and property rights in a bid to achieve and ensure adequate and sufficient food production needed to ensure food security.

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