

## **Assessment of Problems Associated to Fadama Crop Farming: An Experience of the Fadama II Beneficiary Crop Farmers in Adamawa State, Nigeria.**

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**Abstract:** This study assesses the problems associated with Fadama II crop farming in Adamawa state. Data were collected on a sample of 160 farmers and were analyzed using descriptive statistics. The findings from the study showed that Inadequate and high cost of fertilizer was reported to be very severe and serious problem affecting the crop farmers of Fadama, and this accounted for about 56.25 percent of the respondents, while 13.75 percent of the respondents were severely affected. However, only 30 percent of the farmers considered the problem as not severe, it further revealed that, about 57 percent of the respondents reported that high cost of agrochemicals was not a severe problem, while 16.88 percent were severely affected by the problem. The respondents that were very severely affected by this problem constituted 26.25 percent. On the use of improved seeds, the study shows that, majority of the respondents about 50 percent did not consider non availability of improved seeds as a severe problem, while 21.25 percent considered the non-availability of improved seeds as a severe problem. However, 28.75 percent of the respondents regarded the non-availability of improved seeds as a very severe problem. Cost of labour for production as revealed from the study shows that, about 45 percent of the respondents looked at high cost of labour as not a severe problem, while 30.63 percent considered it to be a severe problem. Consequently, about 24.39 percent reported it as a very severe problem. The study concludes that, several problems associate Fadama crop farming in the study area. The study identified problems associated with the crop production by the Fadama II beneficiaries such as inadequate and high cost of fertilizer, high cost of agrochemicals (herbicides/pesticides), non-availability of improved seeds, clashes with pastoralist, high cost of paid labour, high cost of water pumps and inadequate supply of water during some months. It therefore recommends that, Government should take renewed interest in dry season production by strengthening support and public-private partnership so as to boost production and win niche markets with a challenge of making better markets for farmers, while at the same time ensuring that production technologies adopted is more environmentally sustainable. Government should establish where feasible micro irrigation scheme that will ensure all year round crop production and livestock rearing. This will not only increase crop production but reduce the rate of conflict in the use of communal natural resource.

**Key Words:** Assessment, Problems, Fadama II, Food Crop, Farming, Beneficiary.

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### **I. Introduction**

One of the major problems confronting Nigeria today is how to improve the quality of life in the rural areas and reduce the level of poverty thereby increasing income, employment generation and consequently improved social and economic livelihood. In spite of the dominant role of petroleum sector as the major foreign exchange earner, agriculture remains the main stay of the Nigerian economy Adamu, *et al.* (2013). Yet, agricultural production techniques have remained rudimentary despite many years of works on technology generation and transfer by the State and Federal Government of Nigeria, Simonyan, *et al.* (2013) and its agricultural sector has ceased to be an important contributor to foreign exchange earnings; even its contribution to employment has declined, Balogun *et al.* (2011). Agriculture especially, Small-scale irrigation "Fadama" plays a key role in the economics of Nigeria as a basic source of food, income, and employment, especially for women in the "slack" period of rain-fed agriculture Ogunjimi, *et al.* (2002).

"Fadama" a phenomenon adopted by the World Bank, is a local "Hausa language" word referring to low-lying swampy areas consisting of alluvial deposits and containing extensive exploitable aquifers (Adesoji *et al.* 2006; Ahmed, 2006); Girei *et al.* (2013). Qureshi (1989) defined fadama as alluvial lowlands formed by erosional and depositional actions of rivers and streams which possess fine textured and less acidic soils that are rich in organic matter. Anaso (1994) viewed fadama as having a broad embracing seasonally flooded or flooded lying land which can be cultivated under residual moisture condition or under irrigation due to available ground water during the dry season.

The paradigm shift under the Second National Fadama Development Project (NFDP-II) is one of the major instruments for achieving the Government's poverty reduction objective in the rural areas of Nigeria Adamuet *al*, (2013). According to Umar *et al*,(2012)Fadama II project, is considered the largest agricultural project in Nigeria, and was established to increase income and access to food for the poor, by supporting small-scale, providing appropriate and sustainable processing businesses that are flexible, by requiring little investment capital, and by operating with less sophisticated or less expensive equipment. Its beneficiaries are the private economic agents who achieve their livelihood directly or indirectly from the exploitation of the natural resources in a given Fadama area.

The project was established by the Federal Government of Nigeria as a response to the threat posed by poverty especially in the rural Nigeria who is the majority food crop producers in the country. It focused on poverty reduction, private sector participation and participatory approach to development. In other words, supports activities and services other than production, Umar *et al*, (2012). The project incorporated a shift in development strategy from public sector domination to a Community Driven Development (CDD) approach Msuya, (2003). The main thrust of Fadama II project is to sustainably increase the incomes of all inclusive Fadama users namely: farmers, pastoralists, fisher folks, hunters, gatherers and service providers, through empowering communities to take charge of their own development agenda and by reducing conflicts among users, Gireiet *al*, (2013). Accordingly, conflicts among Fadama users especially between farmers and pastoralists would have been reduced by at least 50% compared to the baseline, SFDO, (2006).

The design and implementation of Fadama II project is participatory whereby potential beneficiary groups are assisted by facilitators to collectively identify and prioritize their development and production needs. The design strategies for meeting the needs were then summarized in the Local Development Plan (LDP) (Audu, 2006). A typical LDP comprises of list of priority public infrastructure sub-projects that are technically and economically feasible, environmentally sustainable, and consistent with existing development plans of local and state government authorities that will contribute towards raising the production and incomes of all fadama user groups. The project set targets to achieve the following outcomes at the end of its six year period:

- (i) 50% of male and female fadama resource users who benefit from the project supported activities should increase their average real income by at least 20% compared to the baseline.
- (ii) At least 60% of the FCAs should successfully implement their LDPs and other project supported activities.
- (iii) Conflicts among Fadama users should be reduced by at least 50% compared to the baseline.

The project will empower the Fadama Community Association (FCAs) with the resource and the needed training and technical assistance support to properly managed and control these resources for their own development. FCAs will take charge of their own destiny through real empowerment. In addition, it will adapt a socially inclusive and participatory process whereby all Fadama users will collectively identify their development Priorities and agree on their investment activities which would be outlined in a Community Development Plan (CDP)(Second National Fadama Development Project, NFDP –II, (2003).

The potential benefits of Fadama farming as enumerated by Abdullahi and Philips (1990) include,full utilization of resources, stability of output and maximization of monetary returns. The potentials of Fadama lands and the threat posed by poverty and demand for food supply have made the federal government of Nigeria with the assistance of the World Bank and other donor agencies such as the African Development Bank to put in place the National Fadama Development Project enumerate the situation. This study therefore is to assess the problems associated with fadama crop farmer among the fadama II beneficiary crop farmers in Adamawa state, Nigeria.

In view of the above, this study becomes imperative to answer some pertinent questions:

- i. What were the productions constraints associated with food crop production in the study area?
- ii. Was there adequate increase in the output of the crop farmers in the study area?

### **Hypotheses of the Study**

Ho: There was no relationship between problems and productivity of fadama II participants in food crop production in the study area.

## **II. Methodology**

### **The study Area**

Adamawa State is located in the North Eastern part of Nigeria and lies between latitude 7<sup>0</sup> and 11<sup>0</sup>N of the equator and longitude 11<sup>0</sup> and 14<sup>0</sup>E of the Greenwich meridian. It shares common boundary with Taraba State in the south and west, Gombe State in the northwest and Borno State in the north. The state has an international boundary with the Cameroun republic along its eastern border.

Adamawa State covers a land area of about 38,741 km<sup>2</sup> with a population of 3.17 million people NPC, (2006). Out of this estimated land area about 226,040 ha is under cultivation with about 400 ha under irrigation

(Adamawa ADP, 1996). The State has a tropical climate with maximum temperature reaching to as high as 40°C between December and January (Adebayo, 1999). The mean annual rainfall pattern shows that the amount range from 700 mm in the northern-west part of the state to 1600 mm in the southern part of the state. Generally, mean annual rainfall is less than 1000 mm in the central and north-western part of the state including Song, Gombi, Shelleng, Guyuk, Numan, Demsa, Yola and parts of Fufore local government area (Adebayo, 1999). The major vegetation formations in the state are the southern guinea savannah, northern guinea savannah and the sudan savannah. Within each formation is an interspersion of thickets, tree savannah, open grass savannah and fringing forests in the river valleys.

#### **Nature and Sources of Data**

Primary data was used for the study. These were collected through the administration of structured questionnaires to randomly selected Fadama crop farmers. The data collected included respondents' personal background, production inputs, and cost of production, income and expenditure, accessibility to basic amenities among others. Data collection was facilitated with the aid of trained staff selected from the four (4) zones of the state.

#### **Sampling Procedure and Sample Size**

Multistage stratified random sampling and purposive sampling techniques were used in the selection of respondents. In the first stage, the state was stratified into four according to the Adamawa Agricultural Development Programme (ADADP) zones. In each of the zone, participating local government areas in fadama crop production was purposively selected in proportion to the existing number of Fadama User Associations (FUA). In line with this, four local government areas in Zone II and one each in Zones I, III and IV were selected. In all, a total of seven local government areas were sampled. One hundred and eighty (180) food crop farmers were randomly selected in the FUA groups in the seven selected local government areas in proportion to their number in each local government. The membership of each FUA ranges from 10 – 30.

#### **Analytical tools**

Descriptive statistics were employed in the analysis of data. Descriptive statistics involved the use of means, frequency distributions and percentages were employed in analyzing the socioeconomic characteristics of Fadama crop farmers, and the constraints faced by the farmers in crop production activities.

### **III. Results And Discussion**

#### **Problem Associated with Fadama Farming.**

##### **Inadequate and high cost of fertilizer**

The result from table 1.1 below on distribution of respondent's base on problems associated to crop production reveals that, Inadequate and high cost of fertilizer was reported to be very severe and serious problem affecting the crop farmers of Fadama, and this accounted for about 56.25 percent of the respondents, while 13.75 percent of the respondents were severely affected. However, only 30 percent of the farmers considered the problem as not severe. This result is in line with the works of Nagy and Edun (2002) who reported that poor farmers do not benefit from fertilizer subsidies provided by the Nigerian Government.

##### **High cost of agrochemicals(Herbicides/pesticides)**

The table 1.1 further revealed that, about 57 percent of the respondents reported that high cost of agrochemicals was not a severe problem, while 16.88 percent were severely affected by the problem. The respondents that were very severely affected by this problem constituted 26.25 percent. The availability and accessibility of inputs for production at affordable cost at the right time by the government improves profitability and reduces risk associated with agricultural production thereby ensuring higher participation in the Fadama crop production activities Dorward, (2009).

##### **Inadequate improved seeds**

Seed is an important input in agricultural production, and its availability, affordability and use helps in raising agricultural production through increasing yield per hectare. The distribution in Table 1.1 further shows that majority of the respondents about 50 percent did not consider non availability of improved seeds as a severe problem, while 21.25 percent considered the non-availability of improved seeds as a severe problem. However, 28.75 percent of the respondents regarded the non-availability of improved seeds as a very severe problem. World Development Report (WDR) (2008) reported that, with credit and extension services, input services were supposed to help farmers improve agricultural production.

**Table 1.1: Distribution of respondents based on severity of problems Associated with Fadama Food Crop Production**

Problems	Not severe		Severe		Very severe	
	Freq	Percent	Freq	Percent	Freq	Percent
Inadequate and high cost of fertilizer	48	30.00	22	13.75	90	56.25
High cost of agrochemicals (Herbicides/pesticides)	91	56.87	27	16.88	42	26.25
Non availability of improved seeds	80	50.00	34	21.25	46	28.75
Clashes with pastoralist	116	72.50	16	10.00	28	17.50
High cost of paid labour	72	45.00	49	30.63	39	24.39
High cost of water pumps	123	76.88	16	10.00	21	13.12
Inadequate supply of water during some months	138	86.25	14	8.75	8	5.00

Source: Field survey, 2011.

### **Clashes with pastoralist**

Clashes between farmers and herdsmen for available natural resources, particularly grazing land are re-occurring problems especially in Northern Nigeria. This has resulted in the loss of lives and properties accounting to millions of Nigerian naira. The result in table 1.1 further revealed that, clashes with pastoralists for available resources were not a major problem for the majority constituting 72.50 percent of the respondents. Only 10 percent and 17.50 percent were severely and very severe affected by the problem respectively. Shettima and Tar (2008) found out that the landlessness of the pastoralist and the shrinking hectares of the available grazing land due to human activities such as construction of houses, roads, drainages and other associated applications other than serving as grazing land. These are some of the causes of clashes between the farmers and other users. In this study, it shows the sites used by farmers might not be along cattle routes as to warrant undue clashes. Also, the study reveals that, adequate sensitization and capacity building to the stakeholders involved on conflict management and resolution and its effect on the environment subsequently reduces the occurrence of the problem in the related Fadama lands.

### **High cost of paid labour**

High cost of paid labour as shown in Table 1.1 was a problem that affected food crop production among beneficiaries of Fadama II facility in the study area. The distribution shows that 45 percent of the respondents looked at high cost of labour as not a severe problem, while 30.63 percent considered it to be a severe problem. Consequently, about 24.39 percent reported it as a very severe problem.

### **High cost of water pumps for irrigation**

Fadama crop production is usually undertaken in the dry season when rainfall has ceased. The flood plains where farming activities are carried out need supplementary irrigation. Many farmers own water pumps, and farmers who do not have any, tend to hire. The distribution as shown in Table 1.1 reveals that, high cost of water pumps was not a severe problem as reported by about 77 percent of the respondents. Only 10 percent of the respondents indicated the problem as being severe, while 13.12 percent expressed the problem as being very severe problem. Hence, the non-severity of the problem was associated with the availability of several water bodies supported by the Fadama II project like canals, water ways and even motorized boreholes in other places across the state to enhance free flow of water into the irrigated farm lands which made few farmers to utilize water pumps in their production. Resulting to low water cost.

### **Inadequate supply of water during some months of the year**

The presence of many flood plains has made Fadama dry season crop production in the State easier. Table 1.1 shows that inadequate supply of water during some months in the production period was not a serious problem as indicated by majority about 86.25 percent of the respondents, while 8.75 percent and 5 percent reported severe and very severe respectively. For areas that indicated the severity of the problem across the state, usually for months when water level is too low to allow for a free flow of water through the canals and water ways, the farmers fall back on the supported motorized boreholes and tube wells from Fadama I project to supplement the water needed for farming.

## **IV. Conclusions**

The study concludes that, several problems associate Fadama crop farming in the study area. The study identified problems associated with the crop production by the Fadama II beneficiaries such as inadequate and high cost of fertilizer, high cost of agrochemicals (herbicides/pesticides), non-availability of improved seeds, clashes with pastoralist, high cost of paid labour, high cost of water pumps and inadequate supply of water during some months. Food security can only be sustainable when food is available all year round through the dry season production of agricultural produce, the reduction in post-harvest losses and creation of value adding investment would also be of great importance. On the basis of the above, the study recommends; Government and other donor agencies should intensify advisory services activities on effective resource allocation, utilization and other ways of increasing farmers' beneficiary income. Government should take renewed interest in dry season production by strengthening support and public-private partnership so as to boost production and win niche markets with a challenge of making better markets for farmers, while at the same time ensuring that production technologies adopted is more environmentally sustainable. Government should establish where feasible micro irrigation scheme that will ensure all year round crop production and livestock rearing. This will not only increase crop production but reduce the rate of conflict in the use of communal natural resource.

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