



## FACTORS INFLUENCING BENEFICIARIES ACCESS TO FADAMA NG-CARES PROGRAMME IN WESTERN ZONE OF BAUCHI STATE, NIGERIA

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### ABSTRACT

The study examined the effects of the Fadama NG-CARES programme on the livelihoods of beneficiaries in the Western Agricultural Zone of Bauchi State, Nigeria. A multistage sampling procedure was used to select 270 respondents from the study area. Data were collected through the administration of structured questionnaires and analyzed using descriptive statistics and logit regression. The findings revealed that majority (60%) of the respondents were male and 91.5% were married, with majority (81.5%) attended secondary or tertiary education. Farming constituted the primary occupation (99.3%) of the respondents. The leading sources of information on the programme were fellow farmers (59.6%), radio (56.3%), community leaders (55.2%), and Fadama desk officers (54.8%). The result further showed that age and land acquisition method negatively and significantly ( $P < 0.05$ ) influenced respondents' access to the fadama NG-care programme, while secondary occupation and market access positively and significantly ( $P < 0.05$ ) influenced respondents' access to the programme. The study concluded that age, secondary occupation, access to markets and land acquisition were the factors influencing beneficiaries' access to NG-cares programme. It is recommended that policy makers strengthen land tenure security, promote youth engagement, expand market linkages, and improve gender inclusion to maximize the impact and sustainability of the Fadama NG-CARES programme.

**Keywords:** *Fadama*, NG-CARES, Livelihood, Beneficiaries, Agricultural, Resilience.

### INTRODUCTION

Agriculture plays a fundamental role in Nigeria's economy, particularly in rural communities where it remains the primary source of livelihood for the majority of the population. However, this sector has continued to face structural challenges such as low productivity, inadequate access to modern farming inputs, poor infrastructure, and the growing threat of climate change. These challenges were exacerbated by the COVID-19 pandemic, which disrupted food supply chains, lowered farm incomes, and heightened food insecurity nationwide (Food and Agriculture Organization [FAO], 2021; World Bank, 2021; Nigerian Bureau of Statistics [NBS], 2023). To mitigate these impacts and stimulate recovery, the Nigerian government in collaboration with the World Bank initiated the Nigeria COVID-19 Action Recovery and Economic Stimulus (NG-CARES) programme. A core agricultural component of this initiative is the Fadama NG-CARES programme, which focuses on increasing food security, improving productivity, and enhancing livelihoods in rural communities (Federal Ministry of Agriculture and Rural Development [FMARD], 2022; World Bank, 2021). Fadama NG-CARES programme operates under Result Area 2, which seeks to ensure food security and the safe functioning of food supply chains for poor and vulnerable households through four Disbursement Linked Indicators (DLIs). DLI 2.1 (Agricultural Inputs and Services) provides subsidized agricultural inputs such as fertilizers, seeds, and agrochemicals, along with mechanization services and agricultural extension support. These are meant to enhance productivity and build resilience in smallholder farmers (Fadama NG-CARES, 2024; FMARD, 2022). DLI 2.2 (Labour-Intensive Agricultural Infrastructure) focuses on the rehabilitation of small-scale irrigation systems, rural feeder roads, and erosion control structures, which are vital for improving market access, reducing post-harvest losses, and increasing farm productivity (World Bank, 2021; FAO, 2021).



Agriculture remains a critical sector for Nigeria's economy, particularly in rural areas where a significant proportion of the population relies on farming for their livelihoods. Despite its importance, the sector is plagued by persistent challenges such as inadequate access to modern farming techniques, poor infrastructure, limited credit facilities, and climate-related risks, all of which stifle productivity and income generation. These issues are further compounded by the socioeconomic shocks induced by the COVID-19 pandemic, which disrupted supply chains, restricted market access, and exacerbated food insecurity among smallholder farmers (National Bureau of Statistics [NBS], 2022). Since the commencement of the NG-CARES programme which is a new initiative of the Federal Government of Nigeria to support farmers in Bauchi State Nigeria, there is dearth of information on contributions of the intervention to the livelihoods of the beneficiaries. Also, it is essential to carry out a study on the contributions of NG-CARES programme to livelihoods of Beneficiaries which would favourably influence government policy towards beneficiaries and other actors. This study seeks to bridge these gaps by evaluating the effects of the Fadama NG-CARES programme on the livelihoods of beneficiaries in the Western Zone of Bauchi State. The findings will not only contribute to understanding the programme's outcomes but will also inform policy decisions and strategies for enhancing agricultural resilience and productivity in Nigeria.

The aim of this study is to evaluate the effect of the Fadama NG-CARES programme on the livelihoods of beneficiaries in the Western Zone of Bauchi State. To achieve this overarching goal, the following specific objectives have been formulated to;

- i. describe the socio-economic characteristics of the beneficiaries of Fadama NG-CARES programme;
- ii. examine the source of information of Fadama NG-CARES among beneficiaries;
- iii. determine the socio-economic factors influencing beneficiary access to Fadama NG-CARES interventions; and

## **METHODOLOGY**

### **The Study Area**

The study was carried out in Western Agricultural Zone of Bauchi State, Nigeria. Bauchi State comprises of three (3) Agricultural Zones namely: Northern Zone (9 LGAs) Central Zone (4 LGAs) and Western Zone (7 LGAs). The Western Zone has seven (7) LGAs, namely; Bauchi, Dass, Tafawa Balewa, Toro, Kirfi, Bogoro and Alkaleri Local Government Areas. Western Agricultural Zone of Bauchi State is located between latitudes 9°30' and 10°48' North of the equator, and between longitudes 8°45' and 15'. East of the Greenwich meridian. The area has a total land mass of 49,259 square kilometres. Bauchi State is bordered in a clockwise direction by Yobe, Gombe, Taraba, Plateau, Kaduna, Kano and Jigawa States. The study area has projected population of 8,308,800 million people (NPC, 2022).

The climate of the study area is characterized by long dry season (October-May) with a short rainy season from May-October (Bauchi State Ministry of Land and Survey, 1999). The study area falls within the Sudan Savannah vegetation zone with an annual rainfall of 1300 mm per annum, which commences in April and ends in October. The State has an average temperature of 28.3<sup>0C</sup>; the warmest months are February to April, where temperatures exceed 45<sup>0C</sup>. During the harmattan period, a dry cold dusty wind is experienced between November to February with a minimum temperature of about 19<sup>0C</sup>. The vegetation of the study area falls within the Sudan Savannah agro-ecological zone which is characterized by scattered trees that have scaly barks and most of which are thorny in nature. The soil of the study area is predominantly sandy to sandy-loam with low fertility level particularly poor in primary nutrient like nitrogen, phosphorus and potassium. The major occupations of the people include farming, livestock rearing and trading. The major tribes of the area are Hausa, Fulani, Jarawa, Sayawa, Terawa and minor tribes such as Yoruba, Igbo, Nupe and other Nigerian tribes are found. Agricultural production counts for greater percentage of the total employment in the study area and as a result, over eighty percent (80%) of the inhabitants of the state practiced one form of agriculture or the other in which different crops and livestock are produced.



### Sampling Procedure and Sample Size

Multi-stage sampling procedure was used for the selection of the respondents. In the first stage, Western Agricultural Zone was purposively selected because of its potentials for agricultural production and large number of beneficiaries. In the second stage, three (3) LGAs were purposively selected due to large number of beneficiaries from the zone which include; Bauchi, Dass and Toro. In the third stage, three (3) Fadama Community Associations (FCAs)/Groups were randomly selected each from the selected LGAs, making a total of 9 FCAs and 27 Groups. In the fourth stage, 10 farmers were randomly selected from each of the selected groups making a total of 270 farmers drawn for the study.

**Table 1: Sampling Procedure and Sample Size**

LGAs	FCAs	No. of groups selected	Sample size
<b>Bauchi</b>	Birshi 'A'	3	30
	Hardo 'B'	3	30
	Tirwun 'A'	3	30
<b>Dass</b>	Bundili	3	30
	Dott	3	30
	Unguwan Dawaki Wandu	3	30
<b>Toro</b>	Jama'are	3	30
	Lame	3	30
	Ribina	3	30
<b>Total</b>			<b>270</b>

Source: Authors' computation, 2025

### Methods of Data Collection

Primary data was obtained from the respondents through the administration of structured questionnaires in the study area. Data were collected on socioeconomic characteristics, sources of information and factors influencing respondents' access to NG-cares programme.

### Data Analysis

Data for the study were analyzed using both descriptive and inferential statistics. Descriptive statistics such as frequency table and percentages were used in achieving objectives i and ii. On the other hand, objective ii was achieved using logit regression.

### Model specification

#### Logit Regression Model

In analyzing the factors influencing accessibility among respondents. This model used for estimating the probability that an event occurs having a dichotomous dependent variable; 1 for access and 0 for non-access. The logistic regression model used is expressed as:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + U \quad \dots (1)$$

Where;

Y= Accessibility (1=access, 0=No access)

X<sub>1</sub>= Age of extension agents (years)

X<sub>2</sub> = Sex (male=1, female=2)

X<sub>3</sub> = Marital Status (married =1, Otherwise=0)

X<sub>4</sub>= Household size (Number)

X<sub>5</sub>= Educational level of the farmers (Qur'anic=1, Primary=2, Secondary=3, Tertiary=4, Adult literacy=5)



X<sub>6</sub>= Occupation (farmer=1, civil servant=2, artisan=3, traders=4, Agro-marketing=5 Agro-processing=6)

X<sub>7</sub> = Method of land acquisition (Inheritance=1, Purchase=2, Rent=3, Gift=4, Government=5)

X<sub>8</sub> = farm size (ha)

X<sub>9</sub>=Years of farming experience (Number of Years)

X<sub>10</sub>= Cooperative Membership (Yes=1, No=0)

X<sub>11</sub>= Years of membership (years)

X<sub>12</sub>= Annual income (in naira)

X<sub>13</sub> = Extension contact (Yes=1, No=0)

X<sub>14</sub> = Frequency of extension contacts (Number)

X<sub>15</sub>= Access to market (Yes=1, No=0)

a=Constant term of intercept

b<sub>1</sub>(i=1...9) are regression coefficients.

u=Error term.

## **RESULTS AND DISCUSSION**

### **Socioeconomic Characteristics of the Respondents**

The findings from Table 2 presents the socio-economic characteristics of respondents. The result showed that majority (60.0%) of the respondents were male, while 40.0% were female. This indicates that farming activities and participation in the Fadama NG-CARES programme were dominated by men. The dominance of males may be attributed to cultural norms and religious restrictions that often limit women's access to farmland, credit, and decision-making in Northern Nigeria. This aligns with the findings of Adamu *et al.* (2023), who reported that agricultural production in Kaduna State was largely male-driven due to sociocultural constraints faced by women. Similarly, Ibrahim and Ahmed (2022) found that men dominate agricultural extension interactions in the northern region. The implication is that gender inclusion must be prioritized in future interventions to ensure equitable benefit distribution. The findings further show that most (91.5%) of the respondents were married while 7.8% and 0.7% were single and widowed. The predominance of married respondents suggests a higher level of family stability and availability of household labour, as spouses and children often contribute to farm work. This supports the findings of Usman and Sani (2021), who reported that married farmers tend to have larger household labour forces, which enhances productivity and income diversification.



**Table 2: Socioeconomic Characteristics of the Respondents (n=270)**

Variables	Frequency	Percentage
<b>Sex</b>		
Female	108	40.0
Male	162	60.0
<b>Marital status</b>		
Married	247	91.5
Single	21	7.8
Widowed	2	0.7
<b>Educational level</b>		
Adult literacy	8	3.0
Primary School	24	8.9
Qur'anic education	18	6.7
Secondary School	112	41.5
Tertiary education	108	40.0
<b>Primary occupation</b>		
Agro-marketing	1	0.4
Civil Servant	1	0.4
Farming	268	99.3
<b>Methods of land acquisition</b>		
Gift	38	14.1
Government	2	0.7
Inheritance	100	37.0
Purchase	14	5.2
Rent	116	43.0
<b>Access to extension</b>		
No	112	41.5
Yes	158	58.5
<b>Frequency of extension contact</b>		
None	112	41.5
Annually	22	8.1
Fortnightly	1	0.4
Monthly	44	16.3
Quarterly	87	32.2
Weekly	4	1.5
<b>Access to market</b>		
No	58	21.5
Yes	212	78.5
<b>Membership of cooperatives</b>		
No	36	13.3
Yes	234	86.7
<b>Access to credit</b>		
No	99	36.7
Yes	171	63.3
<b>Receive of Intervention</b>		
No	31	11.5
Yes	239	88.5

**Source:** Field Survey, 2025

The result further depicted that a good proportion 41.5% respondents attained secondary education and tertiary education (40.0%), followed by primary school (8.9%), Qur'anic education (6.7%), and adult literacy (3.0%). The relatively high educational attainment among respondents implies greater ability to understand extension messages, maintain records, and apply modern farming techniques. According to Bala and Nwosu (2022), education significantly influences farmers' adoption of improved agricultural technologies and their capacity to manage programme resources effectively. The result on primary occupation indicates that almost all (99.3%) of the respondents





were engaged in farming, while 0.4% each worked as civil servants or in agro-marketing. This suggests that farming remains the predominant livelihood in the study area and justifies the focus of the NG-CARES intervention. The finding agrees with Garba *et al.* (2021), who observed that farming is the major source of livelihood for most rural dwellers in the study area.

On the other hand, the results revealed that 43% of respondents rented their land while 37% inherited, 14.1% obtained it as gifts, 5.2% purchased, and 0.7% acquired through government allocation. The predominance of rented and inherited land indicates tenure insecurity, which may discourage long-term investments. Bello and Ogunyemi (2021) noted that insecure tenure arrangements limit farmers' willingness to adopt land improvement practices and hinder access to formal credit. The results also showed that more than half (58.5%) of respondents had contact with extension agents. In addition, the results indicated that 32.2% of the respondents met quarterly, while 16.3% monthly, 8.1% annually, 1.5% weekly, and 0.4% fortnightly. This reflects moderate extension coverage. The finding supports Eze and Hassan (2023), who noted that irregular extension contact remains a key barrier to agricultural transformation. The findings on market access reveals that majority (78.5%) of respondents had access to markets, while 21.5% did not. Market access is a critical determinant of income stability, as it facilitates the sale of produce and purchase of inputs. Membership in cooperatives was high, with majority (86.7%) belonging to farmer groups and only 13.3% not affiliated. This finding corroborates Nwosu *et al.* (2022), who emphasized that cooperative membership enhances access to credit and collective participation in agricultural interventions. Access to credit was reported by majority (63.3%) of respondents, while 36.7% had no access. Finally, most (88.5%) of respondents confirmed receiving Fadama NG-CARES interventions, while only 11.5% had not benefited. This demonstrates extensive programme outreach and inclusiveness across the Western Zone of Bauchi State.

#### **Sources of Information on Fadama NG-CARES among Respondents**

The findings from Table 4 showed that the leading sources of information about the Fadama NG-CARES programme were fellow farmers, friends, or relatives (59.6%), radio (56.3%), community leaders (55.2%), Fadama desk officers (54.8%), and local government officials (40.7%). Other less frequent sources included religious leaders (23.3%), social media (19.3%), television (15.9%), and newspapers (0.7%). This indicates that interpersonal and community-based communication remains the primary information channel in the study area. Mohammed and Sani (2023) similarly found that peer networks and local radio are the most reliable sources of agricultural information for rural farmers in northern Nigeria. The implication is that strengthening grassroots communication through extension agents and local leaders will enhance programme visibility and participation.

**Table 3:** Sources of Information on Fadama NG-CARES among Respondents

<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>	<b>Rank</b>
Fellow farmer/friend/relative	161	59.6	1 <sup>st</sup>
Radio	152	56.3	2 <sup>nd</sup>
Community leader/traditional ruler	149	55.2	3 <sup>rd</sup>
Fadama desk officer/staff	148	54.8	4 <sup>th</sup>
Local Government Official	110	40.7	5 <sup>th</sup>
Religious leader	63	23.3	6 <sup>th</sup>
Extension agent	55	20.4	7 <sup>th</sup>
Social media	52	19.3	8 <sup>th</sup>
Television	43	15.9	9 <sup>th</sup>
Newspaper/Magazine	2	0.7	10 <sup>th</sup>

**Source:** Field Survey, 2025

#### **Factors Influencing Respondents Access to Fadama NG-care**

The logistic regression results in Table 4 showed that age (-2.30) negative and significant ( $P < 0.05$ ), secondary occupation (2.81) was positive and significant ( $P < 0.01$ ), method of land acquisition (-2.48) was negative and significant ( $P < 0.05$ ) and market access (2.94) was positive and



significant ( $P < 0.01$ ) in influencing beneficiaries access to Fadama NG-Cares Programme in the study area. This implies that, younger farmers were more likely to benefit, those with secondary occupations had higher odds while secure land ownership (inheritance/purchase) increased participation likelihood. Farmers with access to markets were also significantly more likely to benefit.

**Table 4:** Factors Influencing Respondents Access to Fadama NG-care

Variables	Odds Ratio	Std. Err.	Z	P z
Sex	.6052773	.3132007	-0.97	0.332
Age	.9364517	.0267606	-2.30	0.022**
Marital status	1.021704	.2282336	0.10	0.923
Education level	.929133	.1694878	-0.40	0.687
Household size	.948849	.0607307	-0.82	0.412
Primary occupation	.939622	.1343078	-0.44	0.663
Secondary occupation	4.726473	2.608598	2.81	0.005***
Years of farming experience	1.000261	.0234667	0.01	0.991
Land acquisition method	.6201663	.1192547	-2.48	0.013**
Farm size (ha)	1.153754	.1150498	1.43	0.151
Annual income naira	1	3.57e-07	0.04	0.969
Access to extension service	.464887	.2424749	-1.47	0.142
Extension contact frequency	1.061078	.1936479	0.32	0.745
Access to market	5.313957	3.015986	2.94	0.003***
Member of cooperative	.9566026	.5055302	-0.08	0.933
Years of membership in cooperative	.9759854	.0633483	-0.37	0.708
Access to formal credit	.732958	.3856736	-0.59	0.555
cons	.5819453	1.365317	-0.23	0.818

**Source:** Field Survey, 2025 \*\*\*,\*\*Significant at 1% and 5%

These results agree with Oluwole and Ibrahim (2022), who found that youth, multiple-income earners, and market-linked farmers had higher programme access in Kwara State. The findings imply that policies promoting land security, market access, and youth engagement would enhance equitable participation.

## CONCLUSION AND RECOMMENDATION

The study concluded that age, secondary occupation, land tenure, and market access were the factors influencing beneficiaries access to NG Cares programme in the study area. Also the programme requires improved targeting, stronger institutional coordination, and enhanced communication strategies to achieve equitable and sustained impact.

Based on the findings of this study, the following recommendations are made:

- Government should simplify land registration and allocate farmland to both male and female smallholders to encourage long-term investment and equitable participation.
- Future phases of Fadama NG-CARES should deliberately integrate women and youth by providing gender-responsive training, credit facilities, and leadership opportunities.
- Establish rural aggregation centers, feeder roads, and storage facilities to connect farmers to urban markets, thereby improving income stability.
- Encourage beneficiaries to combine crop production with agro-processing, trading, or livestock rearing to enhance resilience against shocks.
- Develop a participatory M&E framework involving farmers, local governments, and NGOs to track outcomes and ensure transparency in programme implementation.

## REFERENCES

- Adamu, A., Bala, M. S., & Yusuf, K. O. (2023). Gender participation in agricultural production and access to farm inputs in Kaduna State, Nigeria. *Journal of Rural Development Studies*, 9(2): 55–66.



- Bala, I., & Nwosu, C. O. (2022). Influence of education on adoption of agricultural innovations among smallholder farmers in northern Nigeria. *African Journal of Agricultural Extension*, **30**(1): 72–83.
- Bello, R. A., & Ogunyemi, A. S. (2021). Land tenure security and agricultural investment decisions among rural farmers in Nigeria. *Journal of Development and Agricultural Economics*, **13**(6): 281–290.
- Eze, C. N., & Hassan, L. T. (2023). Extension contact and technology dissemination among smallholder farmers in northern Nigeria. *International Journal of Agricultural Research and Innovation*, **15**(2): 93–102.
- Federal Ministry of Agriculture and Rural Development (FMARD). (2022). *Fadama NG-CARES programme implementation manual*. Abuja: FMARD.
- Food and Agriculture Organization (FAO). (2021). *The impact of COVID-19 on agriculture and food systems in Nigeria*. Rome: FAO.
- Garba, U., Aliyu, B., & Sule, Y. (2021). Farming as a livelihood strategy among rural households in Bauchi State, Nigeria. *Journal of Agricultural Extension*, **25**(3): 44–53.
- Ibrahim, A. M., & Ahmed, S. M. (2022). Gender dynamics and agricultural extension participation in northern Nigeria. *Nigerian Journal of Gender Studies*, **5**(1): 21–35.
- Mohammed, I. B., & Sani, A. M. (2023). Sources of agricultural information among rural farmers in northern Nigeria: Implications for technology adoption. *African Communication Review*, **11**(1): 87–101.
- National Bureau of Statistics (NBS). (2022). *Nigeria's agriculture performance and rural development indicators*. Abuja: NBS.
- Nwosu, C. O., Bala, I., & Usman, H. A. (2022). Cooperative membership and access to agricultural credit among smallholder farmers in Nigeria. *Journal of Agricultural Economics and Development*, **11**(2): 121–130.
- Oluwole, K. T., & Ibrahim, S. B. (2022). Determinants of farmers' access to NG-CARES agricultural interventions in Kwara State, Nigeria. *Agricultural Policy Research Review*, **8**(4): 33–47.
- Usman, A. B., & Sani, K. A. (2021). Socioeconomic characteristics and household labour contribution among rural farmers in northern Nigeria. *Journal of Agricultural and Rural Sociology*, **12**(3): 102–117.
- World Bank. (2021). *Nigeria COVID-19 Action Recovery and Economic Stimulus (NG-CARES) Project Appraisal Document*. Washington, DC: World Bank.