



A Socio-economic Survey of Farmers in Selected Local Government Areas of Borno State, Northeastern Nigeria

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Abstract

A socio-economic survey of farmers' in selected farming Local Government Areas of Borno State, Nigeria was carried out in the year 2020 in order to suggest solutions that can improve production. The selected Local Government Areas include Bayo, Biu, Kwaya-Kusar, Hawul and Shani. Structured questionnaire was designed and administered in 25 farming communities in the study area. A total of 375 household heads (farmers) were randomly selected 5 each in the 25 communities drawn from the 5 LGAs. Simple descriptive statistics such as percentages, frequency distribution tables, and charts were used to analyze the data generated. The study revealed male farmers dominated the farming population (86%). 61.1% of the farmers were in the active age category (31-45yrs) and formally educated with farming as both their primary occupation and main source of income. The land tenure arrangements identified in ascending order of importance are family inheritance, individual, communal and government ownerships. Acquisition of land for farming purposes was not a problem especially to non-indigenes or by purchase or rent/hire. Cases of land disputes were few in the communities and were resolved mainly by the family/community elders. The average farm holding in the communities was 5.7 hectare per farmer which is above the national average of 2 hectares. Only 6.1% had access to loan before but most (98.7%) indicated the need to have grants and 36.8% expressed desire to have loans now. It is recommended that land tenure reform on inherited agricultural lands be undertaken with the view to sufficiently liberalize land rights. This is to suggest that government need to redefine the land use decree of 1978, so as to separate farm Lands from Lands for other uses as the land tenure affects their crop production.

Key words: Communities, Farmers' characteristics, Land disputes, Land tenure, Socio-economic

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Introduction:

Socio-economic characteristics of farmers in any community affect their productivity and income (Awotide *et al.*, 2019; Ojong *et al.*, 2019). Where such information on socio-economic characteristics and agricultural production limitations exist, solutions that can help to advance their productivity can be proffered. The primary objective of agriculture is to ensure food security in a nation so that households and societies have access to good nutritious food for healthy living (Kansiime *et al.*, 2021). National food security is defined as the ability of a country to produce sufficient food all year round to meet her food requirements both in quantity and quality (FMARD, 2016). Most agricultural communities in Northeastern Nigeria are populated by small-holder farmers (Bolarinwa *et al.*, 2021). Internationally when the farm holding of a farmer is less than 10 hectares the farmer is regarded a small scale or small-holder farmer (Phillip *et al.*, 2019). More than 80% of farmers in Nigeria are small holder farmers and they constitute a major contributor to Nigeria's Gross Domestic Product (GDP) (Adeniyi, 2019). Generally, small-holder farming system in Nigeria is mixed farming (growing crops and rearing of animals) and/or mixed cropping in various ways (Asadu *et al.*, 2019).

This practice is most widespread in Northern Nigeria. The major advantages are possession of own labour and land; insurance against total crop failure due to pest and disease attack and climate change; and regular food supply for family use and cash. Nigeria has a land area of about 91 million hectares, with 82 million hectares good for farming (Shehu, and Clarke, 2020); yet half of this arable land has not been exploited to produce crops and livestock to stem the threat of hunger and poverty through efficient production system (Mgbenka and Mbah, 2016). Current statistics shows that the contribution of agriculture to the GDP in Nigeria is 24.18 %, to non-oil exports earnings is 75 % and 70% of the labour force is in agriculture but agriculture's share of Federal budget is $\approx 2.0\%$ only (FMARD, 2016; Emefiele, 2017). This is against Maputo Declaration that prescribed a minimum of 10% budgetary allocation to the agricultural sector (FMARD, 2016).

The major constraints on agricultural production are often associated with lack of information on soil characteristics, climate variability, available technology and socio-economic data including market access (Fadairo *et al.*, 2019; Martey and Kuwornu, 2021). The communities selected for this study are in rural areas of Borno State known for various farming activities. The objective of this survey was to obtain an update of the current farmers' socio-economic characteristics as well as constraints to agriculture in order to proffer solutions so as to encourage the farmers, government and any interested non-governmental organization to invest in agriculture in the areas in order to improve or enhance the income of the farmers and their livelihoods.

Materials and Methods:**Description of the Study Area:**

The study was conducted in Borno state, Northeastern Nigeria in 2020. The study area is located between latitudes 10° N and $11^{\circ} 30^1$ N of the Equator and longitudes $11^{\circ} 39^1$ E and $12^{\circ} 40^1$ E of the Greenwich Meridian and found in the Sudan Savannah zone of North-eastern Nigeria. It has two marked seasons, that is, the wet and dry seasons. It has an annual rainfall of between 600mm-1200mm with an annual temperature average of about 27° C (Bwala, 2011). The vegetation in the area is mainly the derived savannah due to the absence of forest that is

characterized by virgin land covered by tall and large trees. It is said that the derived savannah vegetation belt owes its origin to human activities such as clearing the forest for crop cultivation and bush fire.

The major ethnic groups that co-exist in the area are Bura, Pabur, Kanakuru and Tera. The Bura and Babur ethnic groups are almost inseparable as they speak the same language with little difference in intonation and also share the same culture and values. Occupationally, farming is the main stay of the population economy and most people are subsistence farmers. Agriculture employs the larger percentage of the working population (78%) in the area, but agricultural landholdings are generally small. The predominant form of crop production in this area is the rain-fed cultivation (Amaza, Olayemi, Adajibi, Bila and Iheanacho, 2007).

The agricultural sector is dominated by a grain economy based on the cultivation of maize (*Zea maize*), guinea corn (*Sorghum*), millet (*Pennisetum ameritanum*) and rice (*Oriza glaberrima*). Other crops grown include groundnut (*Arachi hypogeal*), cotton (*Gossypium spp*), beans (*Vigna spp*), cassava (*Manihot esculenta*) etc which are usually cultivated for both food as well as cash crops. Most households in the area do keep one form of livestock or the other to supplement their sources of income. There are also other forms of occupation in the area which include commerce, civil service, fishing and crafts (Amaza, Olayemi, Adajibi, Bila and Iheanacho, 2007)

Method of Survey Adopted/Data Analysis:

Data on socio-economic characteristics of the farmers including land tenure systems, methods of land acquisition, disputes over land and ways of resolving them, acquisition of farm inputs such as loans, production constraints and mitigation measures were obtained from the selected communities. Five Local Government Areas (LGAs) were purposively selected out of the 27 LGAs in the state due to the fact that these LGAs were relatively free of Boko Haram insurgents' activities. The five LGAs include Bayo, Biu, Kwaya-Kusar, Hawul and Shani. Five farming communities were further selected randomly in each of the LGAs to give a total of 25 farming communities. From each of these communities, 15 household's heads were randomly selected and interviewed using a structured questionnaire to obtain the basic information needed for the study. Simple descriptive statistics such as percentages, frequency distribution tables, and charts were used to analyze the data generated. The Local Government Areas, location of sampled settlements and distribution of respondents are shown in Table 1.

Table 1: Location of Sampled Settlements and Distribution of Respondents

| LGA | Settlements | Samples | Latitudes | Longitudes | Altitude in meters (a.s.l.) |
|-------------|-------------|---------|--------------------------------------|--------------------------------------|-----------------------------|
| Bayo | Wuyo | 15 | 10 ⁰ 22 ¹ .953 | 11 ⁰ 41 ¹ .614 | 309 |
| | Teli | 15 | 10 ⁰ 26 ¹ .739 | 11 ⁰ 42 ¹ .220 | 309 |
| | Jaragol | 15 | 10 ⁰ 13 ¹ .373 | 11 ⁰ 37 ¹ .314 | 226 |
| | Balbaya | 15 | 10 ⁰ 39 ¹ .356 | 11 ⁰ 44 ¹ .088 | 578 |
| | Dampitam | 15 | 10 ⁰ 36 ¹ .810 | 12 ⁰ 11 ¹ .766 | 773 |
| Biu | Mandafuma | 15 | 10 ⁰ 42 ¹ .479 | 12 ⁰ 15 ¹ .284 | 547 |
| | Yamarkumi | 15 | 10 ⁰ 39 ¹ .532 | 12 ⁰ 09 ¹ .818 | 672 |
| | Gur | 15 | 10 ⁰ 46 ¹ .728 | 12 ⁰ 13 ¹ .873 | 554 |
| | Miringa | 15 | 10 ⁰ 43 ¹ .705 | 12 ⁰ 08 ¹ .617 | 659 |
| | Kigir | 15 | 10 ⁰ 34 ¹ .046 | 12 ⁰ 13 ¹ .094 | 792 |
| Hawul | Kwaya-Bura | 15 | 10 ⁰ 32 ¹ .503 | 12 ⁰ 07 ¹ .811 | 729 |
| | Grim | 15 | 10 ⁰ 34 ¹ .954 | 12 ⁰ 00 ¹ .808 | 623 |
| | Gwaski | 15 | 10 ⁰ 29 ¹ .862 | 12 ⁰ 12 ¹ .586 | 774 |
| | Pelachiroma | 15 | 10 ⁰ 26 ¹ .119 | 12 ⁰ 32 ¹ .815 | 367 |
| | Kwajjafa | 15 | 10 ⁰ 27 ¹ .819 | 12 ⁰ 25 ¹ .220 | 457 |
| Kwaya-Kusar | Wandali | 15 | 10 ⁰ 34 ¹ .110 | 11 ⁰ 57 ¹ .500 | 509 |
| | Gusi | 15 | 10 ⁰ 23 ¹ .986 | 12 ⁰ 01 ¹ .002 | 394 |
| | Milda | 15 | 10 ⁰ 21 ¹ .845 | 11 ⁰ 58 ¹ .100 | 324 |
| | Peta | 15 | 10 ⁰ 20 ¹ .650 | 11 ⁰ 54.960 | 290 |
| | Guwal | 15 | 10 ⁰ 32 ¹ .499 | 11 ⁰ 54 ¹ .960 | 460 |
| Shani | Wurojam | 15 | 10 ⁰ 08 ¹ .715 | 12 ⁰ 01 ¹ .285 | 226 |
| | Gasi | 15 | 10 ⁰ 13 ¹ .200 | 11 ⁰ 49 ¹ .276 | 224 |
| | Bakaina | 15 | 10 ⁰ 08 ¹ .920 | 12 ⁰ 02 ¹ .150 | 219 |
| | Lakundum | 15 | 10 ⁰ 11 ¹ .067 | 11 ⁰ 57 ¹ .763 | 262 |
| | Borkulok | 15 | 10 ⁰ 14 ¹ .955 | 11 ⁰ 58 ¹ .275 | 322 |
| Total | 25 | 375 | | | |

Source: Field survey, 2020

Results and Discussion:

Bio Data of the Farmers

Generally, adult male and female owned the farms in the study area while their children offered their labour based on their age and the types of farm activities available to be carried out. The result in Table 2 shows that out of the 375 farmers across the 25 communities surveyed male farmers constituted the larger proportion of 86.9% while the females were only 13.1%. 61.1% of the farmers were in the active age (31-45yrs) category signifying that majority of the farmers would gain from the results of this study before they retire from farming. Also only 5.6% of the farmers had no formal education while 94.4% of the farmers had formal education. This would be an advantage for quick response to new farming technology adoption in the whole area. Again farming was established to be both the major occupation and main source

of income of the people with artisanship, trading and salaries rambling in declining order far behind farming. Consequently, the locations represent true agricultural communities.

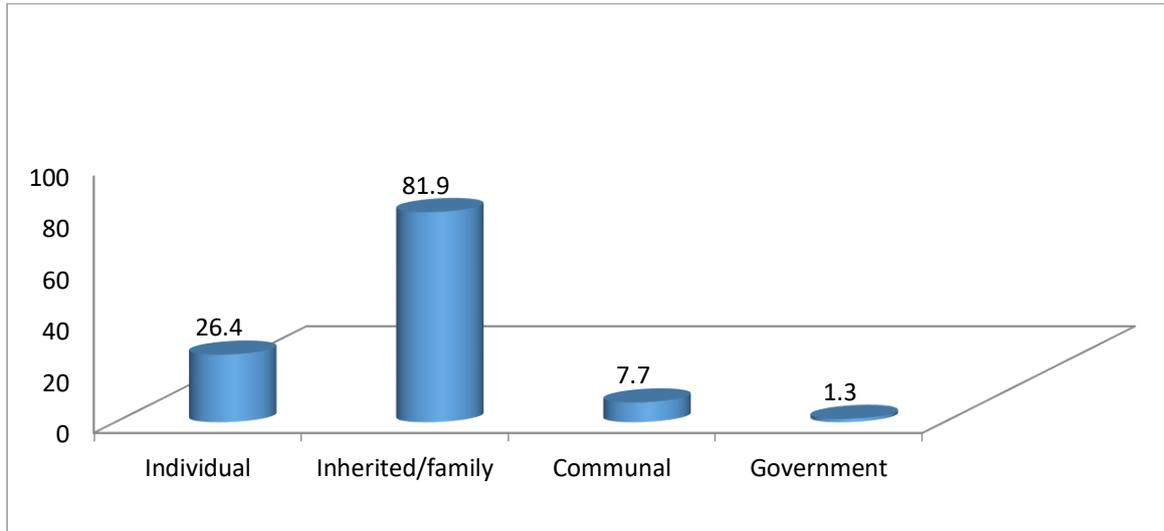
Table 2: Bio Data of the Respondents

| Variables | Frequency | Percentage |
|------------------------------|-----------|------------|
| Gender | | |
| Male | 326 | 86.9 |
| Female | 49 | 13.1 |
| Age | | |
| <30 | 32 | 8.5 |
| 31-45 | 229 | 61.1 |
| >45 | 114 | 30.4 |
| Education attainment | | |
| No formal education | 21 | 5.6 |
| Primary | 76 | 20.3 |
| Secondary | 211 | 56.3 |
| Tertiary | 67 | 17.8 |
| Primary occupation | | |
| Farming | 235 | 62.6 |
| Trading | 31 | 8.3 |
| Artisanship | 43 | 11.5 |
| Civil servant | 66 | 17.6 |
| Main source of income | | |
| Farming | 267 | 71.2 |
| Trading | 25 | 6.7 |
| Artisanship | 32 | 8.5 |
| Civil servant (Salaries) | 51 | 13.6 |

Source: Field survey, 2020

Land Ownership Arrangements:

Figure 1 presents responses on land ownership arrangements among the farmers in the study areas. Individual land ownership constituted about 26.4%, family ownership arrangement constituted almost 90% while communal and government had 7.7% and 1.3% respectively. This indicates that farmers in the local government areas preferred family and individual land ownership arrangements. A number of reasons for the preference as indicated by the farmers included the fact that the two arrangements would increase farmers' access to land for enhanced agricultural activities and productivities in the area. In addition, the two arrangements appeared easy to operate without much conflict among farmers and communities.



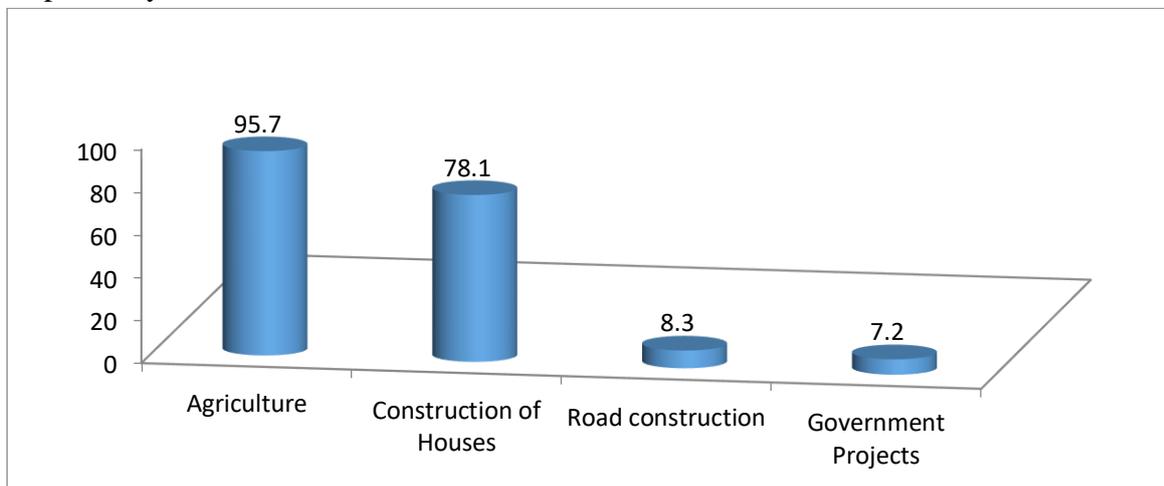
Source: Field survey, 2020

Figure 1: Land Ownership Arrangements in the Communities

*Multiple responses recorded

Rates and Areas of Effects of Land Use Arrangements:

The result in Figure 2 shows the effects and the rate at which the farmers land ownership arrangements affects major sectors of the economy of the area. The land ownership arrangement has significantly affected agriculture and building of residential houses with percentage ratings of about 95.7% and 78.1% respectively. The construction of roads and government projects were less affected with percentage ratings of about 8.3% and 7.2% respectively.



Source: Field survey, 2020

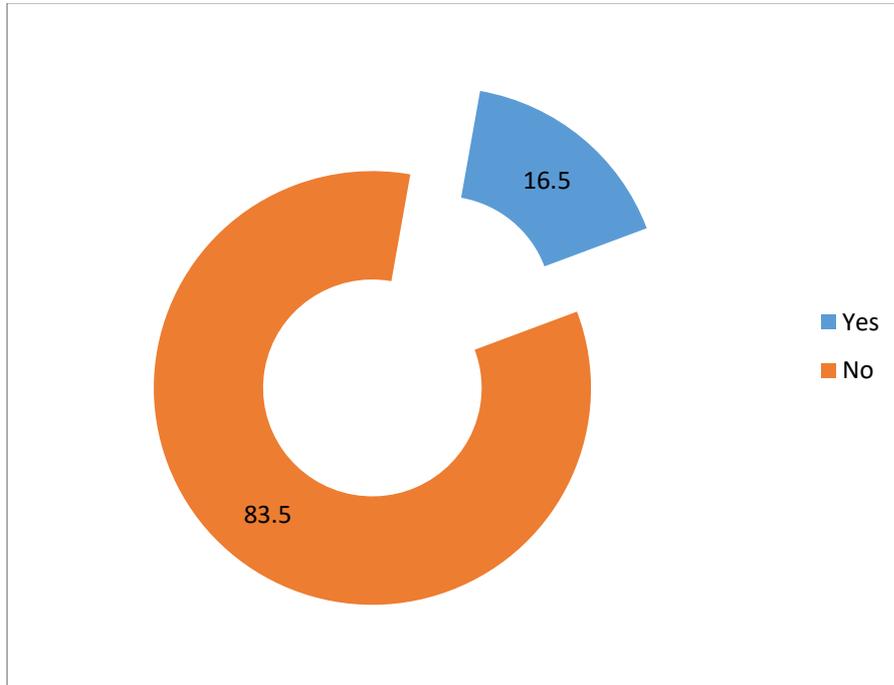
*Multiple responses recorded

Figure 2: Effects of Land Use Arrangements in all the Locations

Non-indigenes' Right to Own Land:

Figure 3 presents the right of non-indigenes to own a land in the communities with yes and no dividing responses. The no responses constituted 83.5% while yes responses were only 16.5%. This implied that non-indigenes have less access to land for any economic activities in

the area. The reason for this is because the control over lands rests more on the communities and not individuals.

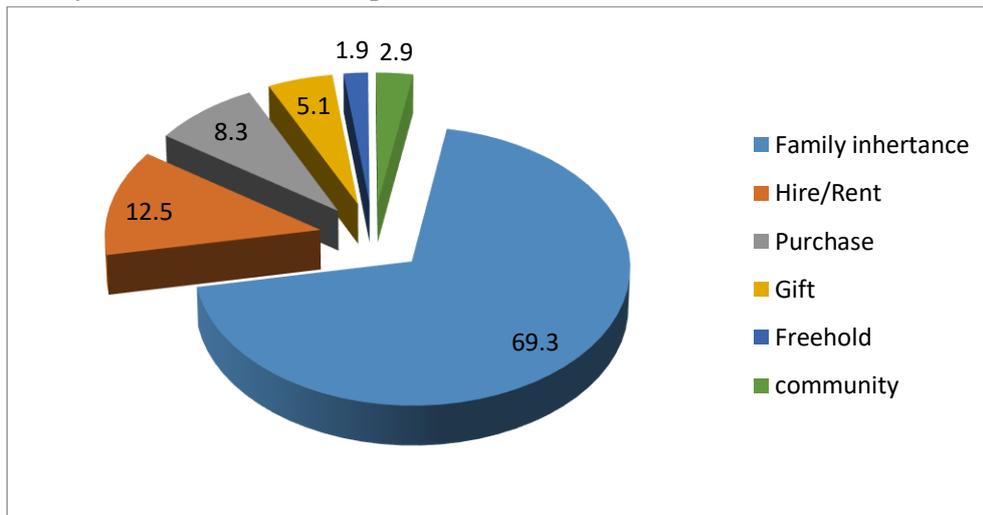


Source: Field survey, 2020

Figure 3: Non-indigenes Right to Own Land in all the Communities

Methods of Land Acquisition:

Figure 4 presents the common methods of land acquisition among farmers in the study area in Borno State. Lands were mostly acquired through family inheritance (69.3%), hire/rent (12.5 %) and purchase (8.3%). Gift were 5.1%, freehold 1.9% and community 2.9% respectively. From these figures, farmers in the communities acquire their lands mainly through family inheritance, rent and purchase.

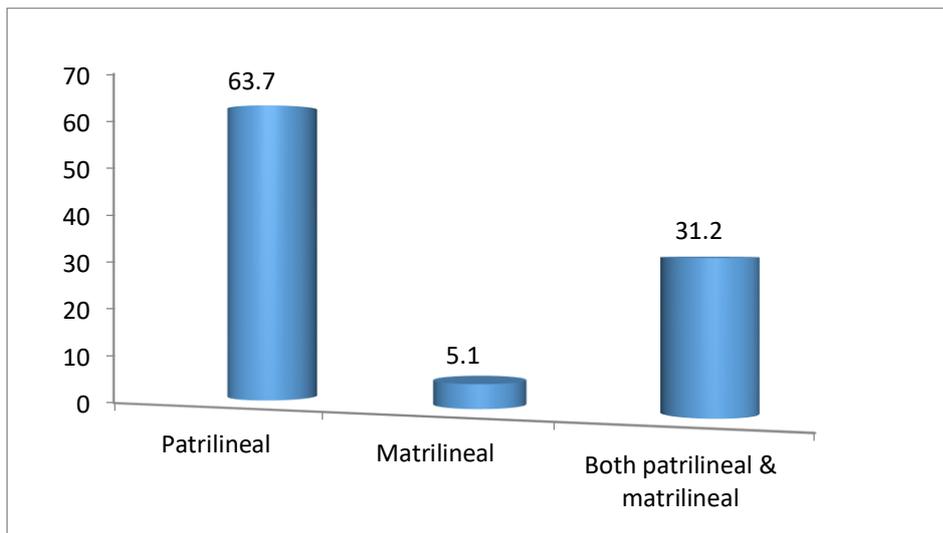


Source: Field survey, 2020

Figure 4: Methods of Land Acquisition

Nature of Family Inheritance of Land:

The result in Figure 5 shows gender-based inheritance of land in the study communities of Borno State. The patrilineal had higher (63.7%) access to land inheritance; matrilineal had less (5.1%) access to land inheritance while those with access to land inheritance through both patrilineal and matrilineal in the area had (31.2%). This indicates that women are relatively disadvantaged in terms of land inheritance in entire area. This practice is common in most African communities.

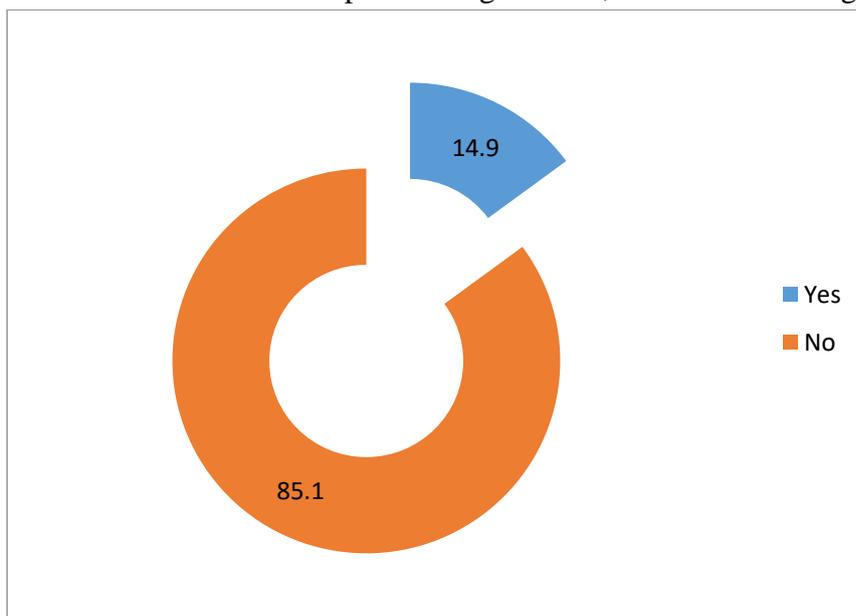


Source: Field survey, 2020

Figure 5: Nature of Family Inheritance in the Study Area

Occurrence of Land Dispute in the Communities:

The result in Figure 6 presents the rate of incidence of land disputes in the area. The yes responses constituted almost 15% while no responses were 85.1%. This signifies that there were few cases of land dispute among farmers, families and villages in the area.



Source: Field survey, 2020

Figure 6: Occurrence of Land Dispute in the Communities

The Nature of Land Disputes in the Area:

Table 3 presents common nature of land disputes among farmers in the communities surveyed. About 88% of the land disputes occurred between individuals, 50% occurred between communities while 19.6% of land disputes occurred between families. Hence, cases of land dispute among individual are more common in the area. All the land disputes mentioned were largely boundary disputes not involving the entire parcels of land.

Table 3: The Nature of Land Disputes in the Area (n=56)

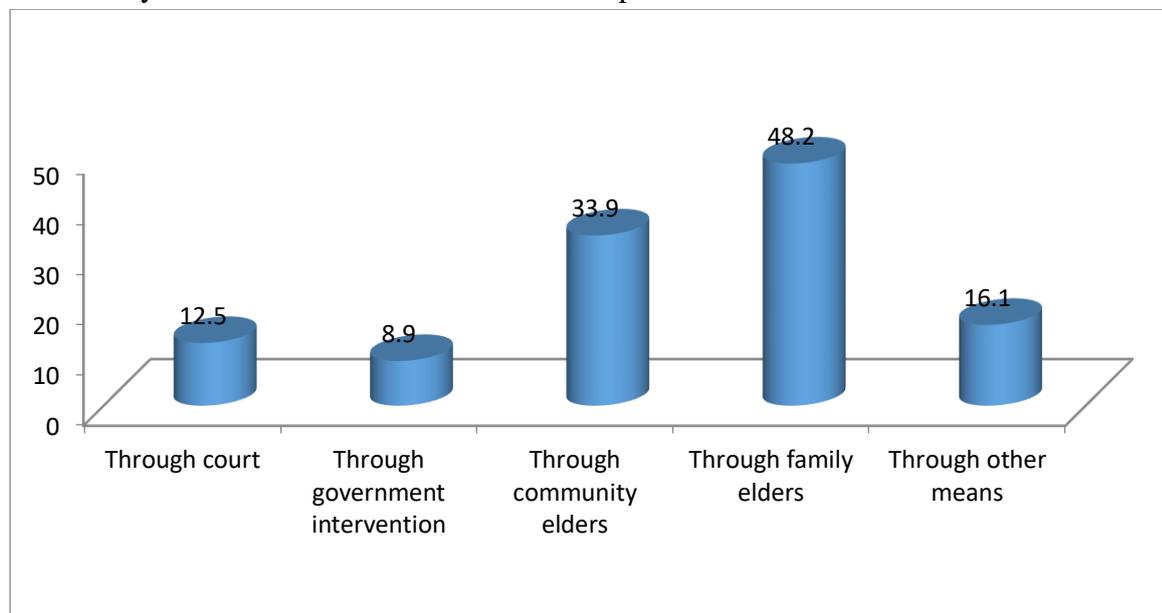
| Nature of land disputes | Frequency | Percentage |
|-------------------------|-----------|------------|
| Between individuals | 49 | 87.5 |
| Between communities | 28 | 50.0 |
| Between families | 11 | 19.6 |

Source: Field survey, 2020

*Multiple responses recorded

Different Ways of Resolving Land Disputes:

Figure 7 reveals the common methods of resolving land disputes among farmers in the study area. Majority (48.2) of land disputes were resolved through the efforts of family elders, almost 34% of land dispute were settled through the efforts of the community leaders and 12.5% were resolved through formal court of justice, while government intervention and other means of resolving land disputes had 8.9% and 16.1% respectively. Hence, family and community elders resolved most of the land dispute in area.



Source: Field survey, 2020

*Multiple responses recorded

Figure 7: Ways of Resolving Land Disputes

Farm Size Holding of the Farmers:

Table 4 shows that the minimum holding per farmer in the area was one hectare; the maximum was 6 ha and the average was 5.7 ha. This average is more than the national average

of 2.0 ha (FMARD, 2016) but only 60% of 10.0 ha used to classify farmers as small-holder farmers world-wide (Mgbenka and Mbah, 2016).

Table 4: Farm Size Holding of Farmers in the Communities

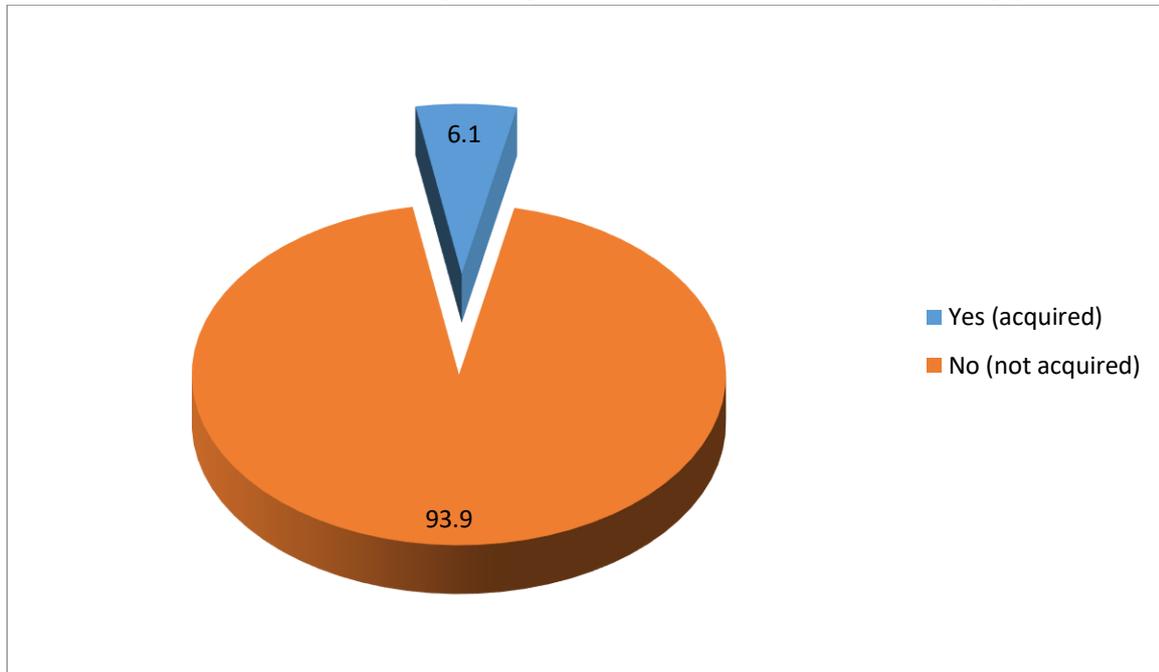
| | Minimum | Maximum | Mean |
|--------------|---------|---------|-----------|
| Hectare (ha) | 1.00 | 6.00 | 5.7 (3.6) |

Source: Field survey, 2020

*Values in parenthesis represent standard deviation

Loan Acquisition from Government in Previous Years:

The result in Figure 8 presents the acquisition of loan by farmers in previous years. The Yes responses constituted only about 6% while No responses were almost 94%. This wide margin of 88% indicates that majority of the farmers in the area had not received loans from government in the time past but for those that indicated Yes, an average of two hundred thousand naira (₦150 000.00) only was given to each farmer in 2018 farming year.

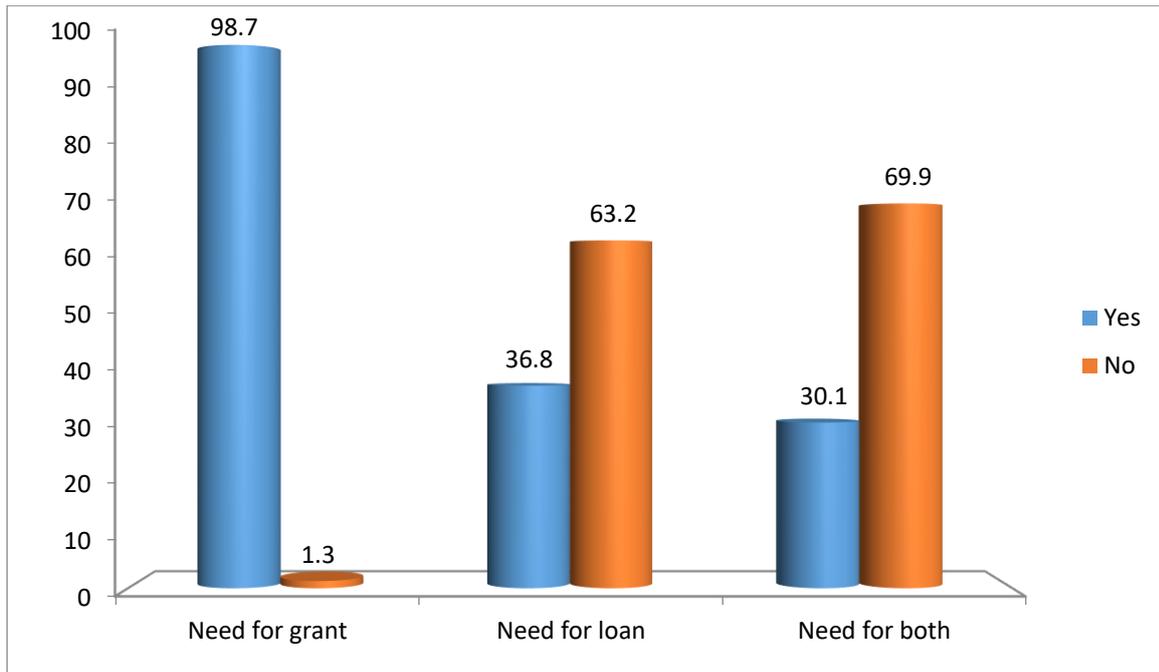


Source: Field survey, 2020

Figure 8: Loan Acquired from Government in Previous Years

Farmers’ Responses on the Need for Loans and Grants:

Figure 9 presents the responses of farmers on their need for grants and loans. Majority (98.7 %) of the farmers indicated interest in grant while only 1.3% showed no interest. Fewer (36.8%) of the farmers indicated interest in loans for improved agricultural production while majority (63.2%) showed no interest. About 30% of the farmers indicated interest in both grant and loan while most (69.9%) showed no interest in both means of accessing finance for boosting agricultural production of the state.



Source: Field survey, 2020

Figure 9: Farmers Responses on the Need for Loans and Grants

Contact with Agricultural Extension Officers and Membership of Farmers Association:

Table 5 presents the responses of farmers on contact with agricultural extension officers in the area. Majority (94.4%) of the farmers had no contact with the agricultural extension worker, only about 6% had contact with the extension officers. On how often the farmers had contact with the extension workers, the few that had, was on average of two times in a year. On the farmers’ membership to farmers’ association, most (97.1%) did not belong to any farmers’ associations. Only 2.9% of the farmers belong to one form of farmers’ association or the other in the area.

Table 5: Agricultural Extension Officers’ Contact and Membership of Farmers Association

| Variables | Frequency | percentage |
|----------------|-----------|------------|
| Had contact | 21 | 5.6 |
| Had no contact | 354 | 94.4 |
| Member | 11 | 2.9 |
| Not member | 364 | 97.1 |

Source: Field survey, 2020

Conclusion and Recommendations:

The socio-economic survey of farmers in some selected LGAs in Borno State, Nigeria showed that the farming population was dominated by male. Most of the farmers were in an active age group and formally education with farming as their primary occupation and main source of income. The land tenure systems identified in ascending order of importance were: inherited/family, individual communal and government ownerships. Acquisition of land by indigenes was mainly by patrilineal inheritance. Non-indigenes and government could acquire land through laid down procedures particularly through the elders. Land acquisition through

inheritance dominated over hire and purchase. Cases of land dispute were mainly boundary issues between individuals and few communities and were resolved by the elders or through court of justice. Very high potentials exist for sustainable agricultural growth in all the communities surveyed. Extensive expansion of maize and rice production in all the communities was proposed. Small-holder Farming System (SFS) was also proposed in all the communities. Presently the land farmer ratio for the surveyed farms was less than 0 .05 ha per farmer. The average farm holding in the areas was 5.7 ha per farmer. This is encouraging because it is above the national average of 2 ha but below the world definition for small-holder farmers which is 8 ha per farmer. Most of the farmers indicated the need to have grants and only expressed desire to have loan. In light of the challenges for food self reliance, growth and development of the agricultural sector, it is recommended that land tenure reform on inherited agricultural lands be undertaken with the view to sufficiently liberalize land rights. This is to suggest that government need to redefine the land use decree of 1978, so as to separate farm Lands from Lands for other uses as the land tenure affects their productivity.

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