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## **Typology of farmers in Relatively Safe Local Government Areas of the North Eastern States of Nigeria**

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### **Abstract**

Recent security challenges have caused disruption in the Agricultural and economic livelihood of the people in north eastern states of Nigeria. However owing to recent gains in in security and the resettlement of some displaced people agricultural activities have started coming back. A study was commissioned to assess the typology of farmers in the relatively safe Local Government Areas of Adamawa, Borno and Yobe States. The study farmers and stakeholders have started agricultural and economic activities. Crops grown include maize, sorghum, millet, rice, cowpea, groundnut, soybean, sesame and water melon. These crops are grown for food and income. Farmers also keep livestock especially the small ruminant and poultry. They use organic and inorganic fertilizer.

### **Introduction**

The North Eastern States of Borno, Yobe and Adamawa have faced difficulties in attracting new agricultural investments due to the recent security crises. A massive loss of lives and properties worth billions of Naira have been the direct result of the insurgency. There has been a large displacement of farmers, herders and other agricultural value chain actors, such as input supply traders, fleeing the violence which has brought about a decline in agricultural activities and affected their livelihoods. Consequently, input supply was disrupted. Agricultural activities were inevitably suspended in most parts of the States except in limited areas around the State capitals. Borno State has been the most affected among the three as more than half of the State was occupied by the insurgents at one time. Significant military gains have been made, including the recovery of territories previously held by the insurgents. This improvement in situation has led to an increase in demand by stakeholders, for agricultural inputs supply to enable IDPs and returnees with access to land and their host communities to resume cultivation. A study was commissioned in early 2018 with the objective of getting situation reports of the farmers in selected Local Government Areas (LGA) in the region. The study areas were in Borno, Adamawa and Yobe States. In Borno State, the areas covered included (southern Borno) Biu, Hawul and KwayaKusar LGAs. In Adamawa, the LGAs included Guyuk, Song and Yola South and in Yobe the LGAs of Damaturu, Gujba and Gaidam (Fig. 1). Three main reasons guided the choice of each of these LGAs viz security, host communities of IDPs, and presence of returnees.

### **Methodology**

#### **Sampling Technique**

A combination of purposive and random sampling techniques were used in the selection of respondents. A multi stage sampling technique involving, purposive selection of Adamawa, Borno and Yobe states, selection of the LGAs based on the level of security. The random selection of five communities from each LGA from a list of 20 communities and final stage of the sampling procedure was the selection of farmers/households. A total of 453 households were interviewed.

## Results and Discussions

### Demographic Characteristics of Respondents.

The respondent were made up of 339 males (74.8%) and 114 females (25.2%) with an average age of 46.7 years. This is indicative that on average respondents were active and experienced enough to be able to make informed judgement. The average household size was high across all three States (Table 1). Yobe State had the highest average household size (11). This result reflects the reality that birth rate in Nigeria is high. The total number of dependents were more than that of economically active household members (aged 18-60) across all States though not too high. This means that although some dependency burden exists, this burden was not very high. The high levels of dependency could be a reflection of the fact that the insurgency in the States has separated many households' members fleeing the conflict or high death among economically active member.

The results revealed that 85% of respondents in Yobe, 76% in Adamawa and 82% in Borno rear livestock (Table 1). In Adamawa an average households that rear cattle has 8 per household, while the figures were 4 for Yobe and Borno State. A high number of sheep was also reared in Yobe and Adamawa. Similarly an average household that rear sheep in Adamawa, Yobe and Borno States reared 9, 8 and 5 sheep respectively. The State with highest average number of goats reared per household was Adamawa at 9 while Yobe and Borno had 7 and 6 respectively. Although larger percentage of farmers in Yobe State (85%) keep ruminant livestock followed by Borno (82%) and Yobe (76%), Adamawa State had the highest number of ruminant (24) kept by the households this was followed by Yobe (19) and then Borno States (13). This may be related to the feed availability which is more in Adamawa compared to the other two states. Significant number of household in Borno and Adamawa keep pigs at 9 and 7 per household respectively. As expected, poultry at 16, 13 and 12 per household in Yobe, Adamawa and Borno respectively was the livestock with the highest number per household (Table 1). Major crops grown

Table 2 shows the major crops grown in the study area. Cowpea is a major crop grown across the three States (63-80%). Nigeria is the highest producer of cowpea in the world (FAO, 2018) and most of these cowpea are grown in the northern States. Maize is a major crop grown by respondents (95%) in southern Borno and Adamawa (79%), while Sorghum is grown by majority of respondents in Adamawa and Yobe. Millet is grown by majority of respondents (63%) in Yobe State, but marginally in Adamawa and Borno. Groundnut is grown by approximately a third of respondents in Yobe and Adamawa, while in Borno between 57% of respondents grow groundnuts. Very few farmers grow soybean in Adamawa and Yobe, but in Borno approximately 47% of respondents grow soybean. It is obvious then that cereals and legumes are very important to respondents in the three States. Any intervention that targets food security in these States should target these cereals and legumes for food security and income generation. Other crops of importance were wheat, water melon and sesame. Average area planted to these crops by the farmers were generally low ranging from 1.61ha per household in groundnut to 3.27 ha in sorghum. Sorghum and millet had the highest land area under cultivation, while the legumes had lower area.

Majority of respondent used the crops for both domestic consumption and commercial income (Table 2). Millet and sorghum are used mostly for domestic consumption, while soybean is mostly sold or processed for income generating activities. While 29, 55 and 62% of maize, sorghum and millet farmers produced mainly for consumption only 12% of groundnut and soybean and 14% of cowpea farmers produced only for consumption. In general, the cereals are used mostly for domestic consumption while a higher percentage of legumes are sold for cash income. An exception to this is rice where only 13% of production were produced mainly for home consumed by the household. Water melon (65%) and sesame (81%) are produced mainly for income generation. It is interesting to note that the farmers though classified as subsistence farmers, they produce several of their crops also for income generation. Ajeigbe et al., (2018) noted that majority of farmers (71%) rely on informal seed sources for nearly all crops except for cowpea. Farmers relied mostly on their own production for maize (72%) and rice (41%) seeds. In Nigeria, maize and rice are the seed most traded by seed companies, however, their availability was still low in the three states covered by this study, implying very low coverage by seed companies. Ajeigbe et al., (2018) stated that there was a steady drop in farmer's perception of their harvests between 2016 and 2017. They reported that while 30% of groundnut farmers perceived their harvests to be "good" in 2016 cropping season, this dropped to 11% in 2017 cropping season. They observed that the perception of the farmers correlate with the yield and quantity of the crop produced implying that average yield was lower in 2017 than 2016 and concluded that this was related to rainfall distribution that was better distributed in 2016 compared to 2017. This implies that the farmers in the north east Nigeria are still largely dependent on the vagaries of climate for crop productivities. Intensification and use of inputs should be

promoted in view of the generally agreed climate change which is expected to have negative effect on subsistent farming.

### Type of fertilizers used

Fertilizer availability is very important to farmers in Northern Nigeria because of the low soil fertility status as a result of poor soil management practices and environmental degradation. The percentage of farmers who used organic and inorganic fertilizers are shown in table 2. Majority of farmers (80%) used inorganic fertilizer on maize, rice (76%) and millet (66%). The percentage of farmers who apply both types of fertilizers on legumes were less than those that apply on the cereals. This is because the fertility needs of the cereals are higher than that of legumes, because the legumes are able to fix nitrogen, while cereals require nitrogen fertilizers. The farmers also stated that maize respond better to fertilizer than any of the crops cultivated in the region.

### Conclusion

The insurgency in the Northeast of Nigeria destabilized many farmers rendering cultivable areas out of reach to many farm-families reduced the area of land under cultivation. Despite this situation, and because of the relatively improved situations, farmers and stakeholders have started agricultural and economic activities. Fertilizer use is common though they generally use less than optimum quantity. Livestock keeping especially small ruminant and poultry very common among the farmers who also use the manure from these livestock on their farms. Maize is most common crop in southern Borno and Adamawa states while sorghum and millet are most common in Yobe State. Sorghum is also next to maize in Adamawa state. Among the legumes, Cowpea and groundnut are most common. These crops are grown for both home consumption and income generation. A few other crops (sesame and water melon) are grown mainly for income generation.

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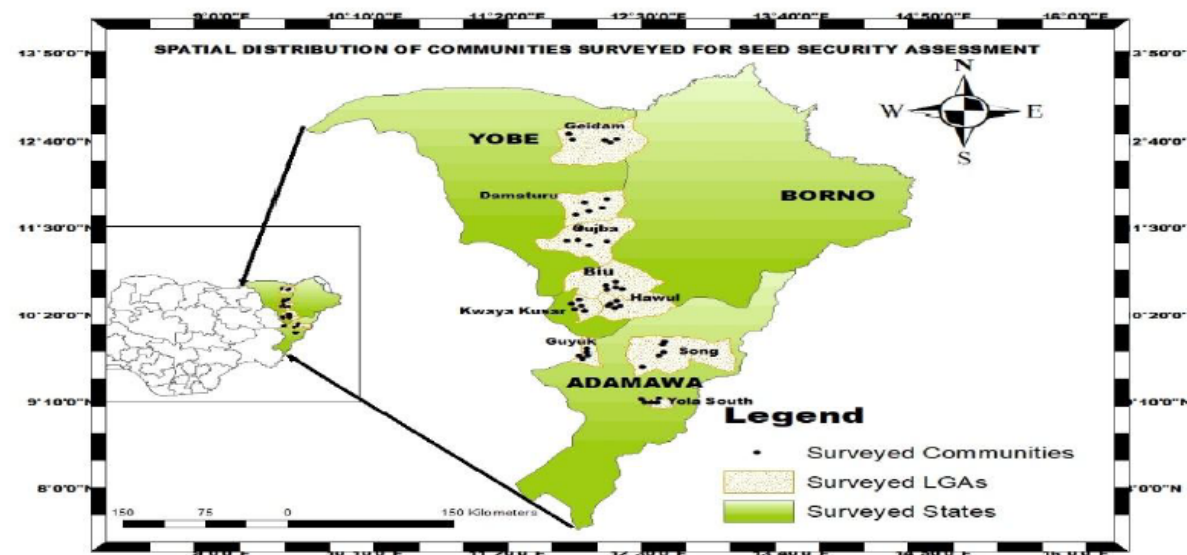


Figure 1: The study area

**Table 1: Household demographic characteristics**

	Yobe	Adamawa	Borno
<b>Gender (%) of Household head</b>			
Males	86.0	86.8	88.2
Females	14.0	13.2	11.8
<b>Household size</b>			
Average	11.29	9.66	8.32
Range	1-40	2-35	1-25
<b>Average number of household members engaged in agricultural activities</b>			
Males	4.34	4.19	3.79
Females	2.50	2.56	2.34
Percent of the total household	42.31	41.70	48.50
<b>Family Constitution (age categories)</b>			
<5	2.49	1.88	1.87
5-17	2.55	3.49	2.72
Child Dependents	5.04	5.37	4.59
18-35	2.42	2.88	2.47
36-60	2.21	1.98	1.67
Economically Active	4.63	4.86	4.14
>61	1.18	0.50	0.60
Total dependents	6.22	5.87	5.19
Dependency ratio	1.34	1.21	1.25
Percentage of households (%) with livestock	84.7	75.5	82.2
<b>Mean Number of livestock per family</b>			
Cattle	4.11	7.55	3.75
Sheep	8.29	8.65	4.49
Goat	6.54	8.51	5.65
Pig	4.00	7.10	8.50
Donkey	3.50	0	0
Horse	0	0	2.00
Poultry	15.95	13.30	11.90
Other	4.0	4.67	0

**Table 2: Crops grown and average area cultivated, uses and fertilizer use by farmers in North east Nigeria**

Crops	Crops Grown (%)			Area Planted (ha)	Seed Planted (kg)	Domestic Consumption (%)	For sale (%)	Both (%)	Organic Fertilizer	Inorganic Fertilizer
	Yobe	Adamawa	Borno							
Maize	23	78	91	2.21	50	29	3	65	39	80
Sorghum	85	59	15	3.27	31	55	6	39	56	58
Millet	63	5	5	3.06	16.	62	5	33	77	66
Rice	25	25	51	2.39	180	13	7	80	74	76
Wheat	5	1	1							
Cowpea	63	66	80	1.69	13	14	14	72	44	58
Groundnut	33	33	57	1.61	32	12	18	71	41	55
Watermelon	4	4	4			14	65	21		
Sesame	1	3	4			8	81	11		
Soybean	0	9	47	2.79	16	12	37	52	23	57