



## Data Article

# Survey data on land tenure and food security among farming households in northern Nigeria



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## ABSTRACT

This dataset presents data collected from the households' survey in Northern Nigeria to examine land tenure and property rights among smallholder rice farmers and the influence it has on household food security. Data collection was by personal interviews of adult members of the farmers' households, focusing on the households' socio-economics, United States Department of Agriculture'- 18 Household Food Security questions for households with children, land titling status and land tenure type on farmland cultivated during the 2016/17 farming season. The data were collected from 475 rice farmers selected by multistage sampling across 84 rice-growing communities, seven States and the three geopolitical zones in northern Nigeria. Household food security was assessed within the framework of the United States Department of Agriculture' HFS Survey Module. Land Tenure and Property Rights (LTPRs) assessment was in terms of the type (source) and registration of titles to farmlands. The hypothesis that guided the cross-sectional survey conducted to generate these data is that insecure land tenure and property rights are important drivers of food insecurity.

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## Specifications Table

Subject	Agricultural Sciences
Specific subject area	Land tenure, Household food security
Type of data	Table
Data collection	A pilot test was done in 2016 among the farming households in Ogun state to examine the appropriateness of the questionnaire. Data collection was by personal interviews of adult members of the farming households. The survey questionnaire (semi-structured) is provided as a supplementary file.
Data format	Raw
Parameters for data collection	Farming households in main rice ecologies in Northern Nigeria.
Sampling process	The cross-section data were obtained from 475 rice farmers, selected in a three-stage sampling process. Purposive selection of seven (7) States that have been the leading rice producers in Northern Nigeria, based on production statistics from (National Bureau of Statistics [NBS], 2016) Purposive selection of six (6) Agricultural Blocks per State from the main rice-producing areas of the State, and two (2) Extension Cells per block - that is, 12 Cells per State and 84 Cells in all. Proportionate stratified random selection of six rice farmers from the list of rice farmers in the selected cells.
Data source location	Town/Region: Niger, Nasarawa, Kaduna, Kano, Kebbi, Sokoto, Taraba/ Northern Region Country: Nigeria
Data accessibility	Data can be assessed through this link: <a href="https://data.mendeley.com/datasets/mcncpk97ys/1">https://data.mendeley.com/datasets/mcncpk97ys/1</a>
Related research article	Kehinde MO, Shittu AM, Adewuyi SA, Osunsina IO, Adeyolu AG. Land tenure and property rights, and household food security among rice farmers in Northern Nigeria. <i>Heliyon</i> . 2021; 7(2), e06110. <a href="https://doi.org/10.1016/j.heliyon.2021.e06110">https://doi.org/10.1016/j.heliyon.2021.e06110</a> [1]

## Value of the Data

- These data can be used to empirically ascertain how customary versus statutory rights of occupancy affects livelihood outcomes in view of the rising call for a review of the land use act in Nigeria and other developing countries with similar land tenure systems.
- The primary beneficiaries of the dataset include researchers, policymakers and advocacy teams who are dealing with land tenure and household food security issues.
- The dataset can be used to examine the relationship between land tenure and household food security with other socioeconomic variables by employing different econometric techniques.

## 1. Data Description

The dataset provides information on data collected from 475 household surveys on a wide range of issues, including the households' socio-economics, livelihoods, and land tenure and property rights on farmland cultivated during the 2016/17 farming season. The survey data include the following sections: (a) community characteristics; (b) household information of respondents including age, gender, ethnicity, highest education level among others (c) production resource use; (d) household welfare and livelihood outcomes. The questionnaire is provided as a supplementary file. Social-demographic characteristics are presented in [Table 1](#). Details of land

**Table 1**Socio-demographic characteristics ( $N = 475$ ).

Descriptions	Category	Frequency (475)	Proportion (%)
Age (Years)	Youth (18–35)	146	30.74
	Adult (36–60)	300	63.16
	Elderly (>60)	29	6.11
Gender	Male	441	92.84
	Female	34	7.16
Level of Education	No formal education	142	29.89
	Arabic	53	11.16
	Primary	75	15.79
	SSCE	92	19.37
	OND/NCE	57	12
	HND/BSc	54	11.37
	Masters	2	0.42
Household Size (Number)	1–5	82	17.26
	6–10	185	38.95
	Above 10	208	43.79
Farm Size (ha)	Less than 2 ha	333	70.11
	2–5 ha	105	22.11
	Above 5 ha	37	7.79
Simpson Index of Land Fragmentation	Consolidated	261	54.95
	Fragmented	214	45.05
Off - farm Activity	Participate	183	38.53
	Non-participation	292	61.47
State	Kaduna	80	16.84
	Kano	69	14.53
	Kebbi	24	5.05
	Nasarawa	39	8.21
	Niger	112	23.58
	Sokoto	87	18.32
	Taraba	64	13.47

tenure types, land titling and food security status among the farming households in Northern Nigeria are described in [Table 2](#). Similarly, the distribution of the households by local government areas, the summary of United States Department of Agriculture (USDA) - 18 Household Food Security (HFS) Questions for Households with Children, as well as, food security classification are presented in [Tables 3, 4](#) and [5](#), respectively. Datasets are provided as a supplementary file.

## 2. Survey Design, Materials and Methods

The data were collected from maize and rice farmers across the six geopolitical zones in Nigeria. The data addressed the issues of households' socio-economics, livelihoods, and LTPRs on farmland cultivated during the 2016/17 farming season [3]. This study makes use of the subset data obtained from the smallholder rice farmers in Northern Nigeria. The respondents were selected in a multi-stage sampling process stated as follows:

Stage I: Purposive selection of seven States that have been the leading rice producers in Northern Nigeria based on production statistics from NBS [2].

Stage II: Purposive selection of six Agricultural Blocks per State from the main rice-producing areas of the State, and two Extension Cells per block - that is, 12 Cells per State and 84 Cells in all.

**Table 2**

Distribution of respondents by tenure types, land titling and food security status.

Variable	Frequency (N = 475)	Percentage (%)
<b>Land Tenure Types</b>		
Inherited	293	62
Purchased	81	17
Leasehold	46	10
Communal	55	11
<b>Land Titling Status</b>		
Registered with Traditional Council	47	10
Registered with Local Government	32	7
Registered with the State	10.0	2
None	386	81
<b>Food Security Status<sup>1</sup></b>		
High Food Security	124	26.11
Marginal Food Security	141	29.68
Low Food Security	86	18.11
Very Low Food Security	124	26.11

<sup>1</sup>See Table 5 for the brief description of USDA Food Security Classification.**Table 3**

Distribution of the respondents by their respective local government area.

LGA	Freq.	Percent (%)
Agai	22	4.63
Awe	11	2.32
Bagwai	27	5.68
Bunza	7	1.47
Chikun	11	2.32
Dandi	12	2.53
Garun mallam	4	0.84
Gassol	21	4.42
Gbako	32	6.74
Giwa	7	1.47
Kajuru	35	7.37
Karim lamido	27	5.68
Katcha	17	3.58
Kebbe	37	7.79
Kudan	22	4.63
Kura	18	3.79
Lafia	28	5.89
Lavun	19	4
Lere	5	1.05
Mariga	7	1.47
Suru	5	1.05
Wamakko	49	10.32
Warawa	20	4.21
Wukari	17	3.58
Wushishi	15	3.16
Total	475	100

Stage III: Proportionate stratified random selection of six to seven rice farmers from the list of rice farmers in the selected cells.

This process yielded 475 households of rice farmers, from which the complete dataset was collected through personal interviews of the household heads and other farming members of their households.

**Table 4**

Summary of the USDA-18 household food security questions for households.

Questions/Statements	Food Security Categories (%)				
	HFS	MFS	LFS	VLFS	All
We were worried our food would run out before we got money to buy more	14	70	79	86	61
The food we bought just didn't last and we didn't have money to get more	06	65	79	94	60
We couldn't afford to eat balanced diet	10	83	87	94	68
We relied on only a few kinds of low-cost food to feed the children	11	78	83	94	66
We couldn't feed the children a balanced meal	09	73	72	94	62
The children were not eating enough because we just couldn't afford enough food	02	25	88	100	52
Did some adults ever had to cut the size of their meals or skip meals due to lack of enough money to buy food?	-	22	39	65	31
How often did this happen in the last 12 months?	-	22	39	65	31
Did some adults ever had to eat less than you felt you should eat because there wasn't enough money for food	03	32	76	89	48
Were some members ever hungry but didn't eat because you couldn't afford enough food?	01	22	61	89	42
Did some members ever lost weight within the last 12 months because there wasn't enough food?	02	23	68	96	46
Were there ever a time within the last 12 months that some adults could not eat for a whole day because there wasn't enough money to buy food	-	02	47	89	34
How often did this happen in the last 12 months?	-	-	42	92	33
Did you ever had to cut the size of some of the children's meals within the last 12 months because there wasn't enough money to buy food?	-	-	42	91	33
Did any of the children ever skip meals because there wasn't enough money for food within the last 12 months because there wasn't enough money to buy food?	-	01	36	76	28
How often did this happen in the last 12 months?	-	-	42	92	33
In the last 12 months, were the children ever hungry but you just couldn't afford more food?	-	02	50	82	32
In the last 12 months, did any of the children ever not eat for a whole day because there wasn't enough money for food?	-	01	43	71	28

Note: HFS = High Food Security; MFS = Marginal Food Security; LFS = Low Food Security; VLFS: Very Low Food Security.

**Table 5**

USDA food security classification.

Status	Number of Affirmative Responses	
	Households with children	Households without children
High Food Security	0–2	0–2
Marginal Food Security	3–7	3–5
Low Food Security	8–12	6–8
Very Low Food Security	13–18	9–10

USDA, 2016.

## 2.1. Measurement of household food security

Household food security (HFS) was assessed within the framework of the United States Department of Agriculture' (USDA) Survey Module. There are three items in the USDA HFS survey modules that ask about experiences of the entire household. Eight items ask about experiences and conditions of the children in the household and seven items ask about experiences and

behaviour of the adult members of the household. An affirmative response to each of these questions is score one while households that did not experience each of the food insecurity situations are scored zero. The scores are summed up across all questions to determine HFS Scores of a household. This could add up to a maximum of 18 for households with at least a child and maximum of 10 for households without children. Following USDA [4], Table 5 shows how households may be categorised into four distinct categories based on the HFS Scores. The categories include high food security, marginal food security, low food security, and very low food security.

## Ethics Statement

We agree upon standards of expected ethical behaviour for all parties involved in the act of publishing. Our paper presents an accurate account of the work performed and an objective discussion of its significance. Underlying data is represented accurately in the article. Each respondent was informed that his/her answers would be used as a part of a research project and agreed to that by filling in the questionnaire.

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships which have or could be perceived to have influenced the work reported in this article.

## CRediT Author Statement

**Mojisola O. Kehinde:** Conceptualization, Methodology, Data curation, Writing – original draft; **Adebayo M. Shittu:** Conceptualization, Methodology, Writing – review & editing; **Samuel A. Adewuyi:** Writing – review & editing; **Abigail G. Adeyonu:** Writing – review & editing.

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