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Access to Growth Enhancement Support Scheme's Inputs among the Dry Season Rice Farmers in Sokoto State, Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.

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Short Note

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ABSTRACT

This study examined the level of accessibility to GESS inputs among the dry season rice farmers in Sokoto State. Two hundred and fifty registered GESS farmers were randomly selected and data was collected using a structured questionnaire. Descriptive statistical tools were used to analyze the data. The result revealed that majority of the farmers fell between 30- 39 years, and 93.6% were married. With regards to farmers levels of education, 14.4% have primary education, 21.6% have secondary education, 14% with tertiary education, while 45.2% with Qur'anic education. Based on the findings, majority of the farmers have access to fertilizer (62.8%), improved seed (57.6%) and agro-chemical (55.6%). Majority (74.4%) of the farmers attributed registration with GESS programme as the major factor that determines access to GESS package. The identified key constraints to registered GESS farmers, were untimely supply of inputs, inadequate production inputs and manipulation of GESS register by agro-dealers. Therefore, for effective and sustainable GESS programme there is need for timely and adequate distribution of GESS inputs and GESS register should not be tempered with.

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1. INTRODUCTION

Agricultural inputs are common terms used for a range of materials which may be used to enhance agricultural productivity. Most important of these are fertilizer, improved seed and agro-chemicals. However, the use of these inputs remains low due to low input accessibility to farmers [1].

In order to unlock the agricultural potential of Nigeria and provide affordable production inputs to farmers, the Federal Ministry of Agriculture and Rural Development (FAMRD) embarked on a major transformation of the agricultural sector with the lunch of the Agricultural Transformation Agenda (ATA) in 2012. The programme is aimed at a proactive change in the practice of agriculture and its perception in the country. Under the programme, agriculture is being treated as a purely business oriented economy. The goal is to add 20 million metric tons of food on the domestic food supply and create 3.5 million jobs. The focus is in driving import substitution by accelerating the production of local staples, to reduce dependence on food imports and turn Nigeria into a net exporter of food [2]. One of the major achievements of ATA was the implementation of Growth Enhancement support Scheme (GESS).

GESS was designed for the specific purpose of providing affordable agricultural inputs like fertilizers and hybrid seeds to farmers in order to increase their yields per hectare and make it comparable to world standard. Under the scheme, registered farmers are notified of input allocation through short message service (SMS) alerts after which they are expected to pay 50% of the input price in an effort to redeem the inputs from the nearest agro-dealers. Under the scheme, the federal government subsidized fertilizer by 25% and the state government is expected to add another 25% subsidy so that farmers could purchase at N2750 per bag instead of between N5000 and N6000 which is the market price [3]. Nigeria has in 2013 registered over 14 million farmers with 330,523 of the total coming from Sokoto State [4].

The main objective of the study was to examine access to GESS inputs among the dry season rice farmers in Sokoto State. The specific objectives were to:

i. Describe the socio-economic characteristics of farmers in the study area
ii. Describe the factors that influence farmers' access to inputs from GESS
iii. Determine the level of accessibility of the inputs from GESS to the farmers
iv. Identify the constraints faced by the farmers regarding GESS.

1.1 Justification of the Study

One of the major problems affecting food production in Nigeria is the non-availability of sufficient inputs. In an effort to solve or reduce the problem to the bearest minimum, the federal government came up with a programme that is implemented nationwide aimed at providing inputs to farmers at affordable price through the growth enhancement support scheme of the Federal Government. The study therefore hopes to contribute to the existing knowledge on the modalities of inputs distribution particularly fertilizer and hybrid seeds. It is also expected that the findings of the study will go a long way in assisting the Federal Ministry of Agriculture and Rural Development in assessing the success and failure of the scheme particularly in the study area. The result will also be useful to policy makers in designing programmes that are of direct benefit to dry season rice farmers. The findings are expected to serve as reference materials to researchers and provide avenue for further researches.

1.2 Scope and Limitation of the Study

The study concentrated in local government areas with highest number of registered GES farmers where dry season rice farming is practiced. Only five local government areas were selected due to human and material limitations.

Another limitation encountered during the research was researchers' inability to adopt proportionate sampling due to large number of registered farmers in the study area. Silame local government was highest with 22,250 registered GES farmers followed by Wurno local government with 14,000 registered farmers. Goronyo local government has 12,621 registered farmers; Tambawal local government has 11,100 registered GES farmers while Binji Local government being the least has 8,500 registered farmers [5]. However, the researcher reduced this limitation by selecting 50 respondents

randomly, from each of the selected local government areas.

2. Methodology

2.1 The Study Area

The study was conducted in Sokoto State. Sokoto is located in the extreme North West of Nigerian, near to the confluence of the Sokoto Rima River. It is located between latitude 11^{o} 00` and $14^{o}$ 00`N and longitude 3^{o} 50` to $8^{o}$ 00`E.Rainfall is highly seasonal. The average rainfall is about 550 mm per annum .Daily maximum temperature is about 36^{o}C. During the harmattan season, daily minimum temperature falls below 17^{o}C, temperature reaches the highest of 44^{o}C. Range of temperature is generally high. Relative humidity is between 15-20% during the dry season and up to 70-75% during the rainy season [6].

The State has a projected population of 4,850,374 at 3% population growth rate [7]. The State shares common border with Kebbi State to the South-East, Zamfara State to the East and Niger Republic to the North. It is basically an agrarian society with over 90% of the population involved in agriculture. In terms of vegetation, the State falls within the Savannah zone. Rainfall starts late and ends early, the dry seasons start from October and lasts up to April in some parts and may extend to May or June in other parts. The wet season on the other hand begins in most parts of the State in May and lasts up to September or October.

Table 1. Sample Frame

Number of LGAs in Sokoto state	Selected LGAS	Number of GES registered farmers	Sampled villages	Number of respondents	Sample size
23 LGAs	Goronyo	12621	Goronyo	10	
			Taloka	10	
			Birjingo	10	
			Gorau	10	
			Keta	10	
	Silame	22250	Jekanadu	10	
			Silame	10	
			Maje	10	
			Gittarana	10	
			Kubodu	10	
	Wurno	14000	Lugu	10	
			Wurno	10	
			Gidan Bango	10	
			Dimbiso	10	
			Kwargaba	10	
	Tambawal	11100	Tambawal	10	
			Kaya	10	
			Romon Sarki	10	
			RomonLiman	10	
			Jabo	10	
	Binji	8500	Gawazzai	10	
			Inname	10	
			Binji	10	
			Soro Yamma	10	
			Soro Gabbas	10	250

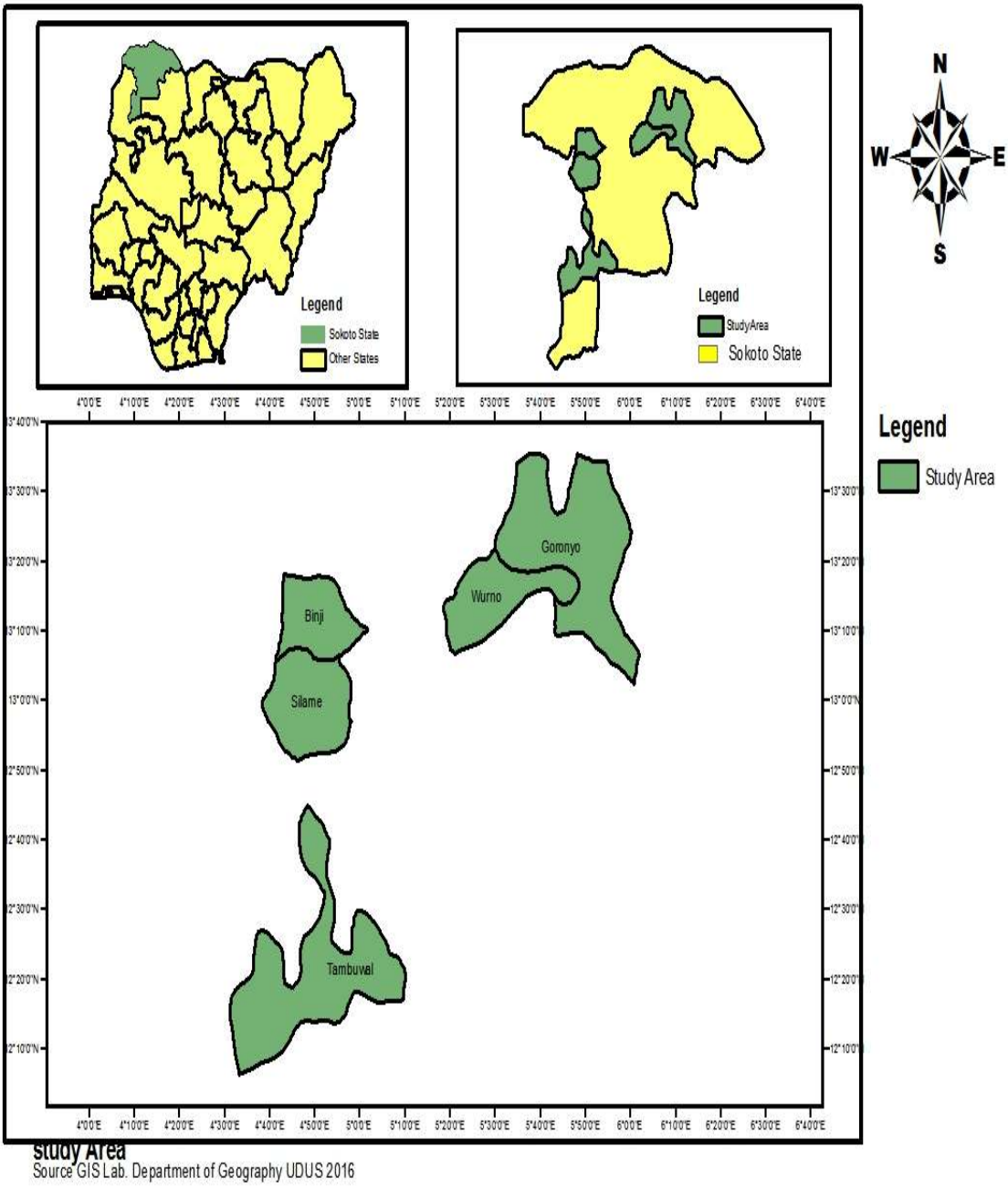

Fig. 1. Map of Sokoto State Showing Study Local Government Areas

2.2 Sample Procedure and Sample Size

The population of the study includes all dry season rice farmers participating in the GESS intervention programme in the 23 local government areas of Sokoto State. The study adopted a multi-stage sampling technique. Five local government areas with the highest number of GESS farmers were randomly selected. The second stage involved the random selection of five (5) villages from each of the local government areas selected. The third stage was the selection of ten (10) GESS farmers from each of the villages. This gave a total of fifty (50) farmers from each of the local government areas selected constituting 250 farmers for the study. A

well-structured questionnaire was used to collect information from the farmers. Information was collected on their socio economic characteristics, factors influencing farmers access to GESS inputs, level of accessibility to GESS inputs by the farmers and constrained faced by the farmers regarding GESS.

The data collected were analyzed using descriptive statistical tools such as frequency counts and percentages.

3. RESULTS AND DISCUSSION

3.1 Socio-economic Characteristics of Farmers

Table 2 presents the socio-economic characteristics of the sampled farmers. Majority of GESS farmers (30.8%) were within the ages of 30-39. Only 6.8 percent were above 60 years old. The mean age was established as 40.7 years. This is fairly youthful age which can spur inquisitiveness to participate in agricultural extension programmes. Low number of farmers for age group above 60 is likely caused by retirement from agricultural activities or delegation of production activities to young family members. The result is in agreement with [8] who reported the most productive age to be in the range of 20-50 years.

Average household size was nine (9 persons) members. Majority of the farmers (98.4%) were males with an average of 10 years of farming experience. Similarly, majority of the farmers had attain both formal and informal education in the order of 14.4%, 21.6%, 14% and 45.2% having primary, secondary, tertiary and Qur'anic education respectively. Education was key to enhanced productivity among farming households [9] and in the adoption of an innovation by a farmer [10].

Table 2. Distribution of farmers according to socio-economic characteristics

Variable	Frequency	Percentage	Mean	SD
Age (Years)				
20-29	41	16.4		
30-39	77	30.8		
40-49	65	26		
50-59	50	20		
60 and above	17	6.8	40.7	11.2
Total	**250**	**100**		
Level of education				
Primary education	36	14.4		
Secondary education	54	21.6		
Tertiary education	35	14		
Adult literacy	12	4.8		
Qur'anic education	113	45.2	8.85	4.53
Total	**250**	**100**		
Household Size				
1-9	127	50.8		
10-18	92	36.8		
19-27	24	9.6		
28 and above	7	2.8	10.3	19.2
Total	**250**	**100**		
Farming Experience (Years)				
2-12	84	33.6		
13-22	81	32.4		
23-32	53	21.2		
33-42	28	11.2		
43-52	4	1.6	19.2	10.8
Total	**250**	**100**		

Source: Field Survey, 2016

3.2 Factors that Influence Farmers' Access to GESS Inputs

Table 3 shows the distribution of farmers according to factors influencing access to GESS inputs. Result of the study revealed that majority (74.4%) of the farmers identified registration with GESS programme as the major factor that determines one's access to GESS inputs. 28.8 percent reported that political inclination was a factor that determines their access to GESS inputs, while 24.4 percent of the farmers reported to have access to GES inputs based on their purchasing power.

Table 3. Distribution of farmers according to factors that determine access to GES inputs

Factors	Frequency	Percentage
Farm size	52	20.8
Farmers' purchasing power	61	24.4
Political inclination	72	28.8
Membership of farmers 'group	53	21.2
Registration with GES programme	186	74.4
Total	424*	

**Multiple responses*

3.3 Levels of Farmers Accessibility to GESS Inputs

Agricultural inputs are a common term used for a range of materials which may be used to enhance agricultural productivity. Most important of these are fertilizer, improved seed and agro-chemicals. However, the use of these inputs remains low due to low input accessibility to farmers [11]. Table 4 indicate that majority (62.8%) of the farmers had access to fertilizer though not sufficient. This is because the allocation giving through the programme is not enough. 29.6 percent of the farmers reported to have access to sufficient fertilizer and only 7.6 percent stated that fertilizer was not accessible to them. This could be as a result of long queue during redemption or perhaps due to lack of money at the time of input distribution. Similarly, the study also found that improved seeds and agro chemicals were accessible to 57.6 percent and 55.6 percent of the farmers, respectively. 32% of the farmers indicate that they had access to improved seeds sufficiently, while 29.6 percent reported that agro-chemicals were also sufficiently accessible. Improved seeds and agro-chemicals were however not accessible to 10.4 percent and 14.8 percent of the farmers, respectively.

3.4 Constraints Faced by Farmers Regarding GESS

There were appreciable numbers of GESS farmers in the study area. However, there were problems affecting them regarding GESS programme that could have an effect on their output. The identified problems were presented in Table 5.

Table 4. Distribution of farmers according to the level of input accessibility

Inputs	Fertilizer		Improved seed		Agro chemical	
Accessibility	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Not accessible	19	7.6	26	10.4	37	14.8
Accessible	157	62.8	144	57.6	139	55.6
Sufficiently accessible	74	29.6	80	32	74	29.6
Total	250	100	250	100	250	100

Table 5. Distribution of farmers according to constraints faced regarding GES programme

Problem areas	Frequency	Percentage
Inadequate production inputs	80	32
Untimely supply of inputs	89	35.6
Manipulation of register by agro dealers	53	21.2
Most registered people were not farmers	42	16.8
Lack of financial and material support	22	8.8
Communication gap	17	6.8
Early closure of input distribution	15	6
Total	381*	

**Multiple responses*

One of the stated goals of GESS was to ensure timely, effective and adequate supply of agricultural inputs to GESS target farmers in the form of fertilizer, chemicals and hybrid seed. However, timely delivery of GESS inputs has been a longstanding constraint, despite persistent calls by farmers to correct this problem. From the study, result shows that 35.6 percent of the farmers identified untimely supply of inputs as the major constraint regarding GES. The result obtained from GESS farmers indicates that farmers were still receiving fertilizer very late, sometimes use inputs meant for rainy season in dry season.

In 2012, when GESS was introduced, the beneficiaries were entitled to 2 bags of 50kg fertilizer and 20kg bag of hybrid seed; quantity which most farmers considered inadequate, considering their farm size. This might be the reason why 32 percent of the farmers indicated inadequate supply of inputs as a constraint.

[12] reported that, when GESS was introduced, a major criticism was that many beneficiaries were unable to redeem their inputs due to GSM network failure or an absence of it in many remote areas. To solve the problems of poor mobile phone network, multiple registration, corruption and easy inputs redemption process, the FMARD, in collaboration with IFDC, introduced a new technology known as GESS Touch and Pay "GESS TAP" for farmer's registration. The GESS Touch and Pay (TAP) is an offline technology that captures the data of farmers along with their photographs, and at the end of the registration exercise, a green card is issued to the registered farmers which can be used in redeeming subsidized inputs [13]. But, findings from this study shows that 21.2 percent of farmers' alleged manipulation of register by agro dealers in conniving with some farmers to collect their TAP card, redeem the inputs and give a token to farmers, and later sell the inputs at market price.

Immediately after the launch of the programme, registration exercise commenced in almost all wards (Registration areas) across the country. This gives room to people who were not genuine farmers to register and obtained the TAP card. This constituted a problem as reported by 16.8 percent of the GES farmers in the study area.

6.8 percent of the farmers complained about lack of financial support which would help in boosting their production. They said, sometimes when inputs are brought for redemption, they don't have money to pay for the inputs. Because of that, they give their cards to others who have the means to collect their allocation.

The generation of appropriate and relevant technologies as well as the dissemination and eventual acceptance of such technologies by farmers has been a great concern [14]. To this end, the communication gap that exist between GES target farmers and agro dealers is worrisome, as such 6.8 percent of the farmers complaint of having received adulterated seeds and fertilizer with no means of feedback to report their plight.

Early closure of input distribution was another constraint faced by GES target farmers as indicated by 6 percent of the farmers. Farmers sometimes have to travel to a far distance to redeem allocated inputs, and on getting there, they do find out that input distribution was closed or finished.

4. CONCLUSION AND RECOMMENDA-TIONS

From the study, it could be concluded that GESS target farmers have access to GESS inputs and therefore the programme is promising, and if sustained properly, the goal of the programme can be achieve and agricultural production can be enhanced in terms of the output of the fry season rice farmers in the study area.

Based on the findings, the following recommendations are made:

1. Inputs should be delivered to farmers before the planting season commences
2. GESS register should be made available and accessible to all registered farmers so as to avoid manipulation
3. Farmers should be enlightened not to sell their Touch and Pay cards for a token.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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