

Information Needs of Lima beans Farmers for Commercial Production in Oyo State, Nigeria

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Abstract: *The information needs of Lima beans farmers for commercial production in Oyo State was investigated. Multi-stage sampling procedure was used to select 134 respondents in the study area. A structured questionnaire was used to collect data on respondents' characteristics, information needs on Lima beans, information source, and constraints in commercial production of Lima beans. Data were analysed using descriptive and inferential statistics. Results showed that majority (73.5%) were between the ages of 51 and 70 years, male (88.9%) and larger percentage (55.9%) did not have formal education. The major areas where farmers needed information were credit and input sources ($\bar{x}=1.91\pm0.28$), weather forecast ($\bar{x}=1.88\pm0.32$) and value addition and processing ($\bar{x}=1.79\pm0.31$). Majority of respondents sourced information from fellow farmers ($\bar{x}=1.64\pm0.34$) and radio ($\bar{x}=1.00\pm0.24$). The major challenges confronting farmers on commercial production of Lima beans were climate related issues ($\bar{x}=1.52\pm0.28$), lack of improve seed ($\bar{x}=1.50\pm0.26$) and limited access to credit ($\bar{x}=1.41\pm0.28$). There was a significant relationship between respondents information needs and their house hold size ($(X^2=13.71, P=0.002)$). The need for farmers to have access to timely technological information and credit sources cannot be over emphasized, it is therefore recommended that government and relevant agencies should strengthen extension service and make provision for a low interest loan without collateral to farmers who grow Lima beans.*

Keywords: Lima beans, improved seed, information, value addition

INTRODUCTION

Recent development portends that the analysis of food insecurity especially adequate nutrition need to be carried out in a dynamic and more comprehensive context. The myopic focus on cowpea and soybean as the major vegetable source of protein in the diet especially in Sub-Sahara African countries must be reconsidered for sustainable livelihood of the farm families and improved nutrition of the ever increasing population. Attempts to focus on technology generation and dissemination of the underutilized Legumes such as Lima bean (*Phaseolus lunnatus luna*), would be a right step in the right direction and additional

efforts towards strengthening the new agricultural transformation programmes in Nigeria. Generally, underutilized Legumes have potentials for contributing to food security if their salient advantages are exploited. The underutilized Legumes crops such as Lima bean, due to their rich nutritional profile, high adaptability to adverse climatic conditions and ability to grow in poor soils, are highly advantageous for sustainable cultivation. Intense agronomic, genetic and applied research is required to move this crop out of obscurity and to use its potential as cash crop. Equally important is the fact that Lima beans provide economic benefits for farmers. Due to its resilience to drought, poor soil and weather conditions, underutilized Legumes like Lima beans may also help to stem the decline in food crop production caused by climate change (Elizabeth et al., 2025). One of the underutilized Legumes to be focused on is Lima bean (*Phaseolus lunatus* L.). There is a need to make stronger, the gains and propose a strategic way of translating Lima beans into main stream agriculture (Okigbo and Anyaegbu, 2021). Lima beans originated from Peru (Okoye et al., 2024). It is an herbaceous species with a short annual or short-lived perennial life cycle (Lustosa-Silva et al., 2022). It is usually intercropped with vegetables in the tropics or planted after maize harvest in mixed cropping systems (Chamkhi et al., 2022).

Lima beans is the second most economically important of the species of *Phaseolus* and is one of the 12 mostly used Legumes in the World (Ogungbemi 2022). It is an annual or short-lived perennial pulse species, widely cultivated in both temperate and subtropical regions (Yeboah et al., 2021). Its cultivation in Africa spans through a wide range of ecological conditions viz warm temperate zones, arid and semi-arid tropical regions (Ogungbemi, 2022). Lima beans are usually cultivated for their edible seeds. Lima beans are commonly consumed among the rural dwellers of Yoruba land (Southwestern Nigeria) and Igbo land (Southeastern Nigeria), where it is called “kapala” and “ukpa” respectively (Adebo et al., 2023). It can either be consumed solely or cooked in combination with cereals, such as rice or tuber such as yam (Messou et al., 2023). Lima beans can also serve as substitute for the expensive soy meal and groundnut meal which constitutes the major portion of conventional protein sources used in composite livestock feeds (Mohidem, 2022). It differs in size, shape and colour, as the shape can be spherical, curve or kidney, while colour ranges from green to creamy white, grey, light brown and dark brown with a starchy flavor (Messou et al., 2023). Lima beans possess good nutritional profile being a good source of minerals, dietary fibres, carbohydrates and proteins but, it is low in fat (Ogungbemi, 2022).

Lima beans is an important source of protein for rural populations in South America and Africa (Temegne et al., 2024). In Nigeria, it remains an underutilized Legumes cultivated for its dry seeds and soil fertility restoration attributes (Anders et al., 2020). No variety of the crop has been released as a certified seed, hence only landraces in gene banks and farmers’ hands are available.

Lima bean is a pulse crop normally grown for its enlarged seeds and cultivated mainly for its immature and dry seeds (sherpa 2023). This bean has protein (7.8g-100) and vitamins which, in rural areas of developing countries, can alleviate malnutrition. Dried bean seeds can be canned, according to Borderías et al. (2020). In addition, it can be grilled, boiled and even fried in oil. The large pods and leaves are eaten in Ghana and Malawi as vegetables (Nasidi et al., 2021). According to Kapari (2023), previous studies revealed relatively high labor input for staking. Weak agronomic practices, high

labor costs, lack of high yields, insufficient knowledge of training practices and equipment, and improper application of fertilizer are factors responsible for low yields in Lima bean production.

To achieve this, research must concentrate on the development of adaptable and adoptable technologies aimed at improving the genetic potentials, yield adaptation and nutritional quality of the underutilized Legumess. Adequate dissemination of information to farmers at the grassroots level, therefore, would not only create the awareness of the need for change but would also explore all avenues and methods of production so that desired change is achieved (Amusat and Oyedokun, 2018). The need to determine information need of farmers as regards their agronomic practices must be taken into consideration. This will go a long way in determining the focus of research and extension in order to enhance the adoption of the technology generated and consequently increase the production of Lima beans.

METHODOLOGY

The study was carried out in Oyo State. Oyo State is one of the six states in Southwestern Nigeria. Multi-stage sampling procedure was used in the study. According to the Oyo State Agricultural Development Programme, Oyo State is divided into four agricultural zones. Out of the four zones, Saki zone was purposively selected. Saki zone is a major food producing hub for the State. It is predominantly a savannah agro-ecological zone with fertile soils and longer rainy season, which supports crops like maize, yam, cassava, cowpea, sorghum and Lima beans. Livestock production, especially cattle, sheep and goats, is also prominent due to the available grazing land. This zone was one of the enclaves where Agricultural Development Programme began its operations in Oyo State in the early 80s. Two Local Governments, Kajola and Iwajowa were also purposively selected because of the intense production of Lima beans in the area. Furthermore, two communities that had the highest number of farmers producing Lima beans were also purposively selected from each local government making a total of four communities that were used for the study. Elekokan and Ayatoro were selected in Kajola Local Government while Ijio and Idiko Ago were selected in Iwajowa Local Government. Thirty-four (34) farmers were randomly selected from each community making a total of one hundred and thirty-six (136) farmers that were used in the study. A structured questionnaire was used to collect data from sampled farmers. The questionnaire was designed to elicit information on respondents' characteristics, information needs on Lima beans, information source on Lima beans and constraints in commercial production of Lima beans.

Measurement of variables: The objectives were operationalized as follows: Respondents' characteristics were measured at appropriate level. Information needs of Lima beans farmers was measured using a three-point scale of Not important (0), Less important (1) and Very important (2). Information source on Lima beans for farmers was measured using a three-point scale Always (2), Seldomly (1) and Never (0). Lastly, constraints of farmers in commercial production of Lima beans was measured with a 3 point scale of Very serious (2), Mild (1) and Not a constraint (0).

Data analysis: Data analysis (percentages, mean scores and standard deviation) was done using Version 21 of the SPSS software.

RESULTS AND DISCUSSION**Socioeconomic Characteristics**

Variables	(%)	Mean	Standard Deviation
Age		52.582	2.13
Less or equal to 30	(3.0)		
31 – 50	(23.5)		
51 – 70	(73.5)		
Sex			
Male			
Female			
Household Size		4.9412	1.32
1 – 3	(8.8)		
4 – 6	(88.2)		
7 – 9	(3.0)		
Formal Education			
Yes	(44.1)		
No	(55.9)		
Highest Educational qualification			
None	(58.8)		
Primary school	(11.9)		
Secondary school	(14.7)		
HND/BSc.	(14.7)		
Postgraduate	(0.0)		
Others	0 (0.0)		
Major occupation			
Farming	(85.3)		
Trading	(5.9)		
Artisan	(2.9)		
Public service	(5.9)		
Clergy	(0.0)		
Other	0(0.0)		
Years of farming experience			
1-5 years	(5.9)		
6 – 10 years	(0.0)		
11 – 15 years	(52.9)		
16 – 20 years	(41.2)		
Contact with extension agent			
No	(85.3)		
Yes	5(14.7)		
Frequency of contact			
Fortnightly	(0.0)		
Quarterly	(14.8)		
Once in one year	(85.2)		
Years of Lima cultivation			
Less than 5 years	(5.9)		
6 – 10 years	(2.9)		
11 – 15 years	(61.8)		
16 – 20 years	(29.4)		

Above 20 years	(0.0)
Farm size under Lima bean production	
1 – 2 acres	(76.4)
3 -5 acres	(5.88)
6 – 8 acres	(17.60)
9 – 11 acres	(0.0)
Above 12 acres	(0.0)
Sources of planting materials	
Own saved seed	(85.3)
Neighbor	(11.8)
Markets	(2.9)
Research Institute ADPs	(0.0)

Socio –Economic Characteristics

The socio-economic characteristics of respondents are presented in Table1. The majority of farmers were between the ages of 51 and 70 years (73.5%). This shows that farmers who grow Lima beans in the study area were becoming aged and may not be able to cultivate large hectarage of Lima beans due to their declining strength. This amplifies the reason why Lima beans are not available in the market in large quantity. On sex of the respondents, the table reveals that majority of farmers were male (88.9%) while only 11.1% were female. This shows that Lima beans production is male dominated. This echoes Ragasa et al. (2025) who similarly highlighted low agricultural participation of female across Africa especially in underutilized Legumes farming. The average family size of farmers in the study area is 4.94 ± 1.32 . This shows that farmers in the area have a fairly large family size. Having a large family size portends that there will be more hands available as source of labour for the farm enterprise. Adeyemo and Oladoja (2021) in their study reported that majority of the farmers had house hold size of 5.0. On educational attainment of the respondents, the table revealed majority of respondents (55.9%) did not have any type of formal education which is a testament to the fact that farmers who grow Lima beans are highly indigenous who do not seek improved technologies for enhanced productivity on their farm. Among those that were educated only 14.7% had HND/B.SC and none of the respondents had postgraduate qualification. Majority of the respondents had farming as their major occupation; this is not unexpected as the study took place in an agrarian community where all the inhabitants practiced farming. Most of the respondents (85.3%) never had contact with extension agents while only 14.7% of the respondents claimed that they have had contact with extension agents and majority (85.2%) of those that had contact affirmed that the contact is once in a year. This points to the fact that public extension service is almost non-existing in the study area and even in the state where the study was carried out. Larger percentage (61.8%) and (76.4%) had between 11 and 15 years of Lima beans production experience and cultivate between 1-2 acres respectively. Majority of the respondents (85.3%) sources their planting materials from their own saved seed. According to De Boef etal 2025, farmers' reliance on saved seed remains widespread across Nigeria; it illustrated that for groundnut, Lima beans and cowpea, the farmer either saves own seed or obtains them from organized farmers' groups within the community.

Information Needs

Variables	Mean	Standard Deviation
Improved varieties	1.67	0.58
Planting methods and spacing	0.64	0.59
Fertilizer & Soil health	0.58	0.55
Weed control	0.11	0.32
Harvesting and post-harvesting management	0.73	0.51
Pests and diseases management	0.55	0.26
Value addition & processing	1.79	0.31
Market prices and outlets	1.64	0.48
Credit & input sources	1.91	0.28
Weather forecast	1.88	0.32

Data on Table 2 concerning the information needs of farmers revealed that major areas where farmers needed information were credit and input sources ($\bar{x}=1.91\pm0.28$), weather forecast ($\bar{x}=1.88\pm0.32$) and value addition and processing ($\bar{x}=1.79\pm0.31$). Credit and input sources are very crucial to agricultural production in Nigeria because they determine whether a farmer can move from subsistence to profitable farming. This is in line with Osabohien et al (2020) who posited that credit is needed by farmers to enhance their productive capacity and efficiency in agriculture. Weather forecast help farmers to plan ahead, it helps them to know when rain will start and stop so as to avoid planting in dry spell or harvest during downpours. Value addition and processing are important to Lima beans farmers because they help to increase their income, reduce losses, and expand access to market. According to Daily Trust of September, 2026, farmers in Nigeria that are using NiMet weather information or forecast recorded a 9.4% increase in yield. According to Ajibade et al, (2023), adding value and processing of Lima beans raises income, cut losses and makes beans safer. On the contrary, areas where farmers need least information on Lima beans production were, weed control and harvesting ($\bar{x}=1.93\pm0.32$), pest and disease management ($\bar{x}=0.55\pm0.26$) and fertilizer and soil health ($\bar{x}=0.58\pm0.26$). This may be due to the fact that majority of the respondents were highly experienced farmers who had been cultivating Lima beans over years and familiar to these agronomic practices and also Lima beans is a leguminous crop which may not necessarily require fertilizer, thereby information may not be needed in these areas.

Information Sources

Information	Mean	Standard Deviation
Extension agent/ADP	0.52	0.50
Radio	1.00	0.24
Television	0.14	0.25
Fellow farmers	1.64	0.34
Social media	0.20	0.37
Research institute	0.84	0.28
Input dealers	0.62	0.38
NGOs	0.67	0.47
Others		

Table 3 reveals that majority of respondents sourced information for the production of Lima beans from fellow farmers ($\bar{x}=1.64\pm0.34$) radio ($\bar{x}=1.00\pm0.24$) and research institute ($\bar{x}=0.84\pm0.28$). Alabi et al, (2016) affirmed that fellow farmers and radio were ranked as the most preferred sources of information by cashew farmers in a study conducted in Oyo State. Fellow farmers remain the most accessible and trusted source of information to Lima beans farmers in the study area because they share the same agroecology, crop cycle and market challenges. Radio remains one of the most widely used media sources for farmers especially in rural areas its key advantage is wide reach and accessibility. Research Institutes such as IAR&T, IITA and Stored Product Research Institute are critical sources of scientifically validated information to Lima beans farmers because research on Lima beans as a food crop is one of their mandates. These institutes generate and disseminate information on improved varieties, agronomic practices, pest and disease management strategies, and the processing methods especially those that address the crops' anti-nutritional factors. The least sources of information on Lima beans used by respondents in the study area were television ($\bar{x}=0.14\pm0.25$) and social media ($\bar{x}=0.20\pm0.37$). These sources of information were rarely used by farmers because of lack of electricity in village, the low educational level of respondents and complexity in operation of social media tools.

Challenges

Challenges	Mean	Standard Deviation
Weak extension service	1.00	0.20
Lack of improved seed	1.50	0.20
Pest & disease problem	0.50	0.26
Lack of required information	0.70	0.27
Soil fertility issue	0.82	0.27
Limited access to credit	1.41	0.28
Climate related issues	1.52	0.28
Poor agronomic knowledge	0.58	0.29
Weak market linkage	0.88	0.34

The major challenges confronting farmers on commercial production of Lima beans were climate related issues ($\bar{x}=1.52\pm0.28$), lack of improve seed ($\bar{x}=1.50\pm0.26$) and limited access to credit ($\bar{x}=1.41\pm0.28$). According to Martinez-Nieto et al 2022, drought is one of the most important problems in agriculture as it leads to reduce yields and loss of crops. IITA (2025) concluded that improved seed system remain critical to addressing food insecurity in Nigeria. Variables such as pest and disease ($\bar{x}=0.50\pm0.26$), poor agronomic knowledge ($\bar{x}=0.58\pm0.29$) and soil fertility issue ($\bar{x}=0.82\pm0.27$) were not regarded as serious challenges to farmers due to the fact that majority of the respondents were highly experienced in the production of Lima beans and might have been exposed to useful technological information from more experienced fellow farmers, radio and Research Institute. Lima beans production in Nigeria faces several interconnected challenges that limit output and farmers' income. Erratic rainfall, droughts, floods and heat waves cause crop failures and poor harvest timing in Lima beans production. Improved seed is the foundation for higher agricultural productivity. It is a low cost way to increase food security, income and resilience to climate stress.

Relationship between selected socioeconomic characteristics and information needs of the respondents**PPMC**

Variable	r-value	X²	p-value	Decision
Age	-0.170	-	0.336	Not significant
Household size	0.214	-	0.002	Significant
Marital status	-	13.71	0.881	Not significant

The above table reveals that significant relationship existed between information needs of farmers and their household size ($X^2=13.71, P=0.002$). This finding underscore the importance of household size among farmers, that the more the household size, the more farmers struggle to seek useful and technological information to improve his farm business for enhanced production and profitability so as to

meet his family obligations. The table further reveals there were no significant relationships between age, marital status of farmers and their information needs.

CONCLUSION AND RECOMMENDATIONS

Production of Lima beans is dominated by fairly aged male with about 11-15 years of farming experience who ultimately relied on own saved seed as planting materials. Their major information needs were credit and input sources, weather forecast, processing, and value addition. These needs were mostly sourced from fellow farmers, radio and research institutes and the constraints to commercial Lima beans production were climate related issues, lack of improved Lima beans seed and limited access to credit. It is therefore recommended that loan at low interest rate without collateral, certified and climate change adaptation strategies need to be disseminated to farmers who cultivate Lima beans.

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