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Examining the Prospect of Onion Production in Jere Local Government Area, North East, Borno State Nigeria

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Abstract: The study examine the prospect of onion production in jere local government with a view to analysis the Importance of Onion Production in the Nigerian Economy, Data were collected through primary and secondary data. The study makes use of sampling techniques random sampling for selecting the study area, a systematic random sampling technique was used in the administration of questionnaires to the study area and the questionnaires were administered to the community in relation to population size. A total of 60 questionnaires were distributed, out of which the whole 60 were return successfully. And it was analyzed using simple statistics and bar chart. The findings reveal that male engage in Onion farming more than female, In terms of age pattern result indicates that majority who engage in Onion farming are between the age of 31-40 years of age which they constitutes about 35% out of the total respondents. The married constitute about 75% while the single ones constitute only 25%. This indicate that married respondents engage in farming due to family responsibilities than the single ones. There is a need for more attention to be given in other to ensure effective onion farming in the study area. Government should provide adequate fund, support to the farmers so as to enhance the provision of more and better yield of Onions, Public awareness should be done on the prospect of onion cultivation so as to motivate the farmers to give good output and also give clarification on how to overcome the challenges involves in the cultivation of onion and provision of all the necessary equipment that is best used in the cultivation of Onions.

Keywords: Onion, Farmer, Family, Maiduguri, Jere.

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1.0 Introduction

Onion (*Allium cepa L.*) is believed to have originated in the near east in an area which includes Iran, Afghanistan and West Pakistan. It has been grown in the West African savanna for a very long time for both food and cash (Kassam, 2011). According to the United Nations Food and Agriculture Organization estimates, there are seven million acres of land in the world producing over 37 million tons of onions each year. Onion is produced in almost 170 countries of the world. Pakistan has been on the list of the leading onion producers of the world. China ranks first in the world with respect to onion production followed by India, USA, Turkey, Pakistan, Iran, Indonesia, Vietnam and Myanmar (Kabir, 2007). Onion (*Allium cepa L*) is a vegetable crop belonging to the family *Liliaceae* (Alabi and Adebayo, 2008).

In Nigeria production is concentrated in the north, more especially in the dry tropical zone. In this light, the greater part of onion production in Nigeria is undertaken specifically in Kaduna, Kano, Jigawa, Katsina, Sokoto, Kebbi, Plateau and Bauchi States. (Anyanwu, 2003) The natural features of these regions, especially the presence of flood prone plain and river basins and above all the development of vast irrigated lands, create conditions that greatly favour the development of this crop. Onions needs drained soil adequately supplied with humus, alluvial types of soil, well-drained fertile loam and most sandy rich in humus. The soil which onion is planted must be capable of retaining moisture during the dry season because there is the need for high organic matter content in the soil (Anyanwu, 2003).

Onion (*Allium cepa L.*) is a vegetable crop grown almost all over the world. It is grown mainly for its bulb, which is used in every home almost on daily basis. It is rarely used as a sole dish or in large quantities. Its main use lies in flavouring and seasoning of a wide variety of dishes, which is due to its aromatic, volatile oil which gives a cherished flavour to food. As a constituent of a meal both the green leaves and bulbs can be eaten raw, cooked in soups and salads. Onions has an important role as a medicinal herb in many communities and is claimed to minimize high blood pressure and other heart diseases due to its favorable action on the elasticity of blood vessels

Onion (*Allium cepa L.*), is a vegetable crop grown almost all over the world. In 1987, the total world export production amounted to over 2.0 million metric tonnes and worth over 299 million US dollars (46,943,000,000 naira) (NAERLS, 2010).But due to the oil boom era which began in 1973, agriculture including onion production have been neglected. Although onion has been grown in Nigeria for a long time, the yield is still very low compared to other regions of the world. The reason for this is because improved production practices based on research findings have not been adequately adopted by the farmers. Preliminary investigation indicate that there challenges of insecurity which limit the production of onion in the study area.

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1.1 Importance of Onion Production in the Nigerian Economy

Onion is consumed in different ways by different people and forms an essential part of the traditional daily diet. It is a major spice item and ranks among the top 5 vegetables in Nigeria (NIHORT, 2006). It can be eaten raw in salad, fried, boiled or roasted, and also used in flavoring soups, canned food products and other savoury dishes it is used in every home virtually on daily basis (Hussaini *et al*., 2009). The bulb is used traditionally as a medical herb for the treatment of measles, pneumonia, cold and catarrh recent studies have confirmed that onion helps in fighting Osteoporosis or bone loss (Biochemist, 2005). Onion production is a viable industry that employs plenty labour and the bulbs are traded in large quantities within and between countries of the world (Currah and Proctor, 2004).

Despite the ranking of onion as the second most important vegetable in Nigeria, the present production levels do not meet the demand of the teeming populace (Ayodele, 2006). Limited changes in the traditional production practices may still be lagging behind the national demand (Denton and Ojeifo, 2007) though the consumption of onion cuts across the country, its major area of production is in the northern part of the country, restricted to Fadama areas, and grown mostly during the dry season under irrigation. Similarly, the production level at present is below the optimum realized for other countries. For example, while it is 45tha-1 in India, it is just 15 t ha-1 in Nigeria (FAO, 2005).

1.2 Prospects of Onion Production in Borno State

Onion play very important role in the diet of human. The consumption of Onions as a cheap source of minerals and vitamins to supplement people's diet cannot be over emphasized. They help in protecting body against diseases. Almost all Onions are low in fat and calories and many of them are good sources of fibre. The high level of fibre in Onion keeps the digestive system healthy and prevents constipation. Onion production also serves as sources of livelihood for small scale farmers, create employment opportunities for the populace, generate income and reduce poverty.

Borno is one of the Onion producing State in Nigeria. In the past, it was found to be producing below major Nigerian producing State, but currently there is improvement in the production level. Borno State is one of the States where Onion production is highly practiced. Production of Onion is largely carried out during dry season under irrigation condition, although it is also grown under rain fed agriculture. About 10,000 hectares of land is devoted to Onion cultivation in Borno State (BOSADP 2004).

The onion crops commonly grown in Borno state include onion, tomato, pepper, okra, egg-plant, amaranthus, sorrel, lettuce, cabbage and carrot. Most of these are grown as mixed crops especially onion, tomato and pepper, amaranthus and sorrel, cabbage and lettuce and so on. An average yield of about 15.25 tonnes per hectare of Onion, were reported to be produced in the State. Production of Onion in the State is still at small-scale level, in spite of its economic growth potentials. Studies involving farmers efficiency and productivity measure could be sound bases for harnessing the growth potentials in Onion farming.

Works on onion production were done by various scholar waziri 2005, Kabir 2007, FAO 2005 but known much finding in area of onion prospect in Nigeria especially in the north eastern part base on this the research will examine the prospect of onion production in the study area with a view to improve food security in the area.

2.0 Study Area

2.1 Location

Jere, a local government of Borno State, lies between latitudes $11^0.09^0$N and longitude $13^0.02$E and at attitude of 354m above sea level. It shear boundary with the following LGAs: Maiduguri and Konduga.

2.2 Climate

The climate of Jere L.G.A. is generally semi-arid, with moderate variations in temperatures; the mean monthly minimum temperature is lowest (13.5OC) during the period of strongest and most constant northeast winds (Harmattan) in December and January; and highest (24.7OC) in April. The mean monthly maximum temperature is highest (40.2OC) prior to and during the onset of the rains in April and the lowest (31.3OC) during the peak rained period of August (National Meteorological Office Maiduguri, 2003 - 2008). The current rain fall in this area is 613mm and the raining periods usually last for about 5-6 month between May to November during the year, there is a little rainfall in the study area (Waziri, 2015).

2.3 Geology, Relief and Drainage

The geology of (Gongulon Lawanti) of Jere L. G. A. principally comprises of sedimentary rocks which falls under Chad formation, is made up mainly of argillaceous but well defined sandy horizons (Kogbe, 1989).Sand deposits are angular and of drifted fluvial origin. In many areas, the Clay became very dark as a result of the accumulation of organic matter and is then refer to the as Firki (black cotton soil). It is slightly some 320m above mean sea level (Nigeria Data Bank, 2006).

The relief of (Gongulon Lawanti) of Jere L. G. A. lies on a vast open plain which is flat ardently undulating. The landscape is develop on the sedimentary rock of the chad formation. The extensive plain contains no prominent hills and attaining an average elevation of 354m above sea level sloping toward chad level, (Waziri, 2015).

`The area is drained by one group of river, which bound towards Lake Chad. The region is generally drained by seasonally flowing rivers, whose peak flows are recorded during the rainy season in the months of July and August, (Waziri, 2015).

2.4 Soil

The profile of the soil is poorly develop and has low water holding capacity. The productivity of the soil is greatly impaired due to lack of vegetation cover to supply organic matter. Wind erosion possesses a serious threat to the quality of the soil in the study area and its environment, (Waziri, 2015).

2.5 Vegetation

Two vegetation zones are identified; Sudan savannah and southern savannah, the semi-arid nature of the Sahel and northern Sudan savannah makes the vegetation consist mainly open acacia tree savannah. In the winter south scrub vegetation is interspersed with tall trees and wood land vegetation has been generally modified in most places as a result of over cultivation and over-grazing-land

degradation and desertification have been on the increase, causing the desert to advance south wards. (Waziri, 2015).

2.6 Socio-Economic Activities

Jere, according to NPC 2006 census official gazette, has a total population of 211, 204 NPC Official Gazette, 2009).mostly Muslim including Kanuri, Hausa, Shuwa, Bura, Marghi, and Fulani ethnic groups. There is also a considerable Christian population and people from Southern states such as the Igbo, Ijaw, and Yoruba. The area has a total population of 211, 204

Most of the people living along the floodplain are peasant farmers. Land use at the site is characterized by permanent rain fed cultivation of grain crops such as sorghum and millet. Dry season fadama (Market gardening) cultivation is practiced at some points, using shaduf irrigation system. Also cultivations are usually carried out right to the edge of gullies. Other land use activities include sand mining, grazing, urban house construction, garden and orchards, (Waziri, 2015).

Fig: Map of Nigeria showing Borno State

Source: Google (2021)

3.0 Methodology

Data required for this study is data on Onion cultivation in (Gongulon Lawanti) of Jere L. G. A.; the prospect and challenges on the cultivation of Onion and finally the solution to the problems.

3.1 Sources of Data

The source of data collection for this research involves both the field data and those from existing research. The primary source includes in-depth interview i.e. face to face verbal interview, personal observation GPS and questionnaire. While the secondary source of data involve information from record, internet materials, and books journals.

3.2 Sample Population and Technique

The sample population of this study is sixty (60) respondent out of the total population in the study area. The technique used in administering the questionnaire was random sampling. By this method, it means people were selected and chosen randomly without any laid down procedure for selection and asked questions regarding nature and purpose of Onion cultivation in the study area which include male and female respondents. Therefore, the 60 peoples is chosen as sample.

3.3 Data Collection Instruments and Data Analysis

The method of data collection is a self-determined questionnaire, physical observation and scheduled interview a. The survey method will utilize the instrument of closed ended questionnaire to the respondents. The study employed the use of descriptive statistics which consists of pictures, tables, frequencies and percentages.

4.0 Results and Discussion

The result obtained were presented and discussed according to the objective of the research.

4.1 Socio-Demographic Characteristics of Respondents

Table 4.1.1 Socio-demographic characteristics of respondents.

Value	Frequency	Percentage%
Sex		
Male	35	58.3
Female	25	41.7
Total	**60**	**100%**
Age		
20-30	20	33.3
31-40	21	35.0
41-50	6	10.0
51-60	11	18.3
60andabove	2	3.3
Total	**60**	**100%**
Maritalstatus		
Single	15	25.0
Married	45	75.0
Total	**60**	**100%**
Levelofeducation		
Quraniceducation	17	28.3
Primary	7	11.7
Secondary	7	11.7
Tertiary	17	28.3
Noeducation	12	20.0
Total	**60**	**100%**
Familysize		
2-5	25	41.7
6-10	12	20.0
11-15	5	8.3
16andabove	9	15.0
None	9	15.0
Total	**60**	**100%**

Source: Field Survey 2024

Table 4.1 shows the Socio Demography characteristic of respondents which include the Sex, Age, Marital status, Level of education, Family size of the respondents. The Sex of the respondents indicates that Males are more than the females. Male respondents have 35 (59%) while Female constitute 25 (41%) of the study population. For the age of respondents, the age group of 31-40 came top constituting 21 (36%) of the respondents. This is followed by age bracket of 20-30 years constituting 20 (33%) of the study population, while age bracket 51-60 11 (18%), 41-50 6 (10%) 60 and above constitute 2 (3%), respectively.

Marital status of the respondents indicate that majority of the population are married with 45 (75%), while 15 (25%) are single respectively. Analysis for level of education indicates that 17 of the respondents have Quranic education which represents (29%) of the total population, and also 17 of the respondents attended tertiary institution which represent (28%). 7 (11%) have secondary school education, 7 (11%) have primary education, while 12 (20%) have no educational background.

Family size of the respondent indicates, majority of them have few family size, which shows 25 of the respondents have 2-5 family size which constitute (42%), followed by 12 of them have a family size of 6-12 which constitute (20%). And 9 of them have no family, while 7 of the respondents have 16 and above which constitute (15%) and the least of them have 11-15 family size which represents (8%).

The table reveal that shows that male respondents engage in Onion farming more than female respondents. This is shown in the table below. Male engage in onion farming more than female is because Onion farming in the study area is labor intensive, therefore men can withstand and resist stress, hard work more than the female ones. Female engage in Onion farming use labor force to do the work, men also do employ laborers to the work but only some part of the farm work. Female employ laborers to the whole work on the farm. They spent much on farm activities more than the male.

In terms of age pattern , result shows indicates majority who engage in Onion farming are between the age of 31-40 years of age which they constitutes about 35% out of the total respondents. It is shown in the table 4.1 below. These age group of farmers engage in farming activities due to responsibilities of the house which most of them are married, so they have to go into farming to satisfy their needs while those between the age of 20-30 majority of them are single, which they have no responsibilities on them, so they engage in farming activities without any push factors. In total among all the respondents, those who are married are more than the bachelors. The married constitute about 75% while the single ones constitute only 25%. As mention above, married respondents engage into farming due to family responsibilities that's why that is why they are more than the single farmers.

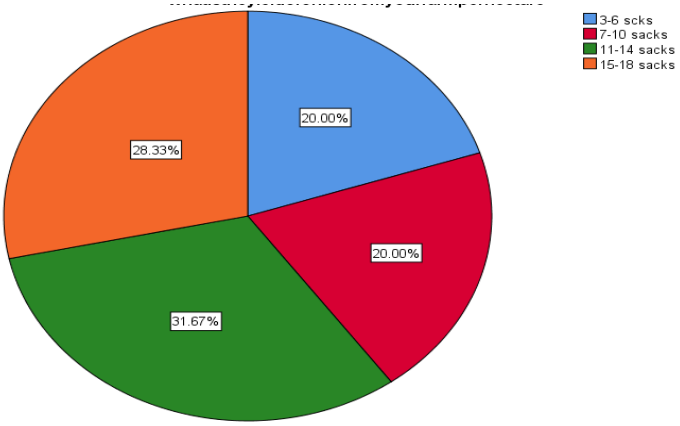
Their level of education also differs. We have those who attend quranic education which they represent about 29% out of the total respondents, followed by those who attend tertiary level of education which they also represent 28%. Those who attend tertiary education are those with diploma and few graduate in their midst. We also have the primary and secondary school dropout which the both represent 7%, 7% and then we those who didn`t attend any form of education they are also among. Base on the result, those who attend tertiary are the one that produce good yield an output, because they have a theoretical knowledge on onion farming in school attended.

Family size here also play role in the farming practice. Family sizes between 2–5 are majority among them which they constitutes 42% out of the total respondents. Result shows that those with small family size are mostly between the ages of 20 – 30.

4.2 Prospects of Onion Farming

Onion play very important role in the diet of human. The consumption of Onions as a cheap source of minerals and vitamins to supplement people's diet cannot be over emphasized. They help in protecting body against diseases. Almost all Onions are low in fat and calories and many of them are good sources of fibre. The high level of fibre in Onion keeps the digestive system healthy and prevents constipation. Onion production also serves as sources of livelihood for small scale farmers, create employment opportunities for the populace, generate income and reduce poverty. An average yield of about 15.25 tonnes per hectare of Onion, were reported to be produced in the State. Onion Serve as a major source of livelihood to the community of jere. About 35% of the teaming youth in jere community engaged in Onion farming. with little profit it meets the need of one's household. Youth getting married with the source. Land are bought with the source. Different needs are meets with the help of onion cultivation.

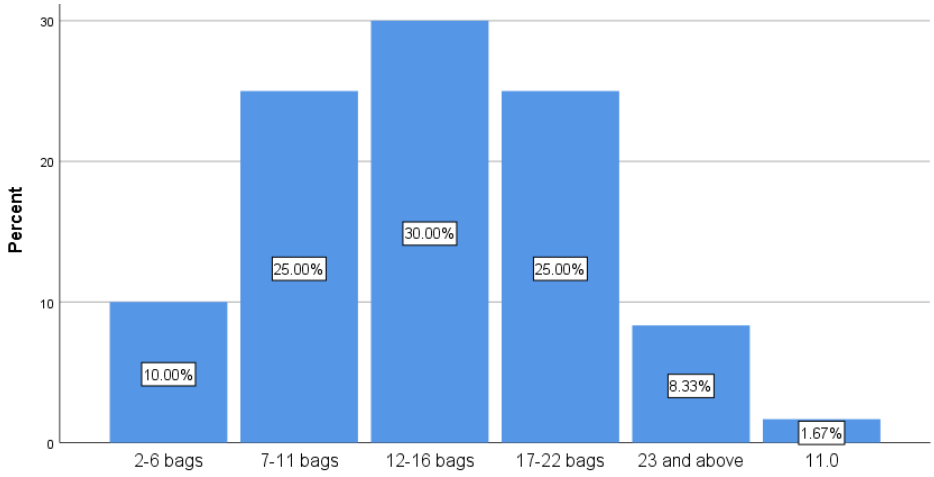
Fig 1. Yield Per Hectare



Source: Field Survey, 2024

This result analyze the yield of each farm per hectare 32% of the respondents have 11-14 sacks, 15-18 sacks goes to 28% of the respondents, 20% respondents have the ability to produce 3-6 sacks another 20% of respondents produce 7-10 sacks.

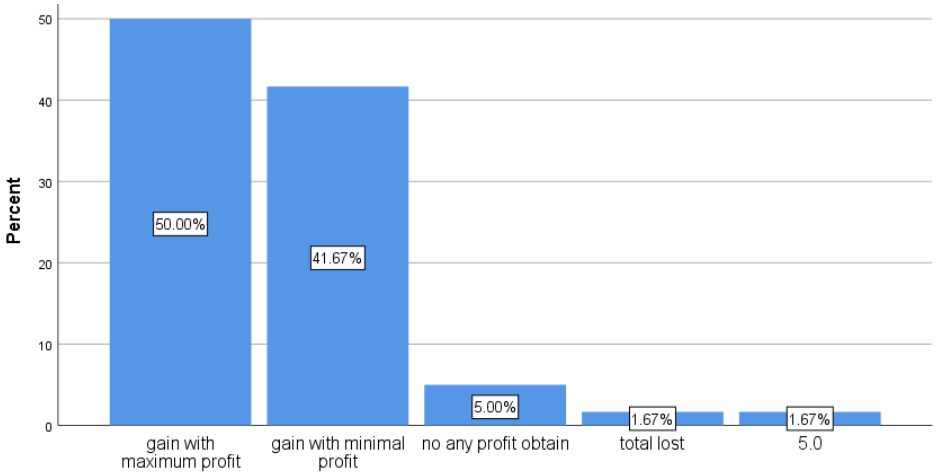
Fig 2. Total yield in bags



Source: Field Survey, 2024

This result shows that majority of the respondents 30% produced 12-16 sacks of onion, followed by two equal percentage 25% of respondents who produced 7-17 and 17-22 sacks respectively, another group of respondents 10% produced 2-6 sacks, 8% of respondents produced the highest onion with 23 and above and the least respondents 2% are capable of producing 11 sacks. The number production depends on the size of land and good management

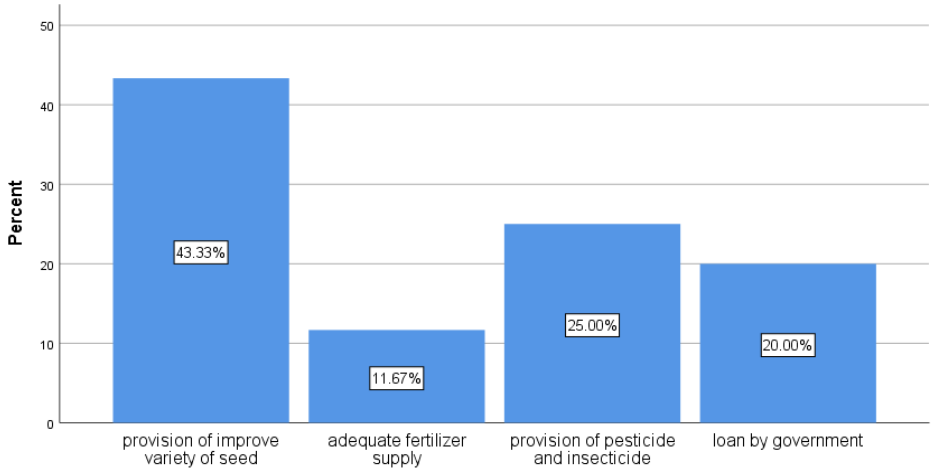
Fig 3. Total gains from Onion farming



Source: Field Survey, 2024

The result shows half of the respondents which constitute 50% out of the total respondents gain from their onion production with maximum profit, followed by 41% of the respondents gain with minimal profit, and 5% of them attain no any profit nor lost, 2% of them have lost with no profit.

Fig 4. Requirements to improve Onion yield



Source: Field Survey, 2024

The result analysis shows the highest respondent 43% are in demand of improve seed variety to increase their income flow, 25% of the respondents need pesticide and insecticide to control pest and disease, that will allow the crop to perform well and give good output which generate more income, 20% respondents need loan from government and 12% respondents demand is fertilizer to boost the growth of onion for better growth.

5.0 Conclusion and Recommendation

5.1 Conclusion

The study has assesses the cultivation of onion in Maiduguri, Jere LGA. The analysis focused on the prospects and challenges associated with the cultivation of Onion. And also the extent in which onion is been cultivated. This necessarily involves a discussion of annual income, yield per hectare, factors affecting onion growth, hand size occupied, problems of pest and disease, insecurity, lack of credit facility, topography, the outcome at the end of the season, disposal method carried out, financial support and lack of experience.

Therefore, there is need for more attention to be given in other ensure effective onion farming in the study area.

5.2 Recommendations

In light of the findings of the study the following recommendations are offered.

Government should provide adequate fund and support to the farmers so as to enhance the provision of more and better yield of Onions.

Public awareness should be done on the prospect of onion cultivation so as to motivate the farmers to give good output and

also give clarification on how to overcome the challenges involves in the cultivation of onion.

Government should provide all the necessary equipment that is been used in the cultivation of Onions.

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