THE INTERNATIONAL JOURNAL OF SCIENCE & TECHNOLEDGE

ICT Analysis of Sugarcane Farmers in Lau Local Government Area Taraba State Nigeria

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Abstract:
The aim of the study is to find efficiency of farmers in sugarcane production along with advanced technology adaption and investigating restricted areas. Responses from 70 sugarcane farmers indicated that more involvement and efficiency have been noticed in younger farmers. Many restrictions like lack of credit facilities, extension support, pest control etc have been ranked by respondents. Other aligned problems like low price, labour shortage have been also highlighted. ICT has been found a major source. Suggestions like training of sugarcane farmers also have been recommended.

Keywords: *Analysis, ICT, sugarcane, farmers, government*

1. Introduction

1.1. Background of the Study

In case of consumption sugar, bagasse and molasses are the three major forms of manufacture of refined granulated brown or cubed sugar from sugarcane. As per Nasir (2001), for preparation of brewing beer, soft drinks, confectionaries, pharmaceutical it serves as a raw material. Kochhar (1996), highlighted that sugarcane plant is the most efficient converter into energy carbon dioxide and water into energy giving food and the first food sweetening material of our ancestors. FADAMA of Northern Nigeria is one of the popular places where sugarcane is being cultured with minimum 1500mm of rainfall. To enhance production, Bacita Sugar Company in Kwara State and Savannah Sugar Company at Numan in Adamawa State, water is being supplemented.

40% of the sugar consumed in Nigeria is from the establishments (Girei, 2006). Chewing, drinking juice, raw sugar and centrifugal sugar are the most popular usage of sugarcane. From juice to pale yellow sugar to white sugar is the step. Molasses which contains 35% sucrose and 15% reducing sugars is the dark brown viscous liquid separated from the crystalline sugar. For industrial purpose, production of rum, gin, vodka, ethyl, alcohol, acetone and butanol, also bakers and brewer's yeast are some of the popularly used. As additive and used in constructing roads it is also being used as being highlighted by Davies (2007). Bagasse is being mainly used as fuel in sugar factories, in paper manufacturing, cardboard, fiber board, wallboard and plastic, cattle feed and in producing furfural (Gibbon and Pains, 1995, NSDC, 2002).The desired productivity improvement and competitiveness in Nigeria sugarcane enterprises have been difficult to achieve over years due to weaknesses in the commodity marketing system and the lack of attention to develop the commodity chain, produce value added products and enhance market access. Similarly, Jawanjal*et al.* (2014) investigated the level of resource use efficiency in sugarcane production in konkan region of India and found out that ratoon sugarcane was over- utilized in the study area. The term 'resource use efficiency in agriculture' also considers technical efficiency, allocative efficiency and environmental efficiency. Proper utilization of land, labour, water and other resources are needed to be done in optimal manner to maximize his income, at least cost, on sustainable basis. Many studies have been done in showing usage of resources. Attainment of maximum physical yield per unit of land at high cost is the main concerned for some farmers. Whereas, achievement of maximum profit per unit of inputs used another matter of concern. For every firm maximization of allocating resources is the main purpose. It is a common fact that resource and managerial efficiency varies from one company to another. To determine farm efficiency, technology, credit, market and other infrastructure and policy support, coupled with risk perception and risk management capacity are the main factors. For farmers, soil degradation, depletion of ground water and water pollution also hamper agricultural practices which come with high opportunity cost. Both economic as well as environmental aspects of resource use take place. Along with all of these, public investment subsides and credits for agriculture are one of the important facts. A study on Numan Local Government Area of Adamawa State revealed underutilization of land and sugarcane sets (Girei and Giroh, 2013).

Underutilization also being noticed in case of nitrogen fertilizer, potassium, irrigation water. Over exploitation of land and water resources also decreases the output of firms although it gives maximum firm output for short term. Soil degradation, depletion of ground water and water pollution also has agricultural practices which grounds sustainability problem and associated with high opportunity cost. Both economic as well as environmental aspects are there for ulitilization of resources.

1.2. Statement of the Problem

For Nigerian GDP, sugarcane is one of the industrial crops which before 1982 contributed a lot for elevating the nation's GDP in the agricultural sector. Small attention has been given to this after 1982 which resulted shut down of many sugar factories and increasing unemployment in the country (CBN, 1999). Richness in natural resources, in terms of land and water as well as human resources have been satisfied the country's requirement for sugar and bio-fuel as well as generating a scope for export (National Sugar Development Council (NSDC), 2003). Development in the Nigerian sugar industry has been very slow for the past three decades while the domestic supply of sugar had lagged behind the demand for the product, in spite of the country's comparative advantage for sugarcane production (Oni, 2016). Girei and Giroh (2012) in the study conducted to examine the factors affecting sugarcane production under the out growers scheme in Numan Local Government area of Adawama state examined that Lau and Karim Lamido Local Government Area of Taraba State has a vast land and available water and human resource for cultivation of sugarcane on large scale similar to that of Numan, but instead, rice and other crops are given much preference than any other crop (sugarcane inclusive). A few percentages of the farmers who cultivated sugarcane in the area produce it in a small quantity mainly for local consumption. It is based on this background that the research work deems it necessary to conduct an empirical study on the analysis of sugarcane production among the local farmers in Lau LGA of Taraba State.

1.3. Objective of the Study

Investigating of efficiency of Sugarcane farmers in Lau Local Government Area of Taraba State is the main primary objective of this study. The specific objectives are to:

- Find out the origin of information of sugarcane farmers in the study area
- Recognize the restrictions of sugarcane production in the study area.

1.4. Justification of the Study

This study will also expose the potentiality of the region in term of sugarcane production capabilities aimed at attracting local and international investors. It will help the farmers discover new technology involved in sugarcane farming and production. Also the study will be useful to policy makers in the formulation of policy to boost sugarcane production in the region. The study will also contribute to literature and add to the body of knowledge by providing data on sugarcane production in the area to researchers and students to conduct similar study on the topic.

1.5. Scope of the Study

This study will take into account the small scale farmers in Lau local Government Area of Taraba State, Nigeria with special focus on adaption of new technologies and usage of various practices in farming sugarcane. It also highlights the restrictions to sugarcane production in the study area.

2. Methodology

2.1. Study Area

The study was conducted in Lau Local Government Area of Taraba State, Nigeria. The area lies between longitude 10°and 11°E and latitude 9°and 10°N of the equator with estimated population of about 96,590 (NPC, 2006). Its headquarters is in the town of Lau and the area is dominated by Hausa Fulani people, other major tribes in the local government area includes the Mumuyes, Jenjo, Yandang and Wurkun native groups (Audu, 2017). Lau Local government has a border with Ardo kola and Jalingo Local Government areas of Taraba State to the south, Yorro and Zing local government areas of Taraba state to the east, and Karim Lamido local government area of Taraba State to the west. It also share border with Numan Local Government Area of Adamawa State to the North. It has an area of 1,660 km^2 and a well-drained sandy-loam to clayey soil for agricultural production.

The local government has a tropical wet-dry climate, well drained alluvial soils and has both savannah and rain forest vegetation, the rainfall ranges between 1000 mm to 2500 mm per annum. The dry season set in from December to February while the raining season starts from March to November (Martins and Saidu, 1997). The major occupation of the people is farming. The major crops cultivated in this region include rice, maize, beans seed, sugarcane, sorghum and cassava. The area is also known for fishing along the river Benue trough and other water tributaries underlying within the swampy land in the area.

2.2. Source of Data

Data for the study were collected mainly from the primary and secondary source. This was achieved through the administration of well-structured questionnaire which were designed and distributed to the respondents. The questionnaire will also be backed up with personal visit and oral interviews to the farmers on farm household production activities of sugarcane during 2018/2019 cropping season.

2.3. Sampling Procedure and Sample Size

Three (3) major sugarcane producing area Lau, Kunini and Garin-dogo will be selected,3 wards were selected from each LGAs to make up a total of 9 village in the local government area that were purposively selected. Because the sugarcane farmers are not much the researcher will sample all (75) of them and that will mean 100% sample proportion. The sample size will be 75 respondents who will be administer with a well-structured questionnaire.

2.3.1. Distribution of Respondent Based on Town/Village

Three (3) major sugarcane producing wards out of the eleven (11) wards in the Local Government Area were purposively selected. Nine (9) villages in each of the selected wards were randomly chosen where 75 farmers were selected. Finally a well-structured questionnaire was administered to 75 farmers in the selected villages in proportion to their population (Table 4.2) out of which 70 were returned and used for analysis.

Variables	Frequency	Percentage %
Anguwan Primary SchooL	7.8	8.5
AnguwanKuka	7.8	15.0
AnguwanJenjo	7.8	5.5
AnguwanLakawa	7.8	9.0
AnguwanKarofi	7.8	5.5
AnguwanGwaizo	7.8	20.5
KofanSarkii	7.8	20.5
Karofi	7.8	8.5
GarinMashi	7.8	7.0
Total	70	100

Table 1

2.4. Methods of Data Analysis

The analytical tool used for this study includes; simple descriptive statistics, and production functions model. Descriptive statistics such as means, percentages and frequency tables will be used to achieve objective i and ii

3. Results and Discussion

3.1. Sources of Information of Sugarcane Farmers

Variables	Frequency	Percentage%
Tadp	22	32.4
Moa	18	23.5
Nb	6	8.8
Ict	24	35.3
Total	70	100

Table 2: What Is the Source of Your Information?
Source: Field Survey 2019

Table 2 shows the source of information by the respondents and revealed that 32.4% of the farmers obtain their information from Taraba State Agricultural Development Programmes (TADP). 35.3% of the farmers from ICT, 23.5% from MOA while 8.8% from the NB. This shows that the state extension services have poor linkages and support to the farmers; furthermore, they found that NB was the main constrained to farmers. Suggestions to solve problems inhibiting meeting information needs. Among suggestion to ameliorate the challenges of respondents were of view that government should invest in building ICT infrastructure in their place of work and provide stable power supply to access and use of e-resources as well as provision of fast, efficient office –wide internet connectivity.

Variables	Frequency	Percentage%
Yes	32	46.0
No	38	54.0
Total	70	100

Table 3: Do You Have Access to Extension Agents?
Source: Field Survey 2019

Table 3 revealed that 46.0% of the farmers have access to extension workers, while 54.0% of the respondents do not have access to them. This implies that there is very weak extension service at the farmer's disposal thus the tendency of adopting new innovation is very slim. Extension agents play a major role in all extension activities. If the agent cannot handle a situation properly, extension approach is needed to be adopted. The outcome of the extension programme depends on the effectiveness of the extension agent. The agent needs to work with many different ways. Many

circumstances arise due to this. The educated, trained professional (agent) often has to work with many farmers with little education which may be quite differ Adesina (2000) respondents who are not frequently visited by extension workers have lower possibilities of adoption than those frequently visited.

Variables	Frequency	Percentage%
Once a week	44	58.6
Twice a week	16	22.9
More than twice a week	10	18.5
TOTAL	70	100

Table 4: If The Answer to the Above Question Is True, How Often Are You Visited?
Source: Field Survey 2019

Distribution based of the respondents indicated that majority 58.6% of the farmers are often visited extension once in a week, while 22.9% often visited twice a week and 18.5% visited more than twice in a week, this means that farmers lack fund to visit the extension agent due to distance.

3.2. Constraints to Sugarcane Production

Variables	Frequency	Percentage%
Low price	10	11.0
Pest and disease	25	46.7
Inadequate credit facilities	22	30.0
Labour Shortage	13	12.3
Total	70	100

Table 5: What Problem Do You Encounter in Sugarcane Production?
Source: Field Survey 2019

Description of Table 5 revealed that there are number of problems affecting sugarcane production in the study area. However, the most important problems were inadequate credit facilities. Extension support and the problem of pests and diseases attacks with 100% of the total responses which is ranked 1st by the respondents. Shortage of human capital is also another major problem as being indicated by 1.4% of the sampled respondents. This has been observed as a second most problem in case of sugarcane production. The consequence of inadequate labour supply means that the farmers has to either utilize family labour which may not be efficient especially when particular farm operation because of its significance is needed to be carried out within a limited time space. It may also mean high cost of labour in situation where by the farmer depends solely on utilization of hired labour throughout the cropping season which incurred an additional cost of production. Similarly, 46.7% of the respondents identified inadequate credit supply as a factor militating against sugarcane production in the study area. This agrees with the opinion of Girei and Giroh (2012) that problem of inadequate fund and credit hinders the development of irrigation schemes and other facilities needed for large scale sugarcane production. Similarly, Singels et al. (2013) further identified erratic rainfall; soil acidity limited access to credits and the increases in the costs of productive inputs among the constraints faced by sugarcane growers in other African Countries including South Africa and Nigeria

4. Conclusion and Recommendations

4.1. Conclusion

The major sources of information of the farmers is ICT which include television, radio, hand set (phone), hand flyers etc. the structure of the ADP is not really strong in the area anymore because of government bureaucracy. Low price, lack of market, credit facilities, labor, and other basic amenities are major problems facing sugarcane farmers in the study area.

4.2. Recommendations

Based on the results of the finding, the following recommendations were made:

- The ADPs and Research institute in the country should liaise with the farmers to ensuring the supply of improved sugarcane planting materials at a subsidized price.
- Proper utilization was missing due to lack of training of sugarcane farmers.
- Government should provide basic amenities like good road, pipe born water, electricity and health care services to the rural area to ease they farming activities
- All stakeholder and government should ensure a well-structured market for sugarcane production especially in the study area

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