Analysis of ICT for sugarcane farmers in Lau Local Government Area Taraba State Nigeria

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ABSTRACT

The study was carried out to "analyse ICT for sugarcane in Lau local government area of Taraba state, Nigeria. The objectives were to determine the resources use efficiency of farmers in sugarcane production, and identify the constraints to sugarcane production in the study area. Data were collected with the aid of structured questionnaire, administered to 70 sugarcane farmers in the study area. The data generated were analysed with the use of descriptive statistics. The young farmers are better and more active in adopting new techniques of farming and are willing to change for the better than the older ones who are somehow conservatives. The major problems affecting sugarcane production were inadequate credit facilities, extension support and the problem of pests and diseases attacks with 100% of the total responses which is ranked by the respondents. Also the low price, labour shortage was also one of the major problems of sugarcanes production in the study area. The major source of information of the farmers is ICT. It is recommended that, resources use inputs in the study area are not effectively utilized and therefor, there is need for training of sugarcane farmers on farm inputs optimum utilization by the extension workers in the state.

Key words: Analysis, ICT, sugarcane, farmers, government.

INTRODUCTION

Background of the study

Sugarcane has three main products namely: sugar, bagasse and molasses and the sugar industry is responsible for the manufacture of refined granulated brown or cubed sugar from sugarcane which is consumed as a basic food item. In addition, it serves as a raw material for a variety of products for brewing beer, soft drinks, confectionaries, pharmaceutical (Nasir, 2001). 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 (Kochhar, 1996). The area where sugarcane is cultivated includes the tidal water areas, naturally flooded areas such as the FADAMA of Northern Nigeria. These areas have a total minimum of 1500 mm of rainfall during the growing season. However, in some area, such as the Bacita Sugar Company in Kwara State and Savannah Sugar Company at Numan in Adamawa State, water is supplemented through irrigation to enhance production. Girei (2006) reported that 40% of the sugar consumed in Nigeria is from the establishments. Sugarcane is grown for chewing, drinking juice, raw sugar and centrifugal sugar. Thick noble cane, which is relatively soft with a high sugar and juice content and low fiber, is best for chewing. By boiling the juice over an open fire until it is almost dry, a form of sugar is prepared (Onwueme and Sinha, 2003). With further improvement, all insoluble materials and all impurities are separated from the juice and the resulting product is a fine grained, pale yellow sugar which is further refined to produce white sugar.
which has become an important item of human diet. The dark brown viscous liquid separated from the crystalline sugar in the last stage of juice processing is called molasses containing 35% sucrose and 15% reducing sugars. It is an important industrial raw material in producing rum, gin, vodka, ethyl alcohol, acetone and butanol, also bakers and brewer’s yeast are produced from it. It is widely used as additive and used in constructing roads (Davies, 2007). Bagasse is another by-product of sugarcane 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 that ratoon sugarcane was over-utilized in the study area. Also, nitrogen fertilizer, potassium fertilizer and irrigation water were under-utilized by the farmers in the region.

The term “resource use efficiency in agriculture” may be broadly defined to include the concept of technical efficiency, allocative efficiency and environmental efficiency. An efficient farmer allocates his land, labour, water and other resources in an optimal manner, so as to maximize his income, at least cost, on sustainable basis. However, there are countless studies showing that farmers often use their resources sub-optimally. While some farmers may attain maximum physical yield per unit of land at high cost, some other achieve maximum profit per unit of inputs used. Also in the process of achieving maximum yield and returns, some farmers may ignore the environmentally adverse consequence.

According to Hague (2006), all enterprising farmers would try to maximize their farm returns by allocating resources in an efficient manner. But as resource (both qualitatively and quantitatively) and managerial efficiency of different farmers vary widely, the net returns per unit of inputs used also vary significantly from farm to farm. Also a farmer access to technology, credit, market and other infrastructure and policy support, coupled with risk perception and risk management capacity under erratic weather and price situations would determine his farm efficiency. Moreover, a farmer knowingly or unknowingly may over exploit his land and water resources for maximizing farm income in the short run, thereby resulting in soil and water degradation and rapid depletion of ground water, and also posing a problem of sustainability of agriculture in the long run. In fact soil degradation, depletion of ground water and water pollution due to farmers managerial inefficiency or otherwise; have a social cost while farmers who forgo certain agricultural practices which cause any such sustainability problem may have a high opportunity cost. Furthermore, a farmer may not be often either fully aware or properly guided and aided for alternative, albeit best possible uses of his scarce resources like land and water. Thus, there are economic as well as environmental aspects of resource use efficiency. In addition from the point of view of public exchange the resource use efficiency would mean that public investment subsidises and credits for agriculture are used in efficient manner. Girei and Giroh (2013) in a study on productivity and resource use efficiency in Numan Local Government Area of Adamawa State showed that land and sugarcane sets were underutilized by the farmers; however, fertilizer and water were over-utilized in the study area. Also nitrogen fertilizer, potassium, irrigation water were under-utilized in the study area.

Statement of the problem

In Nigeria, sugarcane is one of the industrial crops that, before 1982, contributed to elevating the nation’s GDP in the agricultural sector. However, little attention was paid to its production after 1982 and this accounted for the collapse of some sugar factories and the consequent increase in unemployment in the country (CBN, 1999). Nigeria has vast human and natural resources, in terms of land and water, to produce enough sugarcane, not only to satisfy the country’s requirement for sugar and bio-fuel, but also 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 a study conducted to examine the factors affecting sugarcane production under the out growers scheme in Numan Local Government area of Adawama state found 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 with the aim of stimulating local interest and investment towards its production in the study area.

The study will thus provide answers to the following research questions:

i. What are the sources of information of sugarcane farmers in the study area?
ii. What are the constraints to sugarcane production in the
Objective of the study

The broad objective of the study was to examine the Efficiency of Sugarcane farmers in Lau Local Government Area of Taraba State. The specific objectives were to:

(i) Determine the sources of information of sugarcane farmers in the study area
(ii) Identify the constraints to sugarcane production in the study area.

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.

Scope of the study

The study will cover sugarcane small scale farmers in Lau local Government Area of Taraba State, Nigeria with emphasis on new technology and efficient use of various practices in farming sugarcane as well as constraints to sugarcane production in the study area.

METHODOLOGY

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 km² and a well-drained sandy-loam to clayey soil for agricultural production.

The local government has a tropical wet-dry clmate, well drained alluvial soils and has both savannah and rain forest vegetation, the rainfall ranges between 1000 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.

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 was 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.

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.

Methods of data analysis

The analytical tool used for this study includes; simple descriptive statistics, and production functions model.
Table 1: Distribution of respondent based on town/village.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anguwan Primary School</td>
<td>7.8</td>
<td>8.5</td>
</tr>
<tr>
<td>AnguwanKuka</td>
<td>7.8</td>
<td>15.0</td>
</tr>
<tr>
<td>AnguwanJenjo</td>
<td>7.8</td>
<td>5.5</td>
</tr>
<tr>
<td>AnguwanLakawa</td>
<td>7.8</td>
<td>9.0</td>
</tr>
<tr>
<td>AnguwanKarofi</td>
<td>7.8</td>
<td>5.5</td>
</tr>
<tr>
<td>AnguwanGwaizo</td>
<td>7.8</td>
<td>20.5</td>
</tr>
<tr>
<td>KofanSarkii</td>
<td>7.8</td>
<td>20.5</td>
</tr>
<tr>
<td>Karofi</td>
<td>7.8</td>
<td>8.5</td>
</tr>
<tr>
<td>GarinMashi</td>
<td>7.8</td>
<td>7.0</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2: What is the source of your information?

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>TADP</td>
<td>22</td>
<td>32.4</td>
</tr>
<tr>
<td>MOA</td>
<td>18</td>
<td>23.5</td>
</tr>
<tr>
<td>NB</td>
<td>6</td>
<td>8.8</td>
</tr>
<tr>
<td>ICT</td>
<td>24</td>
<td>35.3</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Survey 2019

Table 3: Do you have access to extension agents?

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>32</td>
<td>46.0</td>
</tr>
<tr>
<td>No</td>
<td>38</td>
<td>54.0</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>


Descriptive statistics such as means, percentages and frequency tables will be used to achieve objectives I and II.

RESULTS AND DISCUSSION

Sources of information of sugarcane farmers

Table 2 shows the source of information by the respondents and that 32.4% of the farmers obtained 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. It also shows that the state extension services have poor linkages and support to the farmers and that NB was the main constrained to farmers. Suggestions to solve problems inhibiting meeting information are needed. Among the suggestions to ameliorate the challenges of respondents was 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.

Table 3 shows 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. The whole extension process is dependent upon the extension agents, who are the critical element in all extension actives. If the extension agent is not able to respond to a given situation and function effectively, it does not matter how imaginative the extension approach is or how impressive the supply of inputs and resources for extension work. Indeed, the effectiveness of the extension agent can often determine the success or failure of an extension programme. The extension agent has to work with people in a variety of different ways. It is often an intimate relationship and one which demands much fact and resourcefulness. The agent inevitably works with people
Table 4: If the answer to the above question is true, how often are you visited?

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Once a week</td>
<td>44</td>
<td>58.6</td>
</tr>
<tr>
<td>Twice a week</td>
<td>16</td>
<td>22.9</td>
</tr>
<tr>
<td>More than twice a week</td>
<td>10</td>
<td>18.5</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>


Table 5: What problem do you encounter in sugarcane production?

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low price</td>
<td>10</td>
<td>11.0</td>
</tr>
<tr>
<td>Pest and disease</td>
<td>25</td>
<td>46.7</td>
</tr>
<tr>
<td>Inadequate credit facilities</td>
<td>22</td>
<td>30.0</td>
</tr>
<tr>
<td>Labour Shortage</td>
<td>13</td>
<td>12.3</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>


whose circumstances are different from his own. He is an educated, trained professional working with farmers, many of whom have little formal education and lead a way of life which may be quite different. According to Adesina (2000), respondents who are not frequently visited by extension workers have lower possibilities of adoption than those frequently visited.

Distribution based of the respondents indicated that majority (58.6%) of the farmers are often visit extension once in a week, while 22.9% often visit twice a week and 18.5% more than twice in a week (Table 4). This means that farmers lack fund to visit the extension agent due to distance.

Constraints to sugarcane production

Table 5 shows that there are number of problems affecting sugarcane production in the study area. However, the most important problem was inadequate credit facilities. Extension support and the problem of pests and diseases attack with 100% of the total responses was ranked 1st by the respondents. This was followed by low price of the total respondents ranked as 2nd major problem of sugarcane production, labour shortage was also one of the major problems of sugarcane production in the area as indicated by 1.4% of the sampled respondents in the study area. 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 means 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 is in agreement with the opinion of Girei and Giroh (2012) who mentioned that the 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 increases in the costs of productive inputs as among the constraints faced by sugarcane growers in other African Countries including South Africa and Nigeria

CONCLUSION

The major source of information of the farmers is ICT which includes 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.

RECOMMENDATIONS

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

1. 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.
2. The resources-use inputs in the study area were not effectively utilized, thus there is the need for training of sugarcane farmers on farm inputs optimum utilization by the extension workers in the state.

3. Government should provide basic amenities such as good road, pipe born water, electricity and health care services to the rural area to ease farming activities

4. All stakeholder and government should ensure well-structured markets for sugarcane production especially in the study area.

REFERENCES


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