PROBLEMS ASSOCIATED WITH DATE PALM FRUIT MARKETING IN JIGAWA STATE, NIGERIA

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Abstract
The study examined problems associated with date palm fruit marketing in Jigawa state, Nigeria. Purposive and simple random sampling techniques were employed in selecting 122 marketers comprising date palm fruit retailers and wholesalers. The simple frequencies and percentages were used in analyzing the study data. The major problems identified in the date marketing were capital, pest and diseases, price fluctuation and high cost of transportation. In conclusion, inadequate capital and pest and disease were the major problems of marketers. Alternative means of obtaining capital through cooperatives, seeking interventions and modern methods of processing to add value to date and storage were recommended.

Keywords: processing, date, marketers, retailers, wholesalers

Introduction
The commencement of agricultural marketing begins at the farm where the farmer harvests his produce. Farmers produce are usually in sizeable quantities in the rural areas where consumers have less access to them. Storage is thus needed to regulate supply and meet the required demand. After harvesting the produce, it is not often in a form appropriate for consumers because it requires processes including sorting, clearing, grading and other activities to enable it meet the requirement of the consumer. The farmer anticipates payment immediately the produce leaves his possession and financial actions like negotiations or arrangements are made between the farmer and marketer until the produce is sold to the final consumer (Asogwa and Okwoche, 2012).

Prices can jointly be realized by consumer demand, food marketing system and the farm supply, any change in one usually results to modification or alteration of the other two (Barrett & Minten, 2009). Agricultural produce have a very critical characteristics, because they are either raw material that have to be partially or fully processed before they are consumed. They are characterized to be bulky, perishable in nature and requires large storage volume, immediate handling and preservation. Due to lack of storage facilities, adequate technologies and inadequate capital, farmers tend to sell their produce immediately after harvest. Problems that hinder the proper operation of markets include lack of information and inadequate storage and other basic infrastructures (Trostle, 2008). Better market efficiency would influence high prices to the farmers, inspire production and productivity and total output. Both farmers and traders profits will rise due to reduction in operational costs brought about by better market efficiency and structures. Improved marketing structures and competition decrease prices, increase marketable products and increases the consumer savings (Mahoo, 2011). An efficient, combined and reactive market mechanism is of paramount importance for ideal area of reserve in agriculture and also in encouraging farmers
to increase their output and seeking additional output. However, the main problems that worries policy makers were lack of marketing information, poor marketing facilities like infrastructures, storage and transportation. Other problems were inability to evolve appropriate policies and other techniques to improve marketing efficiency (Andargachew, 1990). For Nigeria, most of the date fruits marketed in the country are sourced from her neighbouring countries particularly Niger, Chad and Sudan. Nigerian data palm farmers have few stands in their farms and only one or few stands in their homes. In Nigeria, data palm cultivation is still at the subsistence level despite the country’s opportunity to grow the crop twice in a year (Omoti and Okolo, 2000).

The greater numbers of these farmers reside in the secluded areas that is characterized with poor transportation and weak market infrastructures, leading to increased cost of farming. They also lack dependable market information and prone to buyers that would offer good prices for their goods without being exploited (Key et al., 2000). Even if the farmers sell their produce, their continued existence in the system is still uncertain which could be attributed to lack of reliability and availability of produce market, exploitation by middlemen, inability to establish transaction, inability to meet standard patterns of behaviour, lack of important organization and tools to manage price and risk. Markets are improved and joined together through linkages relating the whole system worldwide and reforms that ease up transactions thereby linking farmers of less developed nations to clienteles and establishments in the rich nations. However, local farmers are experiencing more competition both in international and local markets (Ohen et al., 2013).

As noted by Ahmed (2014) the food marketing problems are apparent when farmers produce enough to meet the market demands on time and at reasonable price that would enhance their marketing and give them absolute encouragement. Undoubtedly, increasing agricultural productivity would increase food accessibility. However, this is not sufficient; food must be evenly circulated well at an affordable cost to ensure constant supply of food as a result of food marketing. Local marketers and producers (farmers) are affected by factors like elevated transport cost, lack of market infrastructures and poor means of price information and communication path. Other problems linked with commodities include value disparity and little production procedures. Moreover, the broad disparities between rural and urban prices discourage farmer’s confidence and zeal thereby reducing productivity and farmers at times decide to stop production completely (Chika et al., 2013).

Dates are essential section of food which contains great energy and nourishment. It is exclusively in the Arab and desert regions. It is consumed fresh, dried and engaged in other ways. Date farmers usually incurred losses during harvest, postharvest and marketing processes which are as a result of substantial or functional disruptions and diseases caused by pathogens and insects’ invasion (Kader & Hussein, 2009). The main constraint to dates production include lack of improved varieties, bad farm management, farmers inability to control and manage pest and diseases, poor harvesting, marketing and processing, low number of qualified staff involved in research and development. In order to solve these problems ecological groups are encouraging biological production which is an ecologically pleasant approach. There is a lot of controversy concerning date palm fruit producers who are engaged in converting conservative system to the
modern organic system (Azadi et al., 2006). This could be attributed to numerous unimproved varieties, lack of enough offshoots to produce new plantations, exorbitant price of new offshoots that would produce better quality produce (Al-Sakran & Muneer, 2006), and unavailability of water. In another perspective, problems faced by the date palm farmers centered on pest infestation and absence of market prospects. The red weevil is a vital pest that destroys date palm in Nigeria. It is widely spread due of poor pest management exercises by farmers (Alkhalifa, 2012).

The Nigerian agricultural sector has been described by the problem of demand exceeding supply due to significant increases in population growth rates, up to 3 percent per annum. The oil export boom and wage increase has contributed and triggered this problem due to high rate of development, expansion and the rising per capita income (Agwu and Ibeabuchi, 2011). Date farmers usually depend on comparatively high cost credit sources and advances by contractors since they encounter problems in marketing their produce. They are perceived as temporary clients because they have poor access credit, bulk sales and the assembly markets (Khushk et al., 2009). It has been indicated that advancements in the local markets like small farmers enhanced access to credit, absolute coaching, provision of extension services and the removal of any distorting policies, farmers’ efficiency, productivity, employment and equity will be enhanced.

Farayola et al. (2013) identified pests and diseases, inadequate storage facilities, price instability and high cost of transportation as major problems confronting the marketers of cocoa in Oyo State while poor infrastructure, high taxation, absence of strong board, high preservation cost, low access to finance and low patronage were identified as minor problems facing cocoa marketers in the area. Olukosi et al. (2012) identified the prevalence of poor infrastructural facilities like bad roads, inadequate road network, poor telecommunication services between the rural and the urban areas, inappropriate on-farm storage facilities, inadequate irrigation facilities, inadequate extension services, land tenure system and high cost of farm inputs as the problems of agricultural marketing in Nigeria. Al-Khalifah (2012) observed specific problems faced by the date palm farmers and marketers in Saudi Arabia to include pests and poor marketing studies. Mahmoudi et al. (2008) in their study on enhancing date palm fruit processing, marketing and pest control through organic culture found that market development encouraged countries like Japan to become interested in buying organic dates. Japan, Tunisia and its partners have explored new markets and products for organic dates.

A study conducted by Mani (2014) indicated that the structure of date palm marketing in Katsina State, Nigeria was weakly oligopolistic, profitable and suggested that the farmer’s profit could be better-off if strategies were developed to apply the research and technological progress on ground to boost the crop’s productivity. In a bid to revamp the date palm subsector in Nigeria, the country established a date palm section under the Nigerian Institute for Oil palm Research (NIFOR) date palm sub-section in 1981 in Dutse. Despite these efforts at encouraging date palm fruit production and marketing. It is therefore of paramount importance to look into examine the problems associated with date palm cultivation and marketing activities in Nigeria, using Jigawa state as a case study.
Methodology

Study area
This study was conducted in Jigawa state, Nigeria which is located in the north-west, Nigeria between longitudes 8°.00′E to 10°.15′E and latitudes 11°.00′N to 13°.00′N. The state has an estimated population of 5,828,200 people (Nigerian Population Commission (NPC) 2006). Majority of the state’s population live in the rural areas and are mostly involved in agriculture and animal husbandry (Sanusi et al., 2013). However, the people are engaged in both wet and dry season farming. The fertile soil is suitable for most tropical crops which encourages the processing and marketing of agricultural produce in the state. Weekly markets spread across all the Local Government Areas-LGAs in the state.

Sampling technique
The sampling design outlay used for selecting date palm fruit marketers (wholesalers and retailers) household respondents in Jigawa State is shown in Table 1.

Table 1: Study Sampling Procedure

<table>
<thead>
<tr>
<th>Markets</th>
<th>Wholesalers</th>
<th>Retailers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Population</td>
<td>Sample</td>
</tr>
<tr>
<td>Shuwarin</td>
<td>17</td>
<td>7</td>
</tr>
<tr>
<td>Babaldu</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Gujungu</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Maigatari</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Gumel</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Hadejia</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Kazaure</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Gwaram</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>44</td>
<td>18</td>
</tr>
</tbody>
</table>

Source: Field Survey

The study was conducted in Jigawa state, Nigeria. The data for the study were obtained through the administration of questionnaire to 122 marketers in the study area. Purposive and simple random sampling techniques were employed in selecting the marketer respondent in the area. The analytical techniques employed for the study were the frequencies, percentages and means. Both categories, eight markets were purposively selected due to high number of date fruit marketers in the area. A sample size of 18 wholesalers and 104 retailers were obtained making a total sample size of 122 marketers. Marketers were selected based on sampling percentage of 40% as indicated in the Table 1.

Results and Discussion

Date palm fruit market problems
The result of problems associated with date palm fruit marketing in the study area is as shown in Table 2.

Table 2: Problems Associated with Date Marketers

<table>
<thead>
<tr>
<th>Problems</th>
<th>Retailers</th>
<th>Wholesaler</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>Inadequate capital</td>
<td>82</td>
<td>78.85</td>
</tr>
<tr>
<td>Pest infestation</td>
<td>60</td>
<td>57.69</td>
</tr>
<tr>
<td>Price fluctuation</td>
<td>35</td>
<td>33.65</td>
</tr>
<tr>
<td>High cost of transportation</td>
<td>33</td>
<td>31.73</td>
</tr>
<tr>
<td>Bad road network</td>
<td>24</td>
<td>23.08</td>
</tr>
<tr>
<td>Inadequate storage facilities</td>
<td>20</td>
<td>19.23</td>
</tr>
<tr>
<td>Grading/Standardization</td>
<td>22</td>
<td>21.15</td>
</tr>
<tr>
<td>Poor market information</td>
<td>13</td>
<td>12.50</td>
</tr>
<tr>
<td>Unfavourable policies</td>
<td>13</td>
<td>12.50</td>
</tr>
</tbody>
</table>

Source: Field Survey

Inadequate Capital
For the retailer’s category of respondents, the inadequate capital problem (78.85%) ranked first in the list of problems associated with the date marketing activities. Similarly for the wholesalers, the same problem (50.0%) ranked first. This could be attributed to level of start-up capital needed for date marketing. Inadequate fund sources and the problem of collateral before obtaining loan in the area were limitations as 74.04% of the retailers sourced their capital from personal savings, while about 77.77% of the wholesaler...
category did same. This findings could be the reason why most of the marketers purchased small quantities of dates thereby limiting their ability to expand their business. It could also explain why most of the date marketers were (85.2%) were retailers.

Mani (2014) stated that date palm marketers were characterized with low propensity to save, with little or nothing to enable them trade for profit. They lack assistance from formal financial bodies. Osarenren and Adams (2014) revealed that inadequate capital was the major problem mitigating against marketers and was ranked first among the problems identified. Ebiwoei (2013) reported inadequate capital and spoilage of fruit as major constraints of watermelon marketing in Niger Delta, Nigeria.

**Pest Infestation**

One of the main causes of postharvest losses that affects the quality and quantity of dates during storage is infestation by insects including *Oryzaephilus surinamensis*, *Oryzaephilus amadan*, *Tribolium confusum*, *Plodia interpunctella*, *Cryptolestes ferrugineus*, and *Cadra* spp. These pests can adapt easily to harsh environmental conditions and must be controlled with an approved fumigant to avoid infestation (Kader and Hussein, 2009). About 57.69% percent of retailers reported pest infestation on their date and this problem was ranked second in the list of prevailing problems associated with marketers in the study area. About 50% of wholesalers reported pest infestation, but ranked the problem as first. The problem of pest and diseases could be attributed to poor processing and storage facilities. Marketers in the area did not undertake modern date processing and the only form of storage undertaken were date stored in sacks within marketers’ shops and stores. Many diseases and pest that affects date palm depends on the nature and severity of the problems, location, cultural practices, weather and cultivar (Zaid, et al. 2002).

Insects that affect date during storage are usually embedded stored in the fruit, therefore storing dates require special considerations and prevention strategies. One of the strategies involves the contamination of fruits with residues of insecticide fumigants (El-Shafie, 2012). Farayola et al. (2013) identified pest and the diseases as the major problem confronting marketers in the area. Moreover, the study collaborates with Mani (2014) that the problem of pest and diseases in dates is due to high susceptibility of date palm fruit to the pests and diseases.

**Price Fluctuations**

About 34% of the retailers had the problem of price fluctuation which was ranked third in the list of problems while for wholesalers, price fluctuations accounted for about 38.89% and was ranked fourth. The problem of price fluctuation makes marketers to have substantial gain, significant shortfall, changes in policies and market failures. Marketers may decide to buy in bulk if they expect any future price hikes, or buy less if a price fall is anticipated. It was observed that there were cases of price fluctuations as date prices usually increases during the Moslem fasting (ramadan) and festive periods, especially in during December times when wedding ceremonies are more. Daniel (2009) identified price fluctuation as a major problem confronting marketers followed by other problems like poor market information, spoilage, and low-quality product. Price fluctuations makes agriculture a risky business. Even where there is input supply elasticity, other factors such as weather, diseases and pest still persist keeping the industry business persistently risky. This leads irregular supply to the market due to unstable production outcomes that affects the
market (Grega, 2002).

**High Cost of Transportation**
Transportation is very important in the date business as any increase in the cost of transportation can lead to serious inflation on almost all aspects of human endeavour. Aderamo and Magaji (2010) confirmed that transportation is the main avenue that links the different parts of the society together. The study revealed that about 31.73% of the respondents encountered high cost of transportation and this was ranked fourth in the list problems associated with retailers while 27.78% of the wholesalers ranked same as fifth (Table 2). Agricultural produce are bulky in nature and therefore tend to attract high cost of transportation especially in Nigeria where fuel prices have soared at exorbitant prices. The transport price hikes affects the selling price of date palm. Delays in transportation causes the date fruit gets infected with diseased spots, shallow crinkling, loose taste and aroma that are detrimental to date palm fruit marketing (Mortazavi et al., 2007). Obasi and Ememam (2014); Ahmed (2014) found that the major problem encountered by marketers were the cost of transportation while Asogwa and Okwoche (2012) identified that high taxes during transportation occasioned high cost of transportation.

**Bad Road Network**
Bad road network accounted for about 23.08% of problems associated with retailers while wholesalers reported 50% and also ranked bad road network foremost also in their list of problems. This is line with Drucker (1995) who pointed out that problems associated with marketing arises due to weak road networks connecting markets to areas where agricultural goods are produced. Paul et al. (2009) indicated that the road infrastructure has vital impact on agricultural outputs and productivity. Tunde and Adeniyi (2012) opined that road networks should be improved towards improving production and marketing generally, to generate incomes and improve the standard of living of farmers and marketers. They further stated that transport was a factor in agricultural development and the only means by which agricultural produce can be moved from the farm to the different consumers.

**Inadequate Storage Facilities**
The problem of inadequate storage facilities accounted for 19.23% among retailers and was ranked sixth while the wholesalers reported about 27.78% but ranked the problem fifth. Harvesting, handling and storage of date requires a resonant consideration of their physical properties. The size, shape and physical dimensions are important in classifying the ordering and magnitude of the fruit thereby assisting in placing how many fruits are required in containers or plastic bags of a given size (Hazbavi et al., 2013). After harvesting, the processes of sorting date manually as is currently practiced in developing countries is time consuming, costly and absolutely labour intensive and consequently brings fatigue (Pourdarbani et al., 2015).

**Grading and Standardization**
Grading and standardization accounted for 21.15% for retailers and ranked seventh while about 16.67% of wholesalers encountered the problem and ranked the problem seventh. The essence of grading date is to have quality control grade of the produce based on standards by categorizing them into sizes, shapes, broken fruits and insect infected fruits. The study revealed that the current system of marketing does not enforce standardization as marketers have the right to
sell any type quality of date depending on the prices offered to them. The only data sale measurement unit container in study area was called *mudu*, of various sizes. Some of the traders were however found alter the measurements by hitting inwards the button of the *mudu*, in order to reduce the measurements quantity sold to consumers. Volume measures availed the marketers the opportunity to manipulate the measuring containers to their own advantages at the expense of even the vigilant the consumer that eventually obtain less the date quantity for the agreed price (Adejobi et al., 2011). Grading and standardization are very crucial problems associated with agricultural produce. It is not easy to grade and standardize commodities since there are many agricultural goods. Also a single produce is characterized by many qualities (Karthikeyan, 2016).

The importance of systematic grading and standardization cannot be over emphasized, this is further reinstated by the National Institute of Agricultural Extension Management (NIAEM) (2016) that scientific grading should be based on objective evaluation of quality aspects so that the sellers could be able to describe the quality that they are offering and the buyers should understand what is being offered to them in the market. Grading and standardization are marketing functions, which facilitates the movement of produce. Without standardization there is confusion and unfairness as well.

**Inadequate Market Information**

The problem of market information accounted for 12.5% of problems associated with retailers in the area and was ranked eighth. Same constituted about 5.56% of problems associated with the wholesalers activities and was also ranked eighth. The low percentage of respondents that complained on market information is an indication that respondents had good knowledge on date prices and outputs. Prices were usually depended on demand and supply forces. However, farmers claimed they had little or no information on relative prices and demands for their products, especially at the International market levels. They usually obtain information through individuals in the commodity chain and this are incorrect atimes. Marketing information regulates all marketing decisions that determines the success of the market (Asogwa et al., 2014). The study finding agrees closely with Musa et al. (2013) who identified poor market information as the forth common problems militating against women marketers. Eze et al. (2010) identified specific issues including affecting marketing to include inadequate market information, inadequate processing facilities, long distance to processing centres, poor technical knowhow and inadequate extension services.

**Unfavourable Policies**

Unfavourable policies contributed about 12.5% of the date retailers market problems and ranked ninth among the problems. These unfavourable policies included ban on farm input importation and unreasonable market taxes. Anyawu et al. (1997) observed that majority of the agricultural policies have failed to put into consideration issues like the land tenure system, provision of adequate facilities, access to agricultural micro credit facilities, access to markets for sale of agricultural produce and the provision of education on mechanized farming. Njoku (1994) recommended favourable marketing policies to stimulate date improved market activities.
Conclusion and Recommendations

In conclusion, despite the potentials that accrue to date palm production in the area, the major problems confronting date marketers is inadequate capital, pest infestation and price fluctuations which retarded the date market in the area. Based on the study findings, the following recommendations are made:

1) Efforts should be stepped up to avail marketers opportunities to access viable capital sources and to form strong cooperative society in order to enable them access tangible capital for their date marketing activities.

2) There is need to link modern methods of processing to add value and storing dates that are domiciled in the Universities and Research Institutions to the majority small scale marketers of date.

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