

Challenges and Information Needs Assessment of Dry Season Vegetable Farmers in Akure Metropolis, Ondo State

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Abstract: Dry season vegetable production is gaining ground in Akure metropolis. However, there is the dearth of information among the farmers. The study was carried out to investigate the challenges and information needs of the dry season vegetable producers in Akure South and Akure North Local Government areas. Eighty respondents were selected through a multistage sampling technique. A structured interview schedule was used in collecting data from them. The data were analyzed using frequency Counts and percentages, Means and Standard Deviations and the Relative Importance Index (RII). Findings from the study show that inadequate information is one of the greatest challenges affecting over 92.5% of the vegetable farmers. Others include poor storage and preservation strategies, financial and marketing problems and issues caused by natural disaster. The study shows that the dry season vegetable farmers need information on how and where to access loans/ credit to boost their vegetable production and on Market Access. They also need information on the means of acquiring farm labor, irrigation and the use of organic manure; they need information on proper harvesting methods, good packaging, and storage techniques and grading of vegetables. The study recommends the organization of the dry season vegetable farmers into viable groups to enhance to access loans, training, and agricultural information. Consumers' forum could also be organized to discuss issues relating to the needs of the users and communicate such to the farmers before planting. The government and Non-Governmental organizations and extension agents should come to the aids of the dry season vegetable farmers and organize training programmes for them. Information needed regarding market access, could be made available through the television for wider coverage. The information needs could be printed in the local languages of the farmers and published in Leaflets, posters, and handbills. There is the need to obtain information on harvest and post-harvest technologies available to dry season vegetable producers in Ondo state. Radio stations dedicated to agricultural information dissemination should be established in all the states in Nigeria

Keywords: Dry season Vegetable, Farmers, Information Needs, Training, Importance Index, Productivity.

I. Introduction

Vegetable production is a growing aspect of agriculture in recent times. The awareness to consume vegetables for good health is increasing. According to (Food and Agricultural Organization (FAO), 2009), vegetables play a significant role in supplying the essential minerals, vitamins and fiber not present in large quantities in starchy staple foods. Vegetables add flavors to meals. They are tasty, healthy and supply both proteins and carbohydrates. According to (Agropedia, 2009) farmers adopt the production of vegetables due to the changing food habits of people and the increasing awareness of individuals towards balanced diet and concept of nutritional security. Vegetables are essential to human health. For instance, tomato fruits contain lycopene, a valuable anti-cancer and anti-cardiovascular chemical. Carrots contain carotene (precursor of the essential vitamin A), and many fresh vegetables contain vitamin C. Eating plenty of fruits and vegetables according to (CARDIOSMART,2014) may reduce the risk of contracting some diseases such as heart disease, high blood pressure, and cancer. Vegetables are valuable in maintaining the alkaline reserve of the body (Rumezaet, *al.*, 2006). According to (Food and Agricultural Organization (FAO), 2009) vegetables are a good source of income for women farmers and offers opportunities for the disables to earn a living. Vegetables have great export potentials and are good sources of foreign exchange earnings (Agropedia, 2009)

The significance of vegetables makes the production an all season crops. However, its production is hindered in the developing economy because of the high dependence on rainfall. Hence, a majority of vegetable producers utilizes wetlands (usually called Fadama) - supplemented with a simple irrigation system to raise vegetables. Both Governments and development agencies promote income-generating projects as a way of encouraging growth through increased agricultural production. For instance, there are dry season vegetable

producers under the Fadama scheme in all the state of the Federation. In fact, the production of vegetables during the dry seasons has been a source of employment and income to the farmers for decades. Hence, most of the farmers producing dry season vegetables embark on the use of small scale low-cost irrigation techniques.

However, since the cultivation of dry season irrigated vegetables, there are lots of differences in the quality of the plants produced regarding texture, coloration, length and size of leaves, durability, and taste and the quantity of vegetables produced. Also, dry season vegetable production is seen as a way of alleviating poverty among the rural dweller. The effects of dry season vegetable production have not significantly affected the livelihoods of the producers since most of the vegetables farmers are still impoverished. The reduced productivity might result from inadequate information on improved practices of production and poor post-harvest management. Hence, the study is embarked upon to investigate the challenges and information needs of the dry season vegetable producers in Ondo state. According to (Robert, Strong, 2015) Developing an understanding of farmers' needs is the first step in planning educational programs targeted to specific farmers. Needs Assessments are used to identify strategic priorities and define end results (Needs Assessment.org., 2015). It guide decisions related to appropriate actions to be taken, establish evaluation criteria for making judgments of success, and inform the continual improvement of activities within organizations (Needs Assessment.org, 2015). Needs Assessments set out to determine accomplished goals and then make recommendations about which activities will be most useful for achieving those results (Needsassessment.org, 2015). It is also paramount to note that the production of improved vegetables requires the adoption of some agricultural practices. According to CIMMYT Economics Program (1993), there are stages of adoption of improved technologies. The steps involve awareness, interest, trial, adoption. The most significant of the stages is the awareness phase, and this requires information. Hence, the research is carried out to investigate the information needs dry season vegetable producers in Akure South Local Government area of Ondo state. The specific objectives includes to:

- Describe the socio-economic characteristics of dry season vegetable farmers in Ondo state
- Identify the self-perceived challenges of dry season vegetable farmers in Ondo state
- Determine the information needs of the farmers on dry season vegetable production

II. Materials and Methods

The study was carried out in Akure Metropolitan area in Ondo state. The study concentrated on four major dry season vegetables commonly grown and consumed in the area. They are: African spinach, "Green" (*Amaranthus Hybridus*). The local names for African spinach are Inine (Igbo), EfoTete (Yoruba), teteleegun (yoruba), allayahu (Hausa); *Fluted Pumpkin Leaves (Telfairia Occidentalis*. The local names are Uguin (Igbo), and kabewa (Hausa). The third vegetable is Jute leaves orsaluyot leaves (*Corchorus Olistorus*). The local names are Ewedu (Yoruba), Ayoyo (Hausa/Fulbe) and Okra *Abelmoschus esculentus*, which is also called Lady's finger. The local names are Ila in (Yoruba) gombo, gumbo (French); bandakai, bindi (India); Kachangbendi (Malay); quimgombó (Spanish) (Dobbyssignature, 2015). The respondents were selected through a multi-stage sampling procedure. The first stage involves a purposive selection of the two Local Government Areas (LGAs) that are in the metropolis. They are Akure South and Akure North Local Government areas. The two LGAs were purposively selected due to the prevalence of dry season vegetable growers in the area. The second stage involves a random selection of two communities from each LGA. They are Oritaobele and Ondo Road in Akure South LGA and, Igoba and Itaogbolu in Akure North LGAs. The study population comprises all the dry season vegetable producers in the communities; however a snowball technique was used to select 20 respondents from each community, thus a total of 80 respondents that produces dry season vegetables were selected and utilized for the study.

A structured interview schedule was used in collecting data from the respondents. The data on the challenges faced by the farmers were analyzed using frequency counts and percentages, means and standard deviation. Also, the Relative Importance Index (RII) was used to analyze data on the information needs of the vegetable farmers.

The mean score for the Information needs of the farmers were collected in a 3– point continuum scale of Very Important (VI), Important (I) and Not Important (NI) and were assigned scores 3, 2 and 1 respectively. The results were calculated as weighted score for each of the areas where they needed information.

$$RII = \frac{\text{Sum of Weights (W}_1 + \text{W}_2 + \text{W}_3 + \dots + \text{W}_N)}{A \times N}$$

Where W = weights assigned to each factor by the respondents and it ranges from 1 to 3 where '1' is less significant and '3' is extremely significant. A = highest weight (i.e. 3 in this case), and N = total number of respondents.

$$\text{Weighted score} = \frac{\text{No of VI} \times 3 + \text{No of I} \times 2 + \text{No of NI} \times 1}{\text{Total No of VI} + \text{I} + \text{NI}}$$

Any weighted score below two is considered as not important and vice versa

III. Results and Discussion

Challenges of Dry Season Vegetable Farmers in Akure Metropolis in Ondo State

Data in Figure 1 reveals the challenges faced by the dry season vegetable farmers in the study area. According to the figure, 83.75% of the respondents have personal challenges, some of which are the health and family issues, 88.8% were facing financial challenges. The financial challenges focused on spare money to enlarge their scale of vegetable production, inability to access loans from the banks as well as the economic meltdown of the nation which cripples the sales of vegetables. Evidence from the studies of (Adebo and Ajiboye, 2014), (Okunmadewa *et al.*, 2005), (Apata *et al.*, 2010) shows that most of the small scale farmers in South Western Nigeria are poor. Despite the fact that they contribute immensely to food security in the region, Poverty inhibits their ability to enlarge their scale of production as well as their capacity to add value to their farm products

Also, 87.5% of the respondents indicated that they have marketing challenges. In recent times, there is few organized market in some capital cities in Nigeria. The sales of most farm products are carried out in the local and unorganized market. The majority of the respondents sell their products in an open market; several of the women involved their children in hawking vegetables. A lot of the valuable times of their children are spent hawking vegetables. Hawking exposes their children to various havocs regarding accidents and abuses. Lack of organized markets results in wastages, thus reducing the profit margin of the farmers.

Another major challenge faced by the majority (90%) of the vegetable farmers is poor storage and preservation strategies. Most of the vegetables, especially *Corchorus Olistorus* and *amaranthus Hybridus*, and okra are highly perishable hence require enough storage and conservation strategies to increase their shelf life. However, due to poor storage and preservation strategies cum unorganized markets, a vast proportion of the vegetables got spoilt a few days after harvesting. The findings of (Ebewore and Achoja, 2013) and (Ibeawuchi, 2015) shows that Fruits and vegetables still continue with the physiological functions of respiration after harvesting, thus leading to deterioration in transit and storage. (Olasantan *et al.*, 2015) stated that some biological factors affecting the production of vegetables include the Perishable nature; Pests and diseases problems and the reduced fertility and acidity of the soil.

According to Figure 1, inadequate information is one of the greatest challenges affecting over 92.5% of the vegetable farmers. Access to information, according to the respondents was the most magnificent and a substantial challenge that cut across all other challenges. Most of the respondents lack information on how to solve their personal challenges, how to preserve and store their vegetables, how to access loan with little or no collateral security and other marketing information required to meet the consumer's needs. Lack of data bank to access information on agriculture impedes agricultural production in Nigeria. Besides, the large number of farmers to Extension agents in Nigeria crippled information dissemination among farmers in Nigeria. The primary activity of extension agents is information dissemination to farmers. However, Agbamu (2005) and Koyenikan, (2008) emphasized that agricultural Extension in Nigeria is bewildered with several challenges. Some of the problems are inadequacy and instability of funding, poor logistic support for field staff and use of poorly trained personnel at the local level. Others are futile agricultural research extension linkages, deficient agricultural technologies for farmers, unbalanced Extension Agent to Farm Family ratio and shortage of clientele participation in program development. They are also bewildered with inadequate input supply, irregular evaluation of extension programmes and policy, institutional and programme instabilities of National agricultural extension systems (Agbamu, 2005). Adebo and Ewuola, (2002) asserted that the adoption of improved technology in Nigeria requires information and effective communication. They affirmed that contact farmers had access to agricultural information mostly through farm and home visit. With the teaming population in Nigeria, farm and home visit will no longer be useful for information dissemination among farmers.

A good proportion (70%) of the respondents indicated that they face challenges caused by natural disaster. The inherent challenges are in the form of land resources and management, Climate Variability and pests and disease attack. Research findings of (Ibrahim and Omotesho, 2009) shows that the poor management of land resources hinders the sustainable vegetable production under Fadama in Northern Nigeria. More so, (Adebo and Sekumade, 2013) findings revealed that the women in rural Ekiti have no access to information on Climate Change and the technological options to manage climate variability. (Olasantan *et al.*, 2015, and Ibrahim and Omotesho, 2009) studies affirmed that pest and diseases attack hinder vegetable production in Nigeria. It is imperative that farmers require information on how to forestall all the challenges enumerated to achieve a sustainable dry season vegetable production in Nigeria.

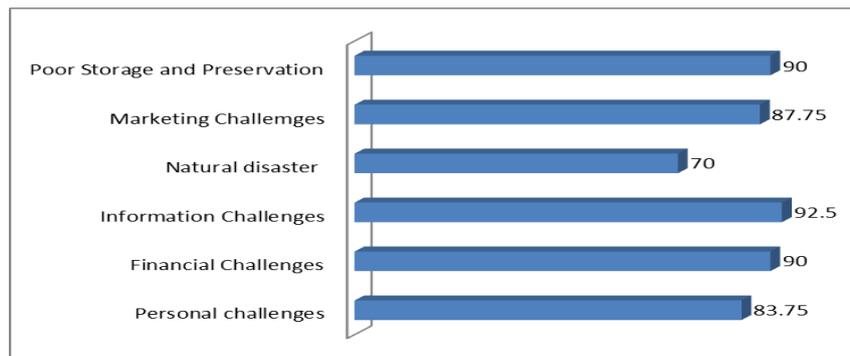


Figure 1: Challenges facing dry season vegetable producers in Ondo

Information Needs Of Dry Season Vegetable Farmers

Data in Table 1 shows the information needs of the dry season vegetable farmers. The researchers classified the information needs of dry season vegetable farmers into five major groups. The groups are pre-planting operations; planting and post-planting operations; harvesting and post-harvesting information; market Access and information on finance. Each of the group has variables ranging from two to nine. It is paramount to note that all the five groups have their areas of information needs. However, two of the five groups require information in all the aspects of the variables. These are information on finance and market access.

The two variables under the Information on finance were significant and rated very important in the index with 200 and 169 scores respectively. They also occupy the 1st and the 11th positions respectively. It indicates that dry season vegetable producers require information on how and where to access loans/ credit to boost their vegetable production. According to the findings of Okojie *et al.* (2010) and Akinagbe & Uchechukwu, (2014), small-scale farmers in Nigeria find it difficult to improve their productivity due to inadequate financing. Muhammad (2008) and Adebayo and Adeola (2008) also affirmed that small-scale farmers mostly use the informal sources of credit. However, the amount of loan disbursed through the informal sources are small, hence, could not transform farmers productivity at an appreciable level. Despite the several efforts made by the Federal Government of Nigeria to increase farmer's productivity through the creation of various credit sources, most of the farmers have not been able to key into such initiatives nor benefit from such a gesture. The farmers in different farm enterprises have not been able to organize themselves into viable agricultural groups.

Furthermore, all the variables under market access were significant. They are knowledge of market requirement, the formation of marketing days to create awareness for their produce, information on where to sell their produce and the formation of associations for better bargaining. According to Nobeji *et al.*, (2015), market access ought to be the first set of information available to farmers before the planting of crops. The market determines what to produce in most developed economies. That is, farmer's productivity is market driven unlike in Nigeria and most developing nations. A lot of farm produce are wasted due to poor and inadequate market access. The majority of the farmers and their children engaged in hawking of vegetables in streets due to poor market access. The act of peddling exposes some of their children to hazards in forms of road accidents and abuses. There is a critical need to make information on market access available to dry season vegetable farmers before embarking on vegetable production.

Of the pre-planting operations, the means of acquiring farm labor is the only relevant and significant information needs of the dry season vegetable producers. It indicates that although the farmers require information on seed choice, seed rates, and land preparations, they are not important and significant hence they ranked low in the importance index.

Dry season vegetable farmers require farm labour for all their farm operations. According to Anselm and Amus (2010), Nnenna (2011), low farm labour is one of the greatest challenges facing farmers in South-west Nigeria. Most of the youths have migrated to cities for white collar jobs. Adebayo and Sekumade (2013) also indicate that young people are not interested in taken up Agriculture as a profession.

Among the planting and post-planting operations, only irrigation and the use of organic manures were the most important and significant needs of the dry season vegetable farmers. Irrigation is very germane to dry season vegetable production. Water plays a critical role in seed germination and growth and maturity of crops. Vegetable production during dry season relies on irrigation. Inadequate knowledge of irrigation methods and facilities might hinder the farmer's productivity. According to Dauda *et al.* (2009), Onyeneke & Madukwe, (2010), Audu (2012) and Oni (2013), farmers in Nigeria depend on rain-fed agriculture. The over-dependence on rainfall significantly reduces their productivity and makes them remain poor. Most farmers have enough and surplus during the rainy season but are penniless and lack during the dry season.

The use of organic manure was very significant and thus, rated high on the importance index. The farmers do not utilize a lot of waste generated from plants and animals on the farm. Such wastes include poultry

and animal wastes and woods. Most of the farmers still engage in the burning of farms after clearing. The act reduces soil fertility. The demand for organic crops is gaining ground in developed economies, and there is the need for Nigeria farmers to key into it and thus, enhance their income.

All other planting and post planting operations are rated low in the importance index and are also not significant to the dry season vegetable producers (See Table 1).

Almost all the variable under the harvest and post-harvest technologies are important to the dry season vegetable farmers. They are proper harvesting methods, proper packaging, and storage techniques and grading of vegetables. The implication is that most of the dry season vegetable producers have poor knowledge of harvesting and post-harvest technologies. According to Adebayo *et al.* (2013), most farmers lack access to modern methods of harvesting, processing and storage. World Bank *et al.* (2011) also reports that despite the low total agricultural productivity, post-harvest losses of the food produced are significant. They stressed that pre-harvesting management, processing, storage infrastructure and market facilities are either not available or are inadequate in the low-income countries. Lisa *et al.* (2010) affirm that poor/ lack of post-harvest technologies pose significant challenge to Agricultural production in the developing economy.

There is the need to make information on harvest and post-harvest technologies available to dry season vegetable producers in Ondo state.

Table 1: Information needs of dry season vegetable farmers

S/N	Variables	Importance rating		Importance Index	
		Mean	Standard Deviation	Index	Rank
	Information needs of dry season vegetable farmers				
1.	Pre-planting operations				
	a. Seed choice	1.4	7.9	116	20 th
	b. Seed rates	1.38	10.34	110	23 rd
	c. Acquiring adequate farm labour	2.11	0.21	169	11 th
	d. Land preparation	1.8	3.50	147	14 th
2.	Planting & post planting operations				
	a. Seed rates	1.38	10.34	110	23 rd
	b. Spacing	1.34	10.32	106	25 th
	c. Thinning methods	1.4	7.9	116	20 th
	d. Mulching	1.5	6.78	120	17 th
	e. Irrigation	2.3	0.21	184	4 th
	f. Use of organic fertilizer	1.75	5.60	142	15 th
	g. Use of inorganic fertilizer	2.17	0.18	174	9 th
	h. Crop rotation	1.36	10.6	108	24 th
	i. Pest & diseases management	1.6	4.5	128	16 th
3.	Harvesting & Post harvesting operations				
	a. Proper harvesting methods	2.18	0.16	175	8 th
	b. Time to harvest	1.5	6.78	120	17 th
	c. proper packaging	2.3	0.21	184	4 th
	d. storage techniques	2.37	0.24	189	3 rd
	e. grading of vegetables	2.25	0.20	180	7 th
4.	Market information				
	a. Knowledge of market requirements	2.11	0.21	169	11 th
	b. Formation of marketing days to create awareness	2.38	0.24	190	2 nd
	c. Care in handling of produce	2.37	0.24	184	4 th
	d. Where to sell	1.8	3.50	117	19 th
	e. Formation of association for better bargaining	2.12	0.13	170	10 th
5.	Information on finance				
	1. Where to access loan	2.11	0.21	169	11 th
	2. How to access loans	2.5	0.28	200	1 st

IV. Summary. Conclusion and recommendations

4.1. Summary

The study was carried out to investigate the challenges and information needs of the dry season vegetable producers in Akure South and Akure North Local Government areas. Eighty respondents were selected through a multistage sampling technique. A structured interview schedule was used in collecting data from them. The data on the challenges faced by the farmers were analyzed using frequency counts and percentages, means and standard deviation. Also, the Relative Importance Index (RII) was used to analyze data on the information needs of the vegetable farmers. The average score for the Information needs of the farmers was collected on a 3– point continuum scale of Very Important (VI), Important (I) and Not Important (NI) and were assigned scores 3, 2 and one respectively. The results were calculated as a weighted score for each of the areas where they needed information.

Inadequate information is one of the greatest challenges affecting over 92.5% of the vegetable farmers. Others include poor storage and preservation strategies, financial problems, marketing challenges and problems caused by natural disaster.

The researchers classified the information needs of dry season vegetable farmers into five major groups. The groups are pre-planting operations; planting and post-planting operations; harvesting and post-harvesting information; Market Access and Finance. All the five groups have their areas of information needs. However, two of the five groups require information in all the aspects of the variables. These are information on Finance and Market Access. The study shows that the dry season vegetable producers need information on how and where to access loans/ credit to boost their vegetable production. They also need information on the market access. It entails knowledge of market requirement, the formation of marketing days to create awareness for their produce, information on where to sell their produce and the formation of associations for better bargaining. Of the pre-planting operations, the means of acquiring farm labor is the only relevant and significant information needs of the dry season vegetable producers. Among the planting and post-planting operations, only irrigation and the use of organic manures were the most important and significant needs of the dry season vegetable farmers. Almost all the variable under the harvest and post-harvest technologies are important to the dry season vegetable farmers. They are proper harvesting methods, proper packaging, and storage techniques and grading of vegetables.

4.2. Conclusions

The dry season vegetable producers require information on how and where to access loans/ credit to boost their vegetable production. They also need information on the market access. Most of the dry season vegetable producers have poor knowledge of harvesting and post-harvest technologies. They require information on the means of acquiring farm labor as well as for irrigation and the use of organic manures. They also need information on proper harvesting and packaging methods, as well as on the storage and grading techniques of vegetables.

4.3. Recommendations

There is the need to organize dry season vegetable farmers into viable groups. The groups will enhance their ability to access loans from the Bank of Agriculture and other financial institutions. The government should ensure that most of the cities in Nigeria have organized markets. Consumers' forum could also be organized. Issues relating to the needs of the users could be made known at meetings and communicated to the farmers before planting. The government and Non-Governmental organizations and extension agents should come to the aids of the dry season vegetable farmers and organize training programmes for them. Information needed regarding market access, could be made available through the television for wider coverage. The information needs could be printed in the local languages of the farmers and published in Leaflets, posters, and handbills. There is the need to obtain information on harvest and post-harvest technologies available to dry season vegetable producers in Ondo state.

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