

Entrepreneurial Skills Improvement Needs of Women in Tomatoe Production for Profitability and Sustainable Development in Bayelsa State

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Abstract

This paper identified entrepreneurial skills improvement needs of women in tomatoes production for Profitability in Bayelsa State, Nigeria. Three research questions were raised and answered for the study. Survey research design was adopted for the study which was carried out in Bayelsa State, Nigeria. The target population of the study was 325 comprising of 250 women and 65 Agricultural Extension officials in Bayelsa State, which were all used for the study as sample. A 25 item entrepreneurial skills improvement needs questionnaire on tomatoes was the instrument used for data collection. The instrument was face validated by three experts. Two hundred and forty- five copies of the questionnaire was retrieved and analyzed using weighted X (mean) and improvement need index (INI). Cronbach- Alpha reliability coefficient was used to determine internal consistency of the instrument which yielded entrepreneurial reliability coefficient of 0.82. The findings from the study revealed that women in Bayelsa State need entrepreneurial skills in pre-planting, planting, harvesting and marketing operations in tomatoes production. It was recommended amongst others that women in Bayelsa State should be trained by skill acquisition centres in tomatoes production using the identified entrepreneurial skills. The identified skills should be developed into training modules by agricultural extension officials and administration of skill acquisition centres for training interested individuals especially the women.

Keywords: Entrepreneurial Skills, Improvement Needs, Profitability, Sustainable Development Tomato Production.

Introduction

Tomato is a vegetable crop cultivated annually by peasant farmers in Bayelsa State. Tomato according to Miguel and Heuvelink (2018) is one of the world's major fresh and processed fruit and

is the second most important vegetable crop after the potato worldwide. Tomato belongs to the Solanaceae (nightshade family), genus *Solanum*, and section *Lycopersicon*. The author stated that tomato originated from South American and the Botanical name of tomato is *Lycopersicon esculentum*. Boeckmann (2023) stated that tomato plants are tender, warm-season crop that love the sun and cannot bear frost. The author stated that tomatoes can be raised in the nursery before they are transplanted to the permanent field or cultivated directly to the field. Bawden-davis (2018) opined that tomato is a sun loving plant that needs adequate ventilation to prevent common garden diseases of tomatoes. The author stated further that tomatoes grow best in a well-draining soil that's high in organic matter, with slightly acidic pH between 6.5 to 7.0.1 prior to planting, organic matter is increased by applying a 2- 3-inch layer of compost to the soil surface and tilling it into the soil, along with Lilly Miller Garden Gypsum. The author stated further that Gypsum helps loosen compacted soil and adds calcium, which helps to prevent calcium deficiencies that lead to blossom end rot. Iwena (2018) asserted that tomato can be planted in ridges or land can be prepared by ploughing, harrowing and ridging with its varieties as money-maker, valiant, pork, dwarf gem, mariglobe, ife plum, bonita, roma and local varieties. The author stated that tomatoes require a temperature of 20 degree -25 degree, rainfall of 50- 125cm, high level of sunshine and a well-drained loamy, rich in organic matter. The author stated further that harvesting of tomatoes starts as from two months, when ripe or mature they are hand-picked and stored in a cool dry place. Tomatoes play an important role in sustainable development because of their numerous environmental, economic, and social benefits.

Sustainable development is expected to bring lasting socio-economic benefits to all people and the environment. Sustainable development according to Mohamed (2016) is a pattern of economic growth in which resource use aims to meet human needs while preserving the environment so that these needs can be met not only in the present, but also for generations to come. Sustainable development according to Anjov, Weye, and Anyogo, (2019) means solving the needs of today in such a way that society and environment are not harmed. The author stated that development process must be visualized in this broadest context, if it is to meet the expectation of the citizenry for a more elevated standard of living. Women in Bayelsa can increase the level of tomatoes production by having entrepreneurial skills.

Entrepreneurial are the qualities, activities and mindset associated with being an entrepreneur. Entrepreneurial in the view of Agege, Lawal, and Olaitan (2019), is a process through which

individuals identify opportunities, allocate resources and create value. The creation of value according to the author is often through the identification of unmet needs or through the identification of opportunities for change. The author stated further that Entrepreneurial success is simply a function of the ability of an Entrepreneurial to see these opportunities in the market place, initiate change and create value through solutions. Entrepreneurial in the view of InfoTech Inc (2019) is the ability of an individual to develop, organize and manage a business venture along with any of its risks. Entrepreneurial involves a combination of skills and actions that enable individuals to create and grow businesses.

Skill is a specific competency that allows individuals to perform tasks, solve problems or accomplish goals effectively and efficiently. Skill in the opinion of Ekezie (2020) is an individual's capability to control component of behavior, thinking and feeling within specified frameworks and a particular task domain. Skill is defined as the ability and capacity acquired through deliberate systematic and sustained effort to smoothly and adaptively carryout complex activities or job functions involving ideas, things and/or people i.e. cognitive skills, technical skills and interpersonal skills respectively (BusinessDictionary.com, 2017).

In the context of this study skill is the ability, expertise or competency acquired through training and experience that will enable these Bayelsa women to perform task, or accomplish their goals effectively in tomatoes production. These skills are required by Bayelsa women to enhance profitability in their business.

Profitability is the primary goal of all business ventures. According to Marinela, G. (2016). Profitability means obtaining an income from production sale that should exceed expenses and mirrors the efficiency of an enterprise's whole economic activity. In the view of Toshniwal, (2016). Profitability is a core measure of the performance of a firm and it constitutes an essential aspect of its financial report. The author stated that profitability reveals the firm's ability and capacity to generate earnings at a rate of sales, level of assets and stock of capital in a specific period of time.

In the context of this study profitability is the ability of Bayelsa women to earn a return from tomato production, for these women to increase their earning capacity they need improvement in tomato production.

Improvement is the process of making something better than what is was before. Okwelle (2019) described improvement as enhancement of a process of economic, social, political and cultural changes engineered in a given society by the effort of internal and external stakeholders. He

stressed that improvement requires, enhancement of human and social capital to optimize social and economic development. Improvement needs in the view of Odu, (2019) is an areas within a system or process that require attention and modification to enhance performance, efficiency, quality, or overall outcomes. The author stated that, they are identified through careful analysis, evaluation, and feedback from stakeholders or users. From the above definitions, Improvement needs are not limited to fixing existing problems; they also encompass opportunities for innovation and staying ahead of the curve.

In the context of this study improvement is the development of circumstances in which something that is lacking is provided to a high quality standard. The need for improvement always arises when there is a gap to fill.

Although tomato is an important crop for most Nigeria citizens, yet, its production is still at subsistence level, not meeting the needs of the population. In spite of the efforts being made by tomatoes farmers, its cultivation is still at a small scale production despite the concerted effort by the government to make Bayelsa State self- sufficient in food production. most women produce tomatoes only for family use and very little for the market, perhaps the low output produced by women in tomatoes production in Bayelsa State may be due to low level of entrepreneurial skills in tomatoes production. Moreover, it could be that the low output results to subsistence level of tomatoes production though tomatoes contribute a significant proportion of the food required by the population. The production capacity is far below the nation requirements and tomatoes requirement is bound to reduce drastically. The researchers observed that most women in tomatoes production produce tomatoes only for subsistence level and not for sale which cannot increase the wealth in Bayelsa women hence the study. The study seeks to identify the entrepreneurial skills improvement needs of women in tomatoes production for profitability in Bayelsa State.

Purpose of the Study

The major purpose of the study was to determine the entrepreneurial skills improvement needs of women in tomatoes production for profitability and sustainable development Bayelsa State. Specifically the study sought to determine the entrepreneurial skills improvement needs of women in:

1. Pre-planting operations in tomatoes production;
2. Planting operations in tomatoes production;
3. Harvesting and marketing operations in tomatoes production.

Research Questions

The following research questions were raised

1. What are the entrepreneurial skills improvement needs of women in pre- planting operation in tomatoes production?
2. What are the entrepreneurial skills improvement needs of women in planting operation in tomatoes production?
3. What are the entrepreneurial skills improvement needs of women in harvesting operation and marketing of tomatoes?

Methodology

Survey research design was adopted for the study. This is suitable because it collected data from sample of respondent's using questionnaire and the result was generalized on the entire population. The study was carried out in Bayelsa State. The target population for the study was 325, comprising of 250 women and 65 Agricultural Extension Officials from Bayelsa State. The entire population was involved in the study because it was small and manageable, hence no sampling. A 25 - item entrepreneurial skills improvement needs was developed from reviewed literature by the researchers and used for data collection. The questionnaire was divided into two response categories. The perceived need category has 4- point response scale of highly needed (4), averagely needed (3), slightly needed (2), and not needed (1). On the other hand, the performance category also has 4-point response scale of high performance (4), average performance (3), low performance (2), and no performance (1). The questionnaire was subjected to face validation by 3 experts, 2 from Department of Agricultural Education, University of Nigeria Nsukka, and *one* from Agricultural Economics and Extension, from Ambrose Alli University Ekpoma, Edo State. The internal consistency of the instrument was determined using Cronbach- Alpha method of reliability. The reliability coefficient established was 0.82, meaning that the instrument was valid for the study. The instrument was administered by the researcher, and with the help of two research assistance. The weighted mean and improvement need index (INI) were employed in analyzing data from the questionnaire items in order to answer the research questions. To determine the entrepreneurial skill improvement needs of women in tomatoes production, the following steps were taken: the mean (X_n) of the perceived need category was determined for each item and the performance category was also determined for each item. The performance gap category was also determined for each

item, the performance gap (PG) was then determined by finding the difference between X_n & X_p for each item i.e $PG = X_n - X_p$, Inference drawn from the calculation is given as:

1. Where the value of (PG) was positive (+) for each item, it indicates that women needed entrepreneurial skill improvement due to the fact that the level at which the women were performing is higher than what is needed. In other words, the level at which the skill item was needed was higher than the level at which the woman could perform the skill items.
2. Where the value of (PG) was negative (-) for each item, it shows that women needed entrepreneurial skill improvement due to the fact that the level at which the women were performing is lower than what is needed. In other words, the level at which the skill item was needed was lower than the level at which the woman could perform the skill items.
3. Where the value of (PG) was zero (0) for each item, it indicates that women needed no improvement in entrepreneurial skill because the level at which the women were performing the operation of the item is equal to the level that was needed. The level at which the skill item was needed was equal to the level at which women could perform the skills.

Results

Research Questions 1: What are the entrepreneurial skills improvement needs of women in pre- planting operation in tomatoes production?

Table 1: Performance Gap Analysis of Mean Ratings of the Responses of Agricultural Extension Officers and Women from Bayelsa State in Pre-Planting Operations in Tomatoes (N= 325) insert the table

S/ NO	Pre planting operations	X_n	X_p	$PG = (X_n - X_p)$	Remarks
1.	Select a suitable site for tomatoes production	3.66	2.79	0.87	IN
2.	Select well drain deep humus rich soil with good tilth and a Ph of 5.5-6.8	3.72	2.75	0.97	IN
3.	Select the soil conservative practices to adopt for tomatoes production.	3.68	2.88	0.80	IN
4.	Identify appropriate equipment for farm operations in tomatoes production.	3.65	2.70	0.94	IN
5.	Clear the site with cutlass, pack and burn.	3.80	2.74	1.06	IN
6.	Stump the stems using appropriate technology and pack it out.	3.70	2.77	0.87	IN
7.	Obtain, high yielding tomatoes varieties from a reputable supplier	3.74	3.07	0.67	IN
8.	Identify appropriate records to keep for tomatoes production.	3.65	2.70	0.94	IN
9.	The land is prepared by ploughing, harrowing and ridging	3.79	2.83	0.96	IN

10. Compost manure is applied on the ridges two weeks before transplanting. 3.78 2.76 1.02 IN

Key: IN= Improvement needed, X_n = mean of perceived need, X_p = mean of performance, PG = performance gap, N = number of respondent's.

Data in Table 1 revealed that, all the items had performance gap values ranging from 0.67 to 1.12 and were positive. This indicates that women from Bayelsa State need improvement in their performance in pre - planting operations in tomatoes production.

Research Questions 2: What are the entrepreneurial skills improvement needs of women in planting operation in tomatoes production?

Table 2: Performance Gap Analysis of Mean Ratings of the Responses of Agricultural Extension Officers and Women from Bayelsa State in Planting Operations in Tomatoes (N= 325)

S/NO	Planting operations	X_n	X_p	PG= (X_n - X_p)	Remarks
1.	Check the seeds for viability and plants only viable seeds	3.65	2.72	1.11	IN
2.	Planting is done early March/April, and best planted towards the end of rainy season November/December with irrigation	3.70	2.69	1.01	IN
3.	Space 60cm by 60cm without staking and 50cm by 30cm with staking	3.61	2.99	0.61	IN
4.	Thin seed to one per hole	3.64	2.54	1.10	IN
5.	Apply fertilizers (N:P:K) 15:15:15 to each plant three weeks after planting, or apply any compost or farmyard manure	3.68	2.72	0.96	IN
6.	Tomatoes seeds are broadcasted on the prepared beds	3.79	2.71	1.08	IN
7.	Tomatoes required a temperature of 20c-25c to thrive well	3.62	2.60	1.02	IN
8.	In most case tomatoes is planted or broadcasted on the nursery before transplanting.	3.61	2.99	0.61	IN
9.	Provide stakes to enable plants to stand erect and prevent lodging	3.73	2.62	1.11	IN
10.	Stems are tied or trained to the stakes which allow for good fruiting and keeps fruits from disease attack arising from contacts with soil	3.67	2.76	1.03	IN
11.	Weed at least twice between transplanting and fruiting	3.71	2.67	1.04	IN

Key: IN= Improvement needed, X_n = mean of perceived need, X_p = mean of performance, PG = performance gap, N = number of respondent's.

Data in Table 2 revealed that, all the items had performance gap values ranging from 0.67 to 1.12 and were positive. This indicates that women from Bayelsa State need improvement in their performance in pre - planting operations in tomatoes production.

Research Questions 3: What are the entrepreneurial skills improvement needs of women in harvesting and marketing operations in tomatoes production?

Table 3: Performance Gap Analysis of Mean Ratings of the Responses of Agricultural Extension Officers and Women from Bayelsa State in Harvesting and Marketing Operations in Tomatoes (N= 325)

S/No	ITEM STATEMENT: HARVESTING AND MARKETING OPERATIONS	Xn	Xp	PG= (Xn-Xp)	Remarks
1.	Water early in the morning, for sufficient moisture for plants	3.37	2.82	0.91	IN
2.	Maturity occurs between 2-3 months depending on the variety cultivated	3.64	2.71	0.93	IN
3.	Matured or ripe fruits are harvested by hand-picking or with a knife.	3.68	2.78	0.89	IN
4.	Harvest tomatoes at four or five days interval	3.70	2.69	1.09	IN
5.	Harvested fruits are stored in a cool dry place	3.67	2.76	0.90	IN
6.	The fruits are also stored as canned paste	3.75	2.71	1.04	IN
Marketing Operations					
7.	Sort and grade tomatoes fruits using sizes colour and variety	3.71	2.62	1.07	IN
8.	Fix appropriate prices for each grade based on market survey or demand	3.63	2.70	0.93	IN
9.	Advertise tomatoes fruits locally or through the media to attract buyers	3.68	2.80	0.88	IN
10.	Sale tomatoes at farm gate or transport the fruits to market for sale	3.61	2.72	0.90	IN
11.	Keep appropriate records of sales for sustainability and /or expansion	3.73	2.69	1.03	IN
12.	Calculate expenditure & income to balance profit or loss account	3.50	2.73	0.82	IN

Key: IN= Improvement needed, Xn = mean of perceived need, Xp = mean of performance, PG = performance gap, N = number of respondent's.

Data in Table 3 revealed that, all the items had performance gap values ranging from 0.67 to 1.12 and were positive. This indicates that women from Bayelsa State need improvement in their performance in pre - planting operations in tomatoes production.

Discussion of Results

The result of this study in Table 1 revealed that women needed improvement on ---- entrepreneurial skills in pre- planting. The skills are: select a suitable site for tomatoes production, select a well - drained soil (clay, loam or silt) among others. This result is corroborated by the

findings of Ekele and Wombo (2013) in a study on Meeting Capacity building needs of small- scale farmers in rice production for sustainable development in Kaduna State, where small- scale rice farmers were judged to possess capacity building needs in 10 land and seed preparation in rice production for sustainable development in Kaduna State. Examples of the land and seed preparation include: clear the land and burn the bush, use disk harrow to fine tilt, construct bunds to accumulate rain water, use tractor to uproot shrubs among others.

The result of study in Table 2 revealed that women need improvement on entrepreneurial skills in planting. The identified skills are: Check the seeds for viability and plant only viable seeds, 2-3 seeds per hole, plant in early, among others. This result in Table 2 is in consonance with the findings of Dahiru, Amojenu and Onu (2018) in a study on entrepreneurial Competencies needed by secondary school leavers in sesame seed production for food security in North Central Nigeria, where secondary schools leavers were judged to possess Entrepreneurial Competencies in 5 planting operations for food security. Examples of planting operations include: selection of viable sesame seeds for Planting, sow between 25-35 seeds per feet press the soil firmly around the sesame plant among others.

The result of the study in Table 3 revealed that women needed improvement on entrepreneurial skills in harvesting and marketing of tomatoes. The skills include; Maturity occurs between 2-3 months depending on the variety cultivated, Matured or ripe fruits are harvested by handpicking or with a knife, sort and grade tomatoes using sizes, colour and variety, fix appropriate prices for each grade based on market survey or demand. The result in Table 3 is in agreement with the findings of Asogwa and Onu (2013) who reported that competencies in harvesting and marketing of pawpaw include: determine at stage of maturity to harvest pawpaw pods based on the market channel, move around the orchard to. Identify mature pods using color change from green to light green, sort and grade pawpaw pods using size colour and variety, advertise pawpaw pods locally or through the media to attract buyers among others.

Conclusion and Recommendations

Based on the result obtained, it was therefore concluded that the identified entrepreneurial skills items were needed by women in tomatoes production for Profitability in Bayelsa State. it was therefore recommended that:

1. Women in Venue State should be trained by skill acquisition centres in tomatoes using the identified entrepreneurial skills;
2. The identified entrepreneurial skills in tomatoes production and Marketing should be developed into training modules by agricultural extension officers and administrators of skill acquisition centres for training interested individuals especially the women
3. The identified entrepreneurial skills should be used by agricultural extension officers to build the capacity of crop farmers in tomatoes production.

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