



Food Security in Nigeria: Effect on Small Scale Agribusiness. Aquaculture Challenges

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ABSTRACT

The role of fisheries and aquaculture in the provision of food and income especially in developing countries cannot be overemphasized. They are also contributors to economy development through tax, trade and license fees. This study investigated the effect of food security on small scale agribusiness in Nigeria with a focus on aquaculture challenges. Descriptive research survey was employed and purposive sampling method was used in selecting Badagry and Epe areas in Lagos state for the study. A simple random sampling method was used in selecting three fishing communities from each of these communities, making a total of six communities from where twenty artisan fishers who are involved in aquaculture were selected. The sample studied was 120 and data was collected by means of questionnaire. The data collected was descriptively analyzed using frequency and percentages. The result of the study revealed the following factors as responsible for food insecurity in Nigeria: Climate change and natural disasters; Inability to produce or purchase enough food for their needs; Insufficient production; Inefficient policies and corruption; and Civil insecurity and crisis. The result further identified the following as the effects of food insecurity on small scale agribusiness: decreases the ability of countries to develop their agricultural markets and economies; it creates insufficient household income; as well as limits the ability of small scale agribusiness to expand their businesses. Again the study identified the following challenges as confronting aquaculture in ensuring food security: Lack of access to quality inputs and financial resources; Poor infrastructure resulting in high costs of transactions; Shortage of technical and management skills; Security concerns on farms; Lack of credit facilities to fish farmers at low interest rate; Inadequate supply of good quality seed; High cost of seed; Disease; and access to markets in urban centers. Finally, the result from this study suggested how aquaculture could enhance food security in Nigeria. According to the study, aquaculture could enhance food security in Nigeria by reducing food prices; creating employment; improving farm income and increases wages; supplying local food to improve through the increased availability of low-cost fish; and by increasing the quantity and variety of fish and other foods consumed by the poor to reduce under-nutrition. Based on these results, conclusions were drawn and recommendations made.

Keywords: Aquaculture, food security, agribusiness

Introduction

The role of fisheries and aquaculture in the provision of food and income especially in developing countries cannot be overemphasized. They are also contributors to economy development through tax, trade and license fees (Wegren&Elvestad, 2018). In spite of the significance of aquaculture, the world is still plagued by malnutrition and hunger, especially the poor, most of who suffer from various forms of deficiencies. This challenge contrasts with the fundamental rights of humans to have access to food and be free from hunger and malnutrition, especially given the availability of resources and the knowledge to utilize these resources effectively. In this regard, aquaculture plays a significant role through its provision of fish and fresh water product, as well as serves as an avenue for employment opportunities. The provision of employment opportunity is important for artisan fishers whose survival is dependent on small scale fishing activities. Thus, the support of aquaculture influences the availability of fresh marine products and ensures it benefits those in need of it, to which end the role of small scale agribusiness becomes important (Oyase&Jemerigbe, 2016).

One of the goals of the United Nations Millennium Development Goals (MDGs) is the achievement of food security globally. In line with the reduction of food insecurity and increasing income for rural dwellers, the USAID (2011) proposed several steps; such as boosting aqua cultural science and technology, securing of property rights and ensuring financial access, improving human capital and health through education, preventing conflict and encouraging good governance as well as transparency in public offices (Oyase&Jemerigbe, 2016).

In spite of the measure put in place to eradicate food insecurity, the challenge of under nutrition still persists in a lot of countries (Pawlak&Kołodziejczak, 2020). It is no doubt that food is a basic human need necessary to human survival, and to this end, efforts have been made towards ensuring food security and improving production of food supplies globally, especially in Nigeria, where a lot of deaths related to malnutrition has been reported (Matemilola&Elegbede, 2017).

Statement of problem

Adequate food production is an important requirement for social and economic justice. The ability of a nation to sufficiently feed its population gives such nation a place of pride amongst other nations. Nigeria is abundantly blessed with vast resources that can adequately feed its population and still be exported for revenue. However, the country is consistently besieged by food crisis and issues of malnutrition (Oyase & Jemerigbe, 2016). Thus, the issue of food insecurity which is brought about by poverty minimizes a nation's ability to effectively develop their agricultural markets and secure a access to food. In Nigeria, a large percentage of the people are involved in the production of food and aquatic plants and animals but this does not ensure that everyone, particularly the underprivileged, will be able to access the minimum food requirement due to economic, social and regional disparities that exist. In view of the foregoing, this study examines the effect of food security on small scale agribusiness in Nigeria with a focus on aquaculture challenges.

Research objectives

The study specifically aims to;

1. Identify the factors responsible for food insecurity in Nigeria.
2. Examine the effects of food insecurity on small scale agribusiness.
3. Ascertain the challenges faced by aquaculture in ensuring food security.
4. Examine how aquaculture can be used to enhance food security in Nigeria.

Research questions

1. What are the factors responsible for food insecurity in Nigeria?
2. What are the effects of food insecurity on small scale agribusiness?
3. What are the challenges faced by aquaculture in ensuring food security?
4. How can aquaculture be used to enhance food security in Nigeria?

Literature review

Food being a basic survival need of humans has necessitated many efforts in improving its quality and production globally and despite these efforts, food security prevails especially in Asia and Africa, where malnutrition has caused the deaths of many. Food security according to Hlophe-Ginindza and Mpande (2020) is defined as the accessibility to safe, nutritious food and a definite competence to obtain good, quality food in a way that is socially acceptable. Food security is not just connected to global issues like a surge in the demand for energy, population growth, and climate change but also important in economic growth, global security and stability, poverty reduction, trade opportunities, healthcare improvement and job creation (Matemilola & Elegbede, 2017).

Aquaculture involves the farming of aquatic animals and plants. Agribusiness includes farming and farming-related commercial activities and the process involved in sending goods to the market from production to distribution (Chen, 2021). For some rural populations, food insecurity may arise due to the inability to produce or purchase enough food for their needs (Ojeleye, 2015). The agricultural sector plays a strategic role in improving food availability and attaining food security (Wegren & Elvestad, 2018). Increasing the output of agriculture and increasing the range of agricultural land use ensures food provision and seems to be a potential way to eliminate hunger (Smith et al., 2015).

Food insecurity according to Matemilola & Elegbede (2017) are caused in Nigeria by:

Insufficient production: this results from the overdependence of the agricultural sector on primary agriculture system practiced mostly by farmers without access to facilities needed for optimum production of food.

Climate change and natural disasters: these affect output, accessibility and distribution of agricultural produce especially in developing countries. The impact of natural disasters like flood, drought and landslide are more prominent in areas where agriculture is dependent on rainfall.

Inefficient policies and corruption: when policies regarding agriculture and other related sectors are ineffective and not properly administered, hunger certainly becomes worse.

Civil war and conflict: food production is highly affected by conflicts and crisis which may be in form of structural violence, physical fights, police brutality, monopolization of power and resources, etc. In the extreme northern states of Nigeria where there is civil insecurity, farmlands have been turned to fields for battle and farmers have fled to safety.

Challenges faced by small scale farmers and agribusinesses limit their access to productive resources and plunge them into poverty such as lack of assets to quality inputs and financial resources, poor infrastructure resulting in high costs of transactions (Mutea et al., 2020). Aquaculturists face challenges such as inadequate access to finance and farmlands, shortage of technical and management skills, security concerns on farms (Madibana et al., 2020).

Empirical studies

Sanusi and Dansabe (2015) examined the problems and prospects of small-scale fish farming and their implications on increased fish food security in Minna Agricultural Zone of Niger state, Nigeria. Data obtained from 65 fish farmers were analyzed and results revealed that farmers encountered major constraints like high cost of feeds, scarcity of quality brooding stocks, lack of capital, high labour costs, mortality rate due to diseases and poor storage facilities.

Ojeleye (2019) set out to understanding the factors that determine household food security status among farmers in Zango-Kataf and Kachia local government areas of Kaduna State, Nigeria. Data obtained by random sampling from 150 farmers in four communities were analyzed and it was observed that 74% of the respondents were food secured while 26% were not and the factors that determined their food security status included their household size, use of consumption credit, dependency ratio, and access to markets, membership association and health expenditure.

Mutea et al. (2020) explored the main factors in the respective bundles of rights and powers that influence the food security of households around north-west Mount, Kenya by sampling a total of 76 households comprising an equal number of food secure and insecure households. Results showed that difficulty encountered in accessing farm technology such as farm implements and tools, by food insecure household was a major factor that prevented access to productive resources.

Theoretical framework

The Theory of Access hypothesizes how access to resources is obtained, sustained, and controlled (Ribot & Peluso, 2003). People may be able to access a certain resource, but may not be able to use it productively enough to benefit from it as a result of lack of structural and relational mechanisms. Access requires that individuals and small scale agribusinesses have enough resources to obtain or produce food. Sustainable livelihood outcomes are attainable through the ability to get, sustain, control, and increase resources on which livelihoods depend.

The theory of access helps in identifying the main factors that enable small scale agribusinesses to benefit from productive resources and achieve food security. A farmer may possess the right to use a land but not have access to labour or the capital to employ labour (McKay & Colque, 2016). Restricted access to productive resources makes small scale farmers and agribusinesses susceptible to food insecurity and results in livelihoods that are unsustainable.

Methodology

Descriptive research survey was employed in this study. Purposive sampling method was used in selecting Badagry and Epe areas in Lagos state for the study. Random sampling method was used in selecting three fishing communities from each of these communities, making a total of six communities. From these communities, twenty artisan fishers involved in aquaculture were selected as respondents for the study, making a total of 120 respondents. Questionnaire was used as the source of data collection. The instrument was designed using a four scale likert format. It was distributed to the respondents with the aid of research assistants engaged for such purpose as well as translation purpose, given the low literacy levels of the populace. The data collected was descriptively analyzed using frequency and percentages.

Data Presentation, Analysis and Discussion

RQ1: What are the factors responsible for food insecurity in Nigeria?

Table 1: Factors responsible for food insecurity in Nigeria

ITEMS		SA	A	D	SD	Percentage in agreement
Climate change and natural disasters	F	30	90	0	0	100.0
	%	25.0	75.0	0.0	0.0	
Inability to produce or purchase enough food for their needs	F	45	70	1	4	95.8
	%	37.5	58.3	0.8	3.3	
Insufficient production	F	29	81	4	6	91.7
	%	24.2	67.5	3.3	5.0	
Inefficient policies and corruption	F	33	79	2	6	93.3
	%	27.5	65.8	1.7	5.0	
Civil insecurity and crisis	F	50	69	1	0	99.2
	%	41.7	57.5	0.8	0.0	

Field Survey (2021)

The table above presents the respondents opinions on factors responsible for food insecurity. According to the total percentage in agreement, all the items in the table are accepted as being responsible for food insecurity in Nigeria. With above 90% in agreement, the following factors are responsible for food insecurity: Climate change and natural disasters; Inability to produce or purchase enough food for their needs; Insufficient production; Inefficient policies and corruption; and Civil insecurity and crisis. This result confirms the outcome from some earlier studies such as Mutea et al., (2020) and (Madibana et al., 2020) respectively who shared similar outcomes.

RQ2: What are the effects of food insecurity on small scale agribusiness?**Table2: The respondents' opinions on the effects of food insecurity on small scale agribusiness**

ITEMS		SA	A	D	SD	Percentage in agreement
Decreases the ability of countries to develop their agricultural markets and economies	F	33	79	2	6	93.3
	%	27.5	65.8	1.7	5.0	
Creates insufficient household income	F	45	70	1	4	95.8
	%	37.5	58.3	0.8	3.3	
Limits the ability of small scale agribusiness to expand their businesses	F	29	81	4	6	91.7
	%	24.2	67.5	3.3	5.0	

Field Survey (2021)

The table above revealed the respondents' opinion on the effects of food insecurity on small scale agribusiness. According to the result, food insecurity decreases the ability of countries to develop their agricultural markets and economies; it creates insufficient household income; as well as limits the ability of small scale agribusiness to expand their businesses. This result supports the findings of some earlier studies such as Wegren and Elvestad (2018), and Oyaseand Jemerigbe (2016) respectively.

RQ3: What are the challenges faced by aquaculture in ensuring food security?**Table 3: Presents the respondents opinion on the challenges faced by aquaculture in ensuring food security**

ITEMS		SA	A	D	SD	Percentage in agreement
Lack of access to quality inputs and financial resources	F	20	95	0	5	95.9
	%	16.7	79.2	0.0	4.2	
Poor infrastructure resulting in high costs of transactions	F	45	70	1	4	95.8
	%	37.5	58.3	0.8	3.3	
Shortage of technical and management skills	F	29	81	4	6	91.7
	%	24.2	67.5	3.3	5.0	
Security concerns on farms	F	33	79	2	6	93.3
	%	27.5	65.8	1.7	5.0	
Lack of credit facilities to fish farmers at low interest rate	F	50	69	1	0	99.2
	%	41.7	57.5	0.8	0.0	
Inadequate supply of good quality seed	F	30	90	0	0	100.0
	%	25.0	75.0	0.0	0.0	
High cost of seed	F	45	70	1	4	95.8
	%	37.5	58.3	0.8	3.3	
Disease	F	29	81	4	6	91.7
	%	24.2	67.5	3.3	5.0	
access to markets in urban centers	F	33	79	2	6	93.3
	%	27.5	65.8	1.7	5.0	

Field Survey 2021

The following are the challenges confronting aquaculture in ensuring food security: Lack of access to quality inputs and financial resources; Poor infrastructure resulting in high costs of transactions; Shortage of technical and management skills; Security concerns on farms; Lack of credit facilities to fish farmers at low interest rate; Inadequate supply of good quality seed; High cost of seed; Disease; and access to markets in urban centers. This result supports:

Sanusi and Dansabe (2015), Ojeleye (2019) and Mutea et al. (2020) who in their respective studies identified some of these factors as challenges confronting aquaculture in ensuring food security.

RQ4: How can aquaculture be used to enhance food security in Nigeria?**Table 4: How aquaculture could enhance food security in Nigeria**

ITEMS		SA	A	D	SD	Percentage in agreement
Reduces food prices	F	30	90	0	0	100.0
	%	25.0	75.0	0.0	0.0	
Creates employment	F	49	71	0	0	100.0
	%	40.8	59.2	0.0	0.0	
Improves farm income and increases wages	F	35	81	4	0	96.7
	%	29.2	67.5	3.3	0.0	
Local food supplies can be improved through the increased availability of low-cost fish	F	33	79	2	6	93.3
	%	27.5	65.8	1.7	5.0	
Increases the quantity and variety of fish and other foods consumed by the poor to reduce under-nutrition	F	65	54	1	0	99.2
	%	54.2	45.0	0.8	0.0	

Field Survey (2021)

The result presented in table 4 above indicates how aquaculture could enhance food security in Nigeria. With above 90% in agreement, the study revealed that aquaculture could enhance food security in Nigeria by Reducing food prices; creating employment; improving farm income and increases wages; supplying local food to improve through the increased availability of low-cost fish; and by increasing the quantity and variety of fish and other foods consumed by the poor to reduce under-nutrition. The result supports the findings of the study carried out by Ojeleye (2015); Wegren and Elvestad, (2018) and Chen, (2021) respectively.

Conclusions and Recommendations

Food remains one of the basic necessities of life without which one can hardly survive. As a result, there is need to continually improve the quality of food production and security to make life better. Food security according to Hlophe-Ginindza and Mpandeli (2020) is the accessibility to safe, nutritious food and a definite competence to obtain good, quality food in a way that is socially acceptable. This study investigated the effect of food security on small scale agribusiness in Nigeria with a focus on aquaculture challenges. The result of the study revealed the following factors as responsible for food insecurity in Nigeria: Climate change and natural disasters; Inability to produce or purchase enough food for their needs; Insufficient production; Inefficient policies and corruption; and Civil insecurity and crisis. The result further identified the following as the effects of food insecurity on small scale agribusiness: decreases the ability of countries to develop their agricultural markets and economies; it creates insufficient household income; as well as limits the ability of small scale agribusiness to expand their businesses. Again the study identified the following challenges as confronting aquaculture in ensuring food security: Lack of access to quality inputs and financial resources; Poor infrastructure resulting in high costs of transactions; Shortage of technical and management skills; Security concerns on farms; Lack of credit facilities to fish farmers at low interest rate; Inadequate supply of good quality seed; High cost of seed; Disease; and access to markets in urban centers. Finally, the result from this study suggested how aquaculture could enhance food security in Nigeria. According to the study, aquaculture could enhance food security in Nigeria by reducing food prices; creating employment; improving farm income and increases wages; supplying local food to improve through the increased availability of low-cost fish; and by increasing the quantity and variety of fish and other foods consumed by the poor to reduce under-nutrition. Based on these results, food security is essential and thus need to be improved for a better life. One way to achieve that is by overcoming the challenges faced by small scale farmers and agribusinesses which limit their access to productive resources, financing, land, and other factors of production. This study recommends that the federal government lease some land to youths as a way of encouraging them to subscribe to agriculture. Grants should be given to those who are interested in aquaculture and properly monitored their activities to ensure accountability and eliminate misappropriation of the money. Government should arrange and organize free training on aquaculture to help improve their productivity.

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FOOD SECURITY IN NIGERIA: EFFECT ON SMALL SCALE AGRIBUSINESS. AQUACULTURE CHALLENGES**REQUEST FOR INFORMATION**

Dear Respondent,

I am carrying out a study on "Food security in Nigeria: effect on small scale agribusiness. Aquaculture challenges", and you have been chosen to be part of the study. This questionnaire is only for academic purposes. Kindly select the response which applies to you and all information will be kept confidential

Instructions: Please tick (√) as appropriate where

SA = Strongly Agree (SA), A = Agree, D = Disagree (D), SD = Strongly Disagree (SD)

Key: Strongly agree (4), Agree (3), Disagree (2), and strongly disagree (1).

S/N	ITEMS	SA	A	D	SD
RQ1	What are the factors responsible for food insecurity in Nigeria?				
1	Climate change and natural disasters				
2	Inability to produce or purchase enough food for their needs				
3	Insufficient production				
4	Inefficient policies and corruption				
5	Civil insecurity and crisis				
RQ2	What are the effects of food insecurity on small scale agribusiness?				
6	Decreases the ability of countries to develop their agricultural markets and economies				
7	Creates insufficient household income				
8	Limits the ability of small scale agribusiness to expand their businesses				
RQ3	What are the challenges faced by aquaculture in ensuring food security?				
9	Lack of access to quality inputs and financial resources				
10	Poor infrastructure resulting in high costs of transactions				
11	Shortage of technical and management skills				
12	Security concerns on farms				
13	Lack of credit facilities to fish farmers at low interest rate				
14	Inadequate supply of good quality seed				
15	High cost of seed				
16	Disease				
17	access to markets in urban centers				
RQ4	How can aquaculture be used to enhance food security in Nigeria?				
18	Reduces food prices				
19	Creates employment				
20	Improves farm income and increases wages				
21	Local food supplies can be improved through the increased availability of low-cost fish				
22	Increases the quantity and variety of fish and other foods consumed by the poor to reduce under-nutrition				