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Assessment of Food Security Status among Households in Esan Land

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ABSTRACT

The study examined assessment of food security status among households in Esan Land. Two research questions were analysed for the study. Descriptive survey design was adopted for the study. The population of the study covers all the one hundred thousand, eight hundred (100,800) households in the targeted area. A sample size of 1,008 respondents was randomly drawn for the study using the multistage random sampling technique. The instrument for data collection was a questionnaire designed by the researcher and titled: "Food Security Survey Questionnaire (FSSQ)". The reliability of the instrument was determined by using split-half reliability method. It yielded 0.78 which was considered reliable for the study. For the collection of data, the researcher trained three research assistants on how to administer the questionnaire. Frequencies, percentages (%), mean scores ($\overline{X}$) and Standard Deviation (SD) was used to analyze the research questions. The results showed that households in Edo Senatorial District of Edo State were not food secured. It is therefore recommended among others that Ministry of Health, should embark on educative programme that will help to enlighten household heads about adopting other strategies like collaborative buying of food among household heads to ease cost. Household also should embark on elaborate food production so that excess food from their produce can be sold to buy other food which the family do not produce.

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INTRODUCTION

Food is essential for all living things, providing the nutrients necessary for growth and survival. It is any substance, solid or liquid, that can nourish the body when consumed and digested. Nutrients such as protein, fat, carbohydrates, vitamins, minerals and water are essential components of food. These substances provide energy, support bodily functions (such as breathing and digestion), help repair tissues and strengthen the immune system.

Food security “exists when all people at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (Food and Agricultural Organization, 2016). F.A.O categorized food security as follows: availability, accessibility, utilization and sustainability. Food security requires that everyone has consistent access to sufficient, nutritious food. Availability means there's enough food physically present, meeting dietary needs and preferences. This depends on factors like local production, imports, and trade. Accessibility is the second component to food security. Food accessibility means everyone can get the food they need, regardless of economic, social, or physical barriers. That an adequate amount of food is available at the regional, national and international level does not imply it is accessible at the household level. It is one thing for food to be readily available or pesent, it is another thing for it to be accessible because accessibility may depend on the purchasing power of households. Utilization, the third component, refers to how the body uses and benefits from the nutrients in food. Factors like food quality, nutritional value, preparation, storage, and eating habits influence utilization. The fourth component, stability ensures that food supply, access, and consumption remain consistent over time.

From the foregoing, food security could be measured in relation to the four aforementioned components of food security - availability, accessibility, utilization and stability. On a dichotomous and mutually exclusive level, households could be food secured or not food secured. While food security is characterized by a positive situation that guarantees availability, accessibility, utilization and stability of food for members of the household over a given period of time, food insecurity may not afford members of one or more household the availability, accessibility, utilization and stability of the food quality and quantity needed to cater for its members. According to the FAO's 2016 practical guide, all four components—availability, accessibility, utilization, and stability—must be met simultaneously for true food security. Even with current access to quality food, a person can still be considered food insecure if their access

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is intermittent, leading to nutritional decline. This makes food security a global challenge, as the problem extends beyond Africa to worldwide households.

Esan land of Edo State covers five Local Government Areas – Esan North East, Esan South East, Esan West, Esan Central and Igueben in the Central Senatorial District of Edo State which are mostly an agrarian area, made up of mostly farmers. The nature of this area is characterized by a climate that favors the growth of varieties of food and cash crops such as yam, cassava, maize, rubber, cocoa among others. The people are predominantly farmers by occupation; yet it is alarming to know that access to quality and sufficient food is increasingly constrained by high food prices. This may have some consequences on food shortage or insecurity at the household level.

Household refers to a group of people often living together under a common shelter as a family. It describes people living in a home, including extended family members, relatives, domestic staff or servants alike. The four components of food security—availability, accessibility, utilization, and stability—are applied at the household level to ensure food security for individuals sharing a common dwelling. When all individuals in a household have consistent access to enough, safe, and nutritious food to support a healthy, active lifestyle, household food security is present (Onunka, Ihemezie & Olumba 2018). The nutritional well-being of each household member relies on several factors: equitable distribution of food based on individual needs, a diverse, high-quality, and safe food supply, and the effective utilization of consumed food by all family members.

Household food security is a subset of national food security, ensuring that all individuals and households have access to sufficient food either by growing it themselves or earning enough to buy it. Onunka et al. (2018) identified two primary factors influencing food security: supply-side factors and demand-side factors. Supply-side factors determine the availability of food. Supply-side factors influence physical access to food at various levels, while demand-side factors determine the degree to which countries, households, and individuals can obtain available food. Demand-side factors are essentially determinants of economic access or entitlement to food.

Food production, distribution and supply to various consumers and households in a nation economy can be affected by changes in agricultural policies, government trade policies, stiff market competitions and even unprecedented outcomes such as an outbreak of war, population growth, changing tastes, climate changes and insecurity threats or disease outbreak. For instance, Akukwe (2020) noted that the federal government attributed the food shortage during the Corona Virus (COVID-19) pandemic to the global and national lockdown orders which resulted in lowering agricultural produce and induced the unprecedented rise in staple food prices. This hike

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in food prices further makes it difficult for households to feed adequately hence food insecurity. Food insecurity is not restricted to a particular socio- economic variable, it cut across different groups of people.

In Esanland, market days are characterized by crowds of people heading to the market to patronize food vendors who are farmers and traders that bring to the market, food stuffs and wares for sale as to provide food for their households. Small-scale farming on reserve land or backyard farming is a frequent practice among the indigenous populations. By engaging this practice most families make use of available land space within their neighborhood, their compound or a virgin land space that has not been developed are used for planting food crops like cereal, vegetables and tuber crops for domestic consumption. Some households raise animals such as birds, goats, and rabbits for consumption and sale as a source of livelihood while some who do not indulge in farming and other agricultural practices prefer to use some other food security measures. In order to ensure food security in Esan land, it is considered pertinent to investigate the food security status among households in Esanland.

Food is one of the primary needs for man because of its several functions that it performs such as growth, repair of worn-out tissues, reproduction of worn-out cell and resistance to diseases, thereby making one strong and healthy. In spite of its functions, many households cannot afford adequate meals for their household members (Nwaniki, 2017). In many cases, households are unable to provide sufficient food for their members, leading to inadequate meals and, ultimately, malnutrition. Food security is a critical issue that affects almost all individual and households worldwide encompassing the availability, accessibility, utilization and stability of food. Efforts have been made by Government and individuals to address food insecurity yet many regions and population continue to experience chronic hunger and malnutrition. About 1.9 billion adults worldwide are overweight, while 462 million are underweight (WHO, 2020). Due to financial constraints or limited access, many households cannot afford or obtain enough nutritious foods like fresh fruits, vegetables, legumes, meat, and milk. Food insecurity is a major problem worldwide and it is especially wide spread in Sub-Saharan African in which Nigeria is a major part and Edo State being inclusive.

Food security is a complex phenomenon encompassing economic, environmental, and social factors. Food is undoubtedly the most basic requirement for human survival. While substantial resources have been devoted to ensuring global food supplies, food insecurity remains a pressing issue, especially in African countries such as South Africa (Nengovhela, Mokhaukhau & Hlongwane 2024), Mozambique (McCordic, Riley & Raimundo, 2021), Kenya (Gatobu, Omboto &Pacifica, 2021) and lots in various states of Nigeria (Olarinde, Abass, Abdoulaye, Adepoju, Adio, Fanifosi, & Wasiu, 2020; Aboaba, Fadiji & Hussay, 2020). With respect to Esan land, the

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researcher is unaware of studies on the status of food security among households with respect to food security components (availability, accessibility, utilization and sustainability). This knowledge gap is what this study seeks to fill by providing asnwers to some research questions.

Research Questions

The following research questions were raised to guide the study:

1) What is the status of food security among households in respect to food security components (availability, accessibility, utilization and sustainability) in Esanland?
2) What aspect of food security (availability, accessibility, utilization and sustainability) are households most deficit in Esanland?

REVIEW OF RELATED LITERATURE

The Becker's Nutritional theory of Household was used for this study. The theory was propounded by H.J Becker in 1976 and anchored on the premise that decision making that affects the nutritional status of a given household depends on various factors. Also, the theory believes that nutritional wellbeing in the household is a function of (depends on) the following;

a) Availability of healthy foods,
b) The food consumption pattern or preferences of the household,
c) Behavioral tendencies towards food resources in a given family.

Becker (1976) noted that nutritional based decisions with its attendant implications on nutritional outcomes for members of the household, is based on several considerations such social and economic factors such as the age of household head and size of the family, the purchasing power of the family (income) and other environmental factors. Becker's theory has proven in illuminating the household determinants of nutrition. This shows that Becker's nutritional theory of household indicates that the nutritional status of a household reflects the combined effects of many several factors.

Therefore, the relevance of the Becker's nutritional theory of household to this work is that the theory holds that the nutritional wellbeing in the household is a function of availability of healthy foods, the food consumption pattern or preferences of the household and behavioral tendencies towards food resources in a given family. In the context of this study, nutritional wellbeing and food security are interrelated and interdependent in that the former (food security) has the capacity to promote the latter (nutritional wellbeing). Therefore, it is only expected that the level of food security in any given household can be measured in relation to availability, adequacy,

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utilization and stability of healthy foods for the household.

Secondly, the theory has shown that nutritional based decisions with its attendant implications on nutritional outcomes for members of the household, is based on several considerations. Some of these considerations as identified by Becker (1976) include social and economic factors such as the age of household head and size of the family, the purchasing power of the family (income) and other environmental factors. In the context of this study, the socio-economic factors include: marital status, educational status, income status, employment status and size of household. Therefore, to examine socio-economic variables as determinants of food security among households in Edo State, the Becker's Nutritional theory of Household will be used. Food Agricultural Organization (2013) defined the core determinants of food security as availability, accessibility, utilization and stability.

Food Availability: - Availability of food plays a conspicuous role in food security. Having enough food in a nation is necessary but not adequate to ensure that people have satisfactory access to food. Over the years, population has increased faster than the supply of food thus resulting in food unavailability per person.

Food Accessibility: - The ability to have access to food depends on two major conditions: - Economic access and physical access. Economic access depends on one's income, the price of food and the purchasing power of the people. Physical access depends on the availability and quality of infrastructure needed for the production and distribution of food. Lack of economic access to food is as a result of the increase in the rate of poverty.

Food Utilization: - Food utilization is measured by two outcomes indicators which reflect the impact of inadequate food intake and utilization. The first outcome is measured by under-five years of age nutrition level while second measurement is quality of food, health and hygiene. FAO (2016) noted that measuring the nutritional status of under-five years of age is an effective approximation for the entire population. The indicators for the measurement of under-five years of age are wasting (too thin for height); underweight (too thin for age) and stunting (too short for age). Most times, progress in terms of having access to food is not always accompanied by progress in the utilization of the food. A more direct indicator of food utilization is underweight because it shows improvement more promptly than stunting and wasting whose improvement can take a longer time to be noticeable. Since 1990, the prevalence rates of under-five stunting and underweight have declined in some developing countries, while some countries still report a prevalence rate of 30% or more and WHO categorizes this as being high (WHO, UNICEF, 2011).

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Stability: Stability has to do with exposure to short-term risks which have a way of endangering long-term progress. Key indicators for exposure to risk include climate shocks such as droughts, erosion and volatility in the prices of inputs for food production. The world price shocks leads to domestic price instability which is a threat to domestic food producers as they stand the chance of losing invested capital. Nigerian farmers are mainly smallholders, farming mainly for subsistence, this makes it difficult for them to cope with changes in the prices of inputs, and it also lowers their ability to adopt new technologies thereby resulting in reduced overall production (Katz and Weaver, 2013).

Food insecurity is lack of access to a nutritionally adequate diet in a household or country. Food security is defined as physical, social, and economical access to sufficient, safe, and nutritious food to meet dietary needs and food preferences for an active and healthy life. Household food security exists when household members have access to the food needed for a healthy life. A region is food secure when a majority of the people in the geopolitical area has access to food of adequate quantity and quality at all times, while a locality is food secure when a majority of the people in the locality have access to food of adequate quantity and quality at all times (Babatunde and Oyatoye, 2012). National food security implies that a country, with the amount of food available, if evenly distributed, has enough to meet the people's food needs. Sustainable food security means enough food for everyone at present, plus the ability to provide enough for the future (FAO, 2006; Purkait, et al., 2025).

For food security to be ensured at these different levels whether for an individual household, region, or nation—three important factors have to be in place: food availability, food accessibility, and food utilization. "Food availability" concerns the physical presence of food, which depends on domestic food production and food importation. The problem of dwindling food availability has been aggravated because total food production has been constant over the years with a growing socioeconomic challenge. The value of food imports increased by 53% from N= 3.2991 trillion (Naira) in 2008 to N= 5.0479trillion in 2009. Nigeria's import table also shows that 90% of goods imported are for consumption and not for production purposes (Omoh, 2011).

METHODS

Research Design

The study adopted the descriptive survey design. A descriptive survey research design according to Siedlecki (2020) is a research design that describes individuals, situations, issues, behaviors or phenomena in nature. In this regard, the descriptive survey design was considered suitable for

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this study because the analytical explanations were provided to the data collected without controlling the outcome under any laboratory condition or subjecting the variables to any form of manipulation.

Population, Sample and Smpling Technique

The population of this study covered all the 100,800 (one hundred thousand, eight hundred) households in the selected areas of Esanland. This record was based on the State household survey statistics as provided by the National Population Commission (2024). A sample size of 1,008 respondents representing 1% of the population was randomly drawn. According to Cochran (1977) the use of small percentage as 1% can be sufficient for achieving statistically significant result. The multi-stage sampling technique was adopted because the sampling progressed through series of stages of purposive and simple random techniques. In the first stage the researcher used the systematic random sampling technique to arrange the local government areas in Esanland in a serial manner. Furthermore, the systematic random sampling technique was used to select only the local government areas that falls on the odd numbers as 1, 3 and 5.

Following the procedure, the local government on odd numbers listed under the Esanland are Esan Central, Esan West and Igueben. Furthermore, simple random sampling technique was used to select 42 households each from 8 areas within each local government. The sampling procedures are shown in Table 1. The choice of the multi-stage sampling technique was supported by Adebite (2004) who noted that whenever the geographical openness of a study area and the sampling units (such as households) is large, non-probability sampling technique that give equal elements of a population equal chances of selection, was largely recommended. The sampling procedure is properly explained on Table 1 below.

Table 1: Sample and Sampling Procedure

	Esan Land of Edo State.	**Number of Areas targeted (A)**	**Total households drawn per area (B)**	**Total sample drawn per local government C = (A x B)**
	Esan Land of Edo State			
1	**Esan Central***	8 areas	42	336
3	**Esan West***	8 areas	42	336
5	**Igueben***	8 areas	42	336
	Total	**24**	**126**	**1008**

Source: Field work of the researcher

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Instrument of the Study

The instrument for data collection was a questionnaire designed by the researcher and titled: "Food Security Determinant Survey Questionnaire (FSDSQ)". The instrument was divided into two Sections of A and B: Section A deals with demographic data of respondents. Section B contains 20- items which dealt with the level of food security following the components of food security as suggested by Food and Agricultural Organisation (2016). These components include: food availability, food accessibility, food utilization and food stability/sustainability. Five (5) items were raised on each of the component indicators as follows: food availability (items 1-5), food accessibility (items 6-10), food utilization (items 11-15) and food stability/sustainability (items 15-20). Section B on the instrument (FSDSQ) were rated on a four-point scale of Strongly Agreed - 4, Agree - 3, Disagreed -2 and Strongly Disagreed -1. Therefore, a mean score of 2.5 was used as the benchmark rating score for decision rule on the items. A bench mark of 2.5 was used to rate level of agreement and disagreement on the items. This were obtained by adding up the four (4) likert type scales (Strongly Agreed -4, Agreed -3, Disagreed -2 and Strongly Disagreed -1) and dividing the sum of the scales (10) by the total number of scales (4) to give 2.5. Hence, a score of 2.5 or higher on any item were adjudged to be agreed upon while a score of 1 to 2.49 were taken otherwise.

Instrument Validation/Reliability

The face and content validity of the instruments was ensured by experts in Home Economics and Measurement and Evaluation whom were given drafted copies of the questionnaire to read through, make criticisms and provide objective suggestions. Their corrections and suggestions were integrated into the final draft of the instrument to ensure that items contained in the instrument are not ambiguous, but rather precise in measuring what they were intended to measure.

The reliability of the instruments was determined by using split-half reliability method. This was done by administering copies of the instrument to a group of twenty (20) respondents from households outside the study area. In carrying out the split-half reliability technique, copies of the instrument were distributed to the 20 household heads (respondents) who do not constitute members of the study. The data retrieved from them were collated and split into two equal halves of odd and even numbers. The Statistical Package for Social Science (SPSS version 21) was employed to analyze the data collected. The split-half reliability coefficient was used to establish the reliability alpha of the questionnaire. After analysis, the reliability coefficient yielded 0.78 which made it reliable for this study.

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Data Collection and Analysis

For the collection of data, the researcher made use of three research assistants who were trained on how to administer the questionnaire. Their duties were to give assistance to the respondents in areas of difficulty in the administration of the instrument. On each of the days fixed for the administration of the instruments, the researcher in company of the trained research assistants went to the targeted areas where copies of the questionnaires were distributed to the respondents. Frequencies, percentages (%), mean scores ($\bar{X}$) and Standard Deviation (SD) were used to analyze the research questions.

RESULTS

The results are presented as follows

Research Question One: What is the status of food security among households in respect to food security (availability, accessibility, utilization and sustainability) in Esanland?

Table 1: Analysis of Food Security among Households in Esan Land of Edo State

s/n	Items	X	SD	Remark
	Food availability			
	In my household…			
1.	we have raw food items for everyone to cook and eat	2.41	1.237	Disagreed
2.	vegetables are available for everyone to eat	2.09	1.163	Disagreed
3.	fruits are available for everyone consumption	1.57	.865	Disagreed
4.	energy giving foods like rice are available for every member to eat	2.03	1.057	Disagreed
5.	food items rich in protein like beans, egg, chicken, beef, etc are available for members to eat	1.85	.911	Disagreed
	Mean score =1.99			
	Food Accessibility			
6.	everyone has access to clean and portable water for drinking	2.49	1.307	Disagreed
7.	we buy vegetables and fruits regularly for everyone's consumption	2.14	1.031	Disagreed
8.	we eat what we can afford	2.36	1.224	Disagreed
9.	the distance to the market where food is sold is close by and within our reach	2.43	1.119	Disagreed
10.	we eat food items that can supply the desired vitamins and nutrient for everyone	2.49	1.226	Disagreed
	Mean score = 2.38			

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	Food utilization			
11.	we cook our food to preserve nutrients	3.23	.858	Disagreed
12.	We preserve raw food items properly	2.97*	.969	Agreed
13.	We preserve cooked food items adequately	2.13	.887	Disagreed
14.	we read the nutritional information of any packaged food we buy, to determine which one is best for consumption	2.45	1.124	Disagreed
15.	we strictly follow the recommendations of food experts on food preparation for good supply of nutrients	2.00	1.062	Disagreed
	Mean score = 2.61			
	Food sustainability			
16.	I plant some seasonal crops to ensure my household does not lack some food during scarcity	2.71*	0.927	Agreed
17.	I save some money for times of scarcity so we can afford food irrespective of the increasing cost	2.56*	0.946	Agreed
18.	I buy food in season to ensure they are available for consumption when they are out of season	2.40	0.915	Disagreed
19.	I rear some animals to ensure everyone can eat meat without depending on the market	2.66*	0.976	Agreed
20.	I buy food in bulk to ensure food is readily available for everyone's consumption	2.62*	0.924	Agreed
	Mean score = 2.56			
	Grand mean score = 2.43	***Criterion mean (*** $\bar{X} \geq 2.50$*)*		
	High food security ($\bar{X} \geq 2.50$*)*	*Not food secured* ($\bar{X} < 2.50$*)*		

The results in Table 1 showed that respondents agreed on items 12, 16, 17, 19 and 20 at mean score range of 2.56 to 2.97 respectively and disagreed on items 1, 2, 3, 4, 5, 6, 7 8, 9, 10, 11, 13, 14, 15 and 18 respectively on a mean score ranging from 1.57 to 2.45. However, the result from the table showed that the mean score on item 1 to 5 bordering on food availability was 1.99, 6 to 10 bordering on food accessibility was 2.38, on item 11 to 15 bordering on food utilization was 2.61 on item 16 to 20 bordering on food sustainability was 2.56. The result showed that food availability and accessibility was not adequate why food utilization and food sustainability was adequate among household in Esan Land of Edo State. Since the grand mean of 2.43 is less than the criterion mean of 2.50 (that grand mean $\bar{X}$ of 2.43 < criterion $\bar{X}$ of 2.50). This showed that families in Esan Land of Edo State are not food secured.

Research Question 2: What aspect of food security (availability, accessibility, utilization and

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sustainability) are households most deficit in Esanland?

Table 2: Analysis of Food Security deficit among Households in Esan land

s/n	Items	$(\overline{X})$	Mean score rank
	Food availability	1.99	4th
	Food Accessibility	2.38	3rd
	Food utilization	2.61*	1st
	Food sustainability	2.56*	2nd

*Above criterion mean ($\overline{X} \geq 2.50$)

The result from Table 2 showed that food utilization at 2.61 and food sustainability at 2.56 were at the two highest component levels of food security among households. On the otherhand, the mean score on food availability at 1.99 and food accessibility at 2.38 were the lowest mean scores. The result showed that food availability and food accessibility was deficient among household in Esanland. This showed that families in Esanland are most food deficient on the aspect of food availability and accessibility.

DISCUSSION

The result shows that the households in Esan land were not food secured. The result further showed that food availability and accessibility was not adequate why food utilization and food sustainability was adequate among household in Esanland of Edo State. The result corroborates that of Uche and Uche (2017) who found that food security was low and this was caused by factors affecting food security at the micro level include: poverty, low awareness on proper food preservation, ignorance/illiteracy, household size, personal cultural belief and waste/poor food management practices. The result agrees with that of Onunka, Ihemezie and Olumba (2018) who found that epileptic state of power, low socioeconomic status of heads of household, unemployment, poor land tenure system for agriculture, increased housing demand that has reduced demand for agricultural land and low income/poverty are some of the factors affecting food security in Udi local government area of Enugu state

Consequently, the result supported that of Abu and Soom (2019) who found that the level of food security among household was low. The result further showed that constraints or factors such as lack of access to credits, inadequate land availability, and poverty, infertility of the soil, lack of non-farm income generating activities, storage and processing problems were identified as some of the factors militating against the achievement of food security status among rural and

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urban farming households of Benue State, Nigeria.

The result is in line with that of Akinyele (2019) who revealed that there is low level of food security ass a result of high levels of poverty in rural households, low priority for nutrition on the agenda of government and resulting poor funding, poor understanding by policymakers of the content of nutrition programs in relation to other sectors, poor infant and child feeding practices, inadequate access to healthy environment and health services as well as various poor food practices. The result corroborates with that of Fasoyiro and Taiwo (2012) who found that the problems of food insecurity has been associated with increase in food waste due to poor processing and storage; without a corresponding increase in agricultural productivity and favorable policies. The result is in consonance with that of Barago (2018) who found that poor farming technology, excessive selling and poor storage contributed to food insecurity in Mtwara rural district.

CONCLUSION

Based on the findings, it can be concluded that households in Esan Land of Edo State were not food secured. Specifically, food availability and accessibility was not adequate while food utilization and food sustainability was deficit among household in Edo State.

RECOMMENDATIONS

Based on the findings, the following recommendations were made:

1. The Ministry of Health, should embark on educative campaign programme that will help to enlighten household heads about adopting food security measures like bulk purchasing, animal husbandry practices, food preservation and food storage in a cost effective manner to promote availability and accessibility of food in households.
2. Households in Esan Land of Edo State should engage more elaborately in food production through farming and rearing of animals for family consumption.
3. The government in partnership with non-government organizations should hold public campaign that would discourage household food wastage and encourage food security practices in Esan Land of Edo State regularly.

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