POVERTY, GOVERNANCE AND SOCIAL VALUES IN RURAL CONTEXT

PROCEEDINGS

of the

31st

ANNUAL NATIONAL

Congress

of the
RURAL SOCIOLOGICAL ASSOCIATION OF NIGERIA (RuSAN)
held at
FEDERAL UNIVERSITY, OYE-EKITI, EKITI STATE
Between
5th - 8th December, 2022

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5 and 8 December, 2022

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GENERAL INFORMATION

The Nigerian Rural Sociological Association (NRSA) was formed on January 7, 1981. Its inaugural congress was held from November 7 to 11, 1983 with the theme "Agriculture and Social Development in Nigeria".

NRSA is a broad-based professional association with membership cutting across universities, agricultural research institutes and other agricultural/rural development agencies both from the public and private sectors. Membership is open to all professionals who are interested in advancing the development of the rural folks.

This volume is the proceeding of the 30th Annual National Congress held at the Federal University of Agriculture, Abeokuta between 4th and 8th October 2021. The plenary papers contained herein were peer reviewed before publication.

The association gratefully acknowledges the moral and financial contributions of many organisations and individuals to the success of the congress.

Year	Theme	Editor-in-Chief	Venue/Location
2022	Poverty, governance, and social values in rural context	Prof John Oladeji	Federal University, Oye-Ekiti
2021	Transforming rural environment: The sociological perspective	Prof John Oladeji	Ogun State
2020	Emancipation of the Rural Family in Contemporary Nigeria	Prof. Kolawole Adebayo	Landmark University, Omu Aran, Kwara State
2019	Transforming Nigeria's Rural Environment: The Sociological Perspective	Prof. Kolawole Adebayo	Obafemi Awolowo University, Ile-Ife
2018	Rural Social Fortification and Development in Nigeria	Prof. Kolawole Adebayo	Ahmadu Bello University, Zaria
2017	Grassroots Development and Dividend of Democracy	Prof. Kolawole Adebayo	Michael Okpara University of Agriculture, Umudike
2016	Conflict, Peace Building and Rural Development	Prof. F. A. Kuponiyi	Federal University of Oye-Ekiti, Oye-Ekiti
2015	Changing Social Values, Transparency and Sharp Practices – Impacts on Agricultural and Rural Development	Prof. F. A. Kuponiyi	Ladoke Akintola University of Technology, Ogbomoso

Year	Theme	Editor-in-Chief	Venue/Location
2014	Social Engineering on Sustainability of the Agricultural Transformation Agenda	Prof. F. A. Kuponiyi	University of Benin, Benin
2013	Perspectives on changing rural social organisations, structures and institutions and implications for agricultural development strategies in sub-Saharan Africa	Prof. F. A. Kuponiyi	University of Uyo, Uyo
2012	Challenges and Approaches to Sustainable Rural Development in sub-Saharan Africa	Prof. F. A. Kuponiyi	University of Ibadan, Ibadan
2011	Socioeconomic Analysis of Entrepreneurial Education Food Security Poverty Alleviation Linkages in Nigeria	Prof. F. A. Kuponiyi	Fed Coll of Agric Produce Tech, Hotoro, Kano
2010	Approaches towards the Transformation of Rural and Agricultural Economy in Nigeria	Prof. A. A. Ladele	University of Agriculture, Makurdi
2009	Globalization of the Socio-Political Economy of Rural Development	Dr. A. A. Ladele	Akure
2008	Policy Advocacy Role in Agricultural and Rural Transformation in Nigeria	Dr. A. A. Ladele	Umudike
2007	Powering Agricultural Rural Transformation Process in Nigeria.	Dr. A. A. Ladele	BOWEN, Iwo
2006	Unlocking the Agricultural and Rural Potentials of Nigeria	Dr. A. A. Ladele	UNAD, Ado-Ekiti
2005	Promoting Rural and National Economic Transformation through Agricultural Revolution	Prof. A. A. Jibowo	OOU, Ago-Iwoye

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BEING THE PRESIDENTIAL SPEECH DELIVERED AT THE
31ST ANNUAL NATIONAL CONGRESS OF THE RURAL SOCIOLOGICAL ASSOCIATION
DELIVERED BY
PROFESSOR GRACE MODUPE ADEBO, EKITI STATE UNIVERSITY, ADO-EKITI NIGERIA

The Vice Chancellor, Federal University, Oye Ekiti,
The Deputy Vice Chancellor, Academics,
Deputy Vice Chancellor Administrative,
All FUOYE University Principal Officers,
The Keynote speaker,
Our lead paper presenter,
All RUSAN Exco members,
The Distinguished members of RUSAN,
Ladies and Gentlemen.

It is my pleasure to welcome you all to the 31st Congress of the Rural Sociological Association of Nigeria, holding today at the Federal University of Technology, Oye-Ekiti. Nigeria. The congress was initially slated for October 2022, but for the National ASUU strike, it was shifted to this period 5th - 8th December 2022. As we are all aware of the theme of the Congress: **Poverty, Governance and Social Values in rural context.**

The three concepts are interrelated and interwoven and might have positive or negative consequences on the citizenry, especially when considering the present situation in our country now. The level of poverty is increasing on daily basis, especially in the rural areas. According to the National Bureau of Statistics (2022), 63% of persons living within Nigeria (133 million people) are multidimensionally poor. Sixty-five percentage (65%) of the poor (86 million people) live in the North, while 35% (nearly 47 million) live in the South. Poverty levels across States vary significantly, with the incidence of multidimensional poverty ranging from the lowest (27%) in Ondo state to the highest of (91%) in Sokoto state. Multidimensional poverty is higher in rural areas, where 72% of people are poor, compared to 42% of people in urban areas. The National Multidimensional Poverty Index (MPI)of Nigeria is 0.257, indicating that poor people in Nigeria experience just over one-quarter of all possible. It is obvious that all the sectors of our national life are reeling from a crisis of values.

We have lost our values right from the home which is the foundation of the society to the schools, marketplace, religion, and politics. Honouring parents is one of the values I grew up with, and your parents includes any other person and parents you come across. But what do we see today, a child that hardly honours his father and mother at home, how would he extend such honour to others. You cannot give what you don't have. One of the sayings of old is, a good name is better than silver and gold, and such, we would rather remain poor to maintain a good name than having silver and gold. However, our society worship silver and gold today, irrespective of where it comes from. We even have parents celebrating and forming association of yahoo boys' parents. Some tribes in Nigeria were known for their integrity and would not be offered bribe in those days.

However, the scenario has changed. Bribery and corruption have woven into every aspect of our lives in Nigeria and that is one of the major challenges killing the nation today. In the past four to five decades, different regimes have initiated campaigns of ethical transformation aimed at entrenching values at the core of the society. Such includes:

- the famous Jaji Declaration of the 1970s in which Gen Segun Obasanjo called on Nigerians to eschew conspicuous consumption and to take on a new spirit of service.
- The ethical revolution of the second republic lunched by President Shehu Shagari of the second republic.
- The War against Indiscipline (WAI) that levied a host of moral demands on Nigerians ranging from environmental sanitation and queuing up in public places and the rejection of bribery and corruption by General Muhammed Buhari (1984)
- The Mass Mobilization for social justice and economic recovery, otherwise called MAMSER which preached similar goals introduced by General Ibrahim Babangida.
- The War against Indiscipline and Corruption (WAIC) of General Sani Abacha.
- Ethical renewal and rebirth which were keys to the National Economic Empowerment Development Strategy (NEEDS) of President Obasanjo.
- And the fight against corruption of the current administration All these campaigns aimed at inspiring the behavioural transformation of the average Nigerian citizen.

However, most of the programmes failed to achieve the desired outcome for so many reasons. Some critics believed that some of the authors of the programmes were not themselves sufficiently sincere and so lacked the credibility and moral justification to propel such ethical transformations. In other words, the

leadership failed to supply a compelling example of the change they were demanding of the people. The maxim of equity states that one "who comes into equity must come with clean hands." Consequently, these programmes failed to elicit the desired compliance by the citizenry.

Nigerians has suffered from poor governance over a long period of time now. Issues such as vote and cook soup (dibo koo sebe), vote buying is no longer a news in Nigeria. Our votes are no longer cast for competence but the highest bidder, no wonder so many legislators were there to either warm sit or sleep. The end result of poor governance includes poor socioeconomic performance of the country, human rights abuses, widespread poverty, insecurity, corruption and lack of trust in the political system. Nigerians has suffered from poor governance over a long period of time now.

Hardly can you mention a place where moral values are upheld in its entirety in Nigeria. There was a saying that the government asked the principal to collect one hundred naira from the parents for a particular purpose. The principal told the teachers that the government requires each student to pay one hundred and fifty naira. The class teacher announced to the students that the government want them to bring two hundred naira. The student informed the mother that they were asked to pay three hundred naira and, this amount was further inflated to five hundred naira by the mother. I wonder whom the father will inform and how much he will ask. It is high time we think of change, so that corruption will not consume us as a nation.

As I mentioned earlier, the three major concepts of the congress are interwoven and inseparable. The congress subthemes have captured several dimensions of the challenges which I hope we shall gain from as we listen and contribute to this congress.

I appreciate the executives of the association and the editorial board for chosen this theme at this special period in the economic life of Nigeria. I believe that the participants have equally use their academic goggle to dissect the various subthemes of the congress. We are looking forward to a robust presentations and discussions for emerging policy issues.

I appreciate the Vice Chancellor of the University- Professor Abayomi Sunday Fasina and the University management for supporting the hosting of this congress in this reputable institution, especially now when all universities are striving to manage the aftermath of the protracted ASSU strike.

I am using this opportunity to appreciate our keynote speaker-Professor Igbekele Ajibefun, and the lead paper presenter-Professor Sola Omotola, for honouring our invitations to the congress. I appreciate Professor Layi Fasoranti who doubled as the Vice president of the Association and the chairman of the congress organising committee for all his efforts in ensuring the success of the congress.

I equally appreciate members of the Congress organising Committee for their commitment towards ensuring the success of this congress. I thank all the participants for your commitment and dedication to the academic profession despite the current paucity of funds.

I wish everyone a happy deliberation. Please relax and enjoy every bit of the congress.

Prof. Grace Modupe Adebo, grace.adebo@eksu.edu.ng | Tel: +234 8034 356 524

INVITED PAPERS

**POVERTY, GOVERNANCE AND SOCIAL VALUES IN RURAL DEVELOPMENT
BEING AN INVITED KEYNOTE PAPER PRESENTED AT THE 31ST ANNUAL NATIONAL
CONGRESS OF THE RURAL SOCIOLOGICAL ASSOCIATION OF NIGERIA HELD AT FEDERAL
UNIVERSITY, OYE EKITI, EKITI STATE, NIGERIA ON 6TH DECEMBER 2022**

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INTRODUCTION

There is a strong link between poverty, governance system and social values in any society. Or how can it be explained the fact that countries of advanced democracy are generally more developed with less citizens below poverty lines when compared to countries with poor or bad governance system? Why are poor countries of the world getting poorer and losing their value systems? The poor economic situation in Sub-Saharan Africa is not because of their skin or the part of the earth God has placed them but because of poor or bad governance system. God has endowed every region of the earth with adequate resources to prosper. What differentiate prosperous nations from poor nations is just the governance system. Governance is the key issue. When good leaders are in position, the people will prosper and rejoice. When bad leaders rule, the people will suffer poverty and underdevelopment. A good governance system will lead to socioeconomic progress, development and prosperity. Sub-Saharan Africa has been unfortunate to continue to be ruled by many bad leaders who are incompetent and greedy. This explains why the region is the most underdeveloped region in the world today.

For this presentation, governance is defined as a way or process of managing or overseeing a country. The focus of the presentation is therefore from the viewpoint of governance as it applies to nations and the interplay between governance, poverty value system and development.

Concept of Governance

Governance has been defined in different ways. According to Wikipedia, Governance is the process of interactions through the laws, norms, power or language of an organised society over a social system (family, tribe, formal or informal organisation, a territory or across territories). It is the decision-making among the actors involved in a collective problem that leads to the creation, reinforcement, or reproduction of social norms and institutions.

Elena Suckling, Zach Christensen, Dan Walton (2021) define governance as the way rules, norms and actions are structured, sustained, regulated and held accountable. As such, governance may take many forms, driven by many different motivations and with many different results.

UNESCO provides a broad-based definition of governance. According to UNESCO Bureau of Education, governance is about structures and processes that are designed to ensure accountability, transparency, responsiveness, rule of law, stability, equity and inclusiveness, empowerment, and broad-based participation. Governance is seen to represents the norms, values and rules of the game through which public affairs are managed in a manner that is transparent, participatory, inclusive and responsive.

In the development literature, the term 'good governance' is frequently used. In particular, the donors promote the notion of 'good governance' as a necessary pre-condition for creating an enabling environment for poverty reduction and sustainable human development. Good governance has also been accepted as one of the targets of the Millennium Development Goals (MDGs). The good governance agenda stems from the donor concern with the effectiveness of the development efforts. Good governance is expected to be participatory, transparent, accountable, effective, and equitable and promote rule of law.

International agencies such as UNDP, the World Bank, the OECD Development Assistance Committee (DAC) and others also provide definition of good governance which can be summarized as the exercise of authority or power to manage a country's economic, political and administrative affairs. The World Bank 2009 Global Monitoring Report sees governance as 'power relationships,' 'formal and informal processes of formulating policies and allocating resources,' 'processes of decision-making' and 'mechanisms for holding governments accountable.'

Governance systems set the parameters under which management and administrative systems will operate. Governance is about how power is distributed and shared, how policies are formulated, priorities set, and stakeholders made accountable. The level of development of a nation depends to a very large extent on quality of governance. Good leaders would provide good governance while bad leaders would provide bad governance.

The development of a nation is a function of good governance which depends on several

forces acting together as drivers of development. These include the rule of law, transparency, inclusiveness, equity and social justice, integrity, responsiveness, ease of doing business, citizens participation, consensus oriented, accountability, effectiveness, and efficiency.

Features of Good Governance

A good governance system reflects exemplary, competent, committed, and accountable leadership. These virtues have been generally lacking in sub-Saharan Africa. The likes of Nelson Mandela of South Africa are rare in Sub-Saharan Africa. Unless there is total overhaul in the governance system in Sub-Saharan Africa, poverty and underdevelopment will continue to perpetuate. The consequences of bad governance are poverty and erosion of social values. They also include corruption, negligence, fraud and lack of accountability, high levels of waste, insecurity, harsh economic environment, loss of control, high level of unemployment, low growth, inequality, chaos, among others.

Most countries in Sub Saharan Africa are trapped in the vicious circle of underdevelopment because of bad governance.
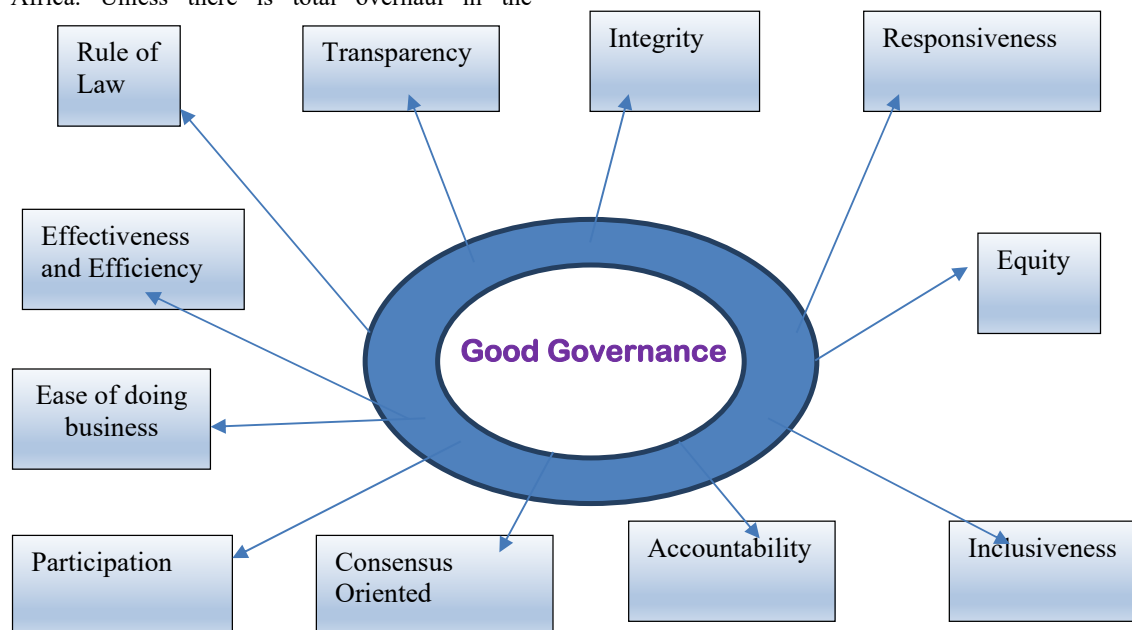
Source: Author

Sub Saharan Africa and Bad Governance

Bad governance has led to epileptic service delivery in sub–Saharan Africa. Bad governance can be seen as government's unwillingness or inability to carry out its responsibilities. It also means the public authorities do not protect rights of the citizens or provide basic public services. Bad governance is associated with lack of transparency and accountability. Arbitrary policy making, lawlessness and inconsistency are the order of the day. Take for example, the arbitrary fuel price increases in Nigeria in the last few years! Everyone is fed up with such arbitrariness. Nobody seems to talk about it again! Nobody to ask! No one is in charge! Everyone does what he or she likes! Cheating of the governed is a common phenomenon in a bad governance system. This is one of the major reasons why much progress has not been made in Sub-Saharan Africa. While few countries are making good progress in the region, the very poor performance of most of the countries in the region has overshadowed the performance of the few good ones.
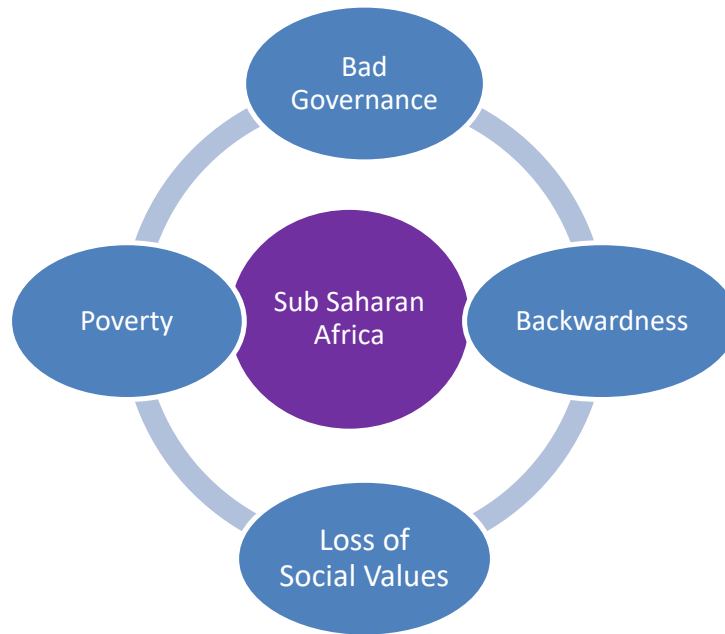
Source: Author

Quality of governance depends on quality of people in the government. Intellectual capacity will greatly influence the performance of politicians and public servants. Bad governance is also associated with unhappy populace, because of government failure, government business not adhering to established rules, regulations, laws. Governance is about delivery of services to the people. Major responsibility of government is to protect the people it governs. Only few countries in Sub Saharan Africa are performing their roles effectively.

Everyone partakes in the consequences of bad governance, including politicians and public servants that are responsible for bad governance. For instance, most African leaders now have America and Europe as their destinations for their healthcare, as hospitals in their countries lack necessary facilities. Their children attend schools abroad because of failing educational system in their countries. The corona virus pandemic of 2020 exposed the poor health and educational sectors in Sub Saharan Africa during the global lockdown.

Bad governance has affected critical sectors in sub-Saharan Africa as they find it difficult to function due to lack of necessary facilities and poor motivation of personnel. Personnel in healthcare services, for instance, are poorly remunerated. Nigeria in recent times has witnessed exodus of critical manpower in the health sector to Europe and America. The situation is even more critical in the education sector in most countries in Sub Saharan Africa. There is increasing number of African students moving to Europe and America for undergraduate and postgraduate studies. The unfortunate thing about this is that majority of them don't return to their countries on completion of their studies because of harsh economic situation in their home countries. Poor governance in most countries in Sub-Saharan Africa has been responsible for dismal performance of the education sector in those countries. Except for a very few countries in Sub Saharan Africa, university workers are poorly remunerated. Modern teaching, learning and research facilities are also lacking. This is responsible for poor global rankings of African Universities. Except for universities in South Africa and Egypt, most other African universities have very poor performance in global ranking. Nigeria situation is even more critical. Public universities in Nigeria regularly witness crises due to trade disputes between workers union and the government on poor funding of the universities. In 2022 alone, all public universities in Nigeria were closed for eight months due to industrial action by workers in the universities, as a result of agitation for better funding, welfare and working conditions. No nation with good governance would allow its public universities to be closed even for a month.

Tertiary education sector in Nigeria has really suffered in the last three decades. The sector has continued to experience poor funding. Salary level is poor compared to other countries in Sub-Saharan Africa. Nigerian Universities no longer attract foreign students and foreign scholars. In fact, Nigerian students are moving out in large number to other countries for undergraduate and graduate studies. Recent data released by the Home Office of the United Kingdom reveal that the number of study visas released to Nigerians increased by 222.8 per cent (rising from 20,427 in

June 2021 to 65,929 in June 2022). Several factors are responsible for this unfortunate situation, including poor funding, insecurity, lack of employment opportunity for graduates, among others. Nearly 13,000 Nigerians are currently pursuing U.S. graduate and undergraduate degrees across 1,000 U.S. colleges and universities. Foreign universities benefit from bad governance and inefficiency in the system. According to Punch Newspaper Report (October 20, 2022), Nigerian students contribute £1.9bn to UK economy in 2021 (just in a year).

The agricultural sector of Sub-Saharan Africa is not left out of the impact of poor governance. It is important to note that countries in Sub-Saharan Africa are endowed with both human and natural resources that could drive development. The region is blessed with fertile land and favourable weather for agricultural production. However, the farmers who represent over 50% of the population in the region are still subsistence and operate small scale farms that can hardly feed their families. They still operate with very crude implements and don't have access to yield increasing technology and inputs. Yet governments in these countries have not been able to do anything to lift the farmers out of this situation. Agricultural productivity in Sub Saharan Africa is the least when compared to other regions. Government policy has not been able to address the very restrictive land tenure system. Insecurity has become a major challenge for agricultural production today. In Nigeria, for instance, large proportion of farmers have abandoned their farms in the last five years due to insecurity because of attacks by bandits, herdsmen and kidnappers. The situation is getting worse by the day. This cannot happen where there is good governance. The primary duty of any government is to protect the governed.

Bad governance in Sub Saharan Africa has affected all areas of human endeavour. There is rapid decline of moral values, which can be attributed to indirect effect of bad governance. Today, there seems to be moral decadence globally, but the problem is more pronounced in Sub Saharan Africa due to extreme poverty. In Nigeria, there is ample evidence to show that moral values have been eroded. How can one explain the rampant situation where some individuals are involved in money rituals, killing fellow human beings or those involved in killing and selling human parts? What about "Yahoo Yahoo" or "Yahoo Plus"? Unemployed young people who are in serious need easily fall victims of ritual killings. These are part of consequences of bad governance.

Transparency as a feature of Good Governance

Transparency is an important element of good governance. Governments in Sub Saharan Africa generally lack transparency. Lack of transparency is the foundation of corruption. Most countries in Sub-Saharan Africa suffer from non-transparency syndrome. There is strong link between bad governance and corruption. High cost of governance in Sub-Saharan Africa is a reflection of deep-seated corruption. Because rule of law is not observed by government agents, the tendency is for process of governance to be carried out with impunity. The voices of the people are not heard. Citizen's participation in governance becomes impossible. Lack of equity and social justice make the people to lose confidence and hope in government. People therefore no longer care about asking questions concerning government actions and inactions, since government is not transparent nor participatory to allow such questions. Innovative ideas are not allowed to thrive while hard work and dedication are not compensated. There are no disincentives for doing the wrong things. It has become an obvious fact that several manufacturing companies /firms have moved out of Nigeria to some neighbouring countries due to corruption and harsh economic environment.

Corruption Perception Index

Corruption is one of the manifestations of bad governance. Based on published corruption perception index by Transparency International, Sub-Saharan Africa is more affected by this menace than other regions of the world. The Corruption Perceptions Index (CPI) is an index which ranks countries by their perceived levels of public sector corruption, as determined by expert assessments and opinion surveys. The CPI generally defines corruption as an "abuse of entrusted power for private gain". The index is published annually by Transparency International since 1995.

Global Corruption Perception Index

The 2021 CPI, published in January 2022, currently ranks 180 countries on a scale from 100 (very clean) to 0 (highly corrupt) based on the situation between 1st May 2020 and 30 April 2021. Denmark, New Zealand, and Finland, are perceived as the least corrupt nations in the world, ranking consistently high.

Map showing countries and territories according to the Corruption Perception Index, 2021, in ascending order.

- Score higher than 89
- Score equal to or between 80 and 89
- Score equal to or between 70 and 79
- Score equal to or between 60 and 69
- Score equal to or between 50 and 59
- Score equal to or between 40 and 49
- Score equal to or between 30 and 39
- Score equal to or between 20 and 29
- Score equal to or between 10 and 19
- Score less than 10
- Data unavailable

Global Map of Corruption Perception Index
Source: Transparency International

The 2021 reports of corruption perception index show that countries with well protected civil and political liberties generally control corruption better. The fundamental freedoms of association and expression are crucial in the fight for a world free of corruption.

The index ranks 180 countries and territories by their perceived levels of public sector corruption. It relies on 13 independent data sources and uses a scale of zero to 100, where zero is highly corrupt and 100 is very clean. Highest scoring region is western Europe and European Union, with an average of 66% while Sub Saharan Africa has an average score of 33%.

HIGHEST SCORING REGION

WESTERN EUROPE & EUROPEAN UNION

66/100

LOWEST SCORING REGION

SUB-SAHARAN AFRICA

33/100

Comparison of CPI Scores
Source: Transparency International

Corruption and Human Rights Breaches
Report by the Transparency International points to the fact that there is high correlation between level of corruption and breaches of civil liberties. Although outliers exist, but in most cases the relationship is causal in both directions: more corruption can lead to restrictions on civil liberties, while having fewer civil liberties makes it harder to fight corruption.
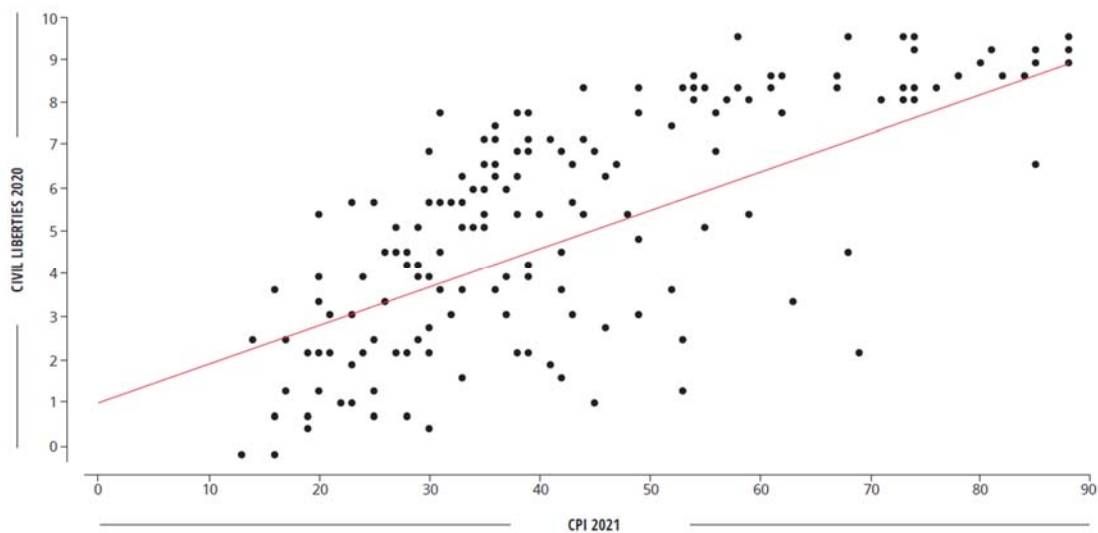
Correlation between Corruption and Civil Liberty
Source: Transparency International 2022

Sub-Saharan Africa continues to experience worse situation as reflected in the corruption perception index, year after year. The gains made by top scorers in the region are overshadowed by the region's overall poor performance, with a total of 44 out of 49 countries scoring below 50. Nigeria, which is described as giant of Africa scoring 24/100 is particularly noteworthy. This situation underscores the critical need for governments in Sub Saharan Africa to allow anti-corruption agencies to operate independently if the region is to reverse the devastating effect of corruption on millions of citizens living in extreme poverty.

Widespread poverty in Sub-Saharan Africa is a symptom of bad governance. The results of poverty are hunger, malnutrition, infant mortality, and lower education attainment.
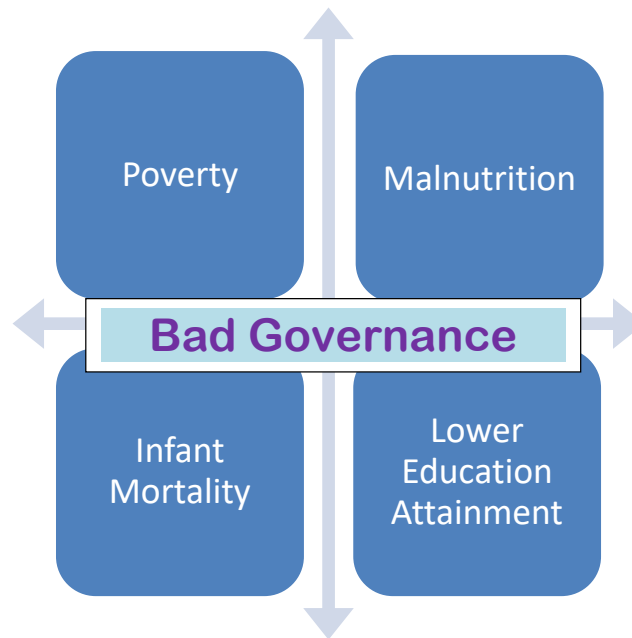
Bad Governance and Poverty
Source: Author

To live in poverty is to lack the resources required to meet basic needs. In 2021 an estimated 698 million people, or 9% of the global population, are living in extreme poverty – that is, living on less than $1.90 a day. Larger percentage of these people are in Sub-Saharan Africa. While more people are moving out of poverty in some regions, more people are entering into extreme poverty in Sub Saharan Africa.

For 26 countries in sub-Saharan Africa, the number of people living in extreme poverty has increased between 2010 and 2020. In 2021, 66% of the global population living in extreme poverty live in countries in sub-Saharan Africa (Development Initiatives, Fact Sheet, 2021). According to World Bank report 2022, as many as 4 in 10 Nigerians live below the national poverty line. Many Nigerians – especially in the country's north – also lack education and access to basic infrastructure, such as electricity, safe drinking water, and improved sanitation. The report further notes that jobs do not translate Nigerians' hard work into an exit from poverty, as most workers are engaged in small-scale household farm and non-farm enterprises; just 17 percent of Nigerian workers hold the wage jobs best able to lift people out of poverty.
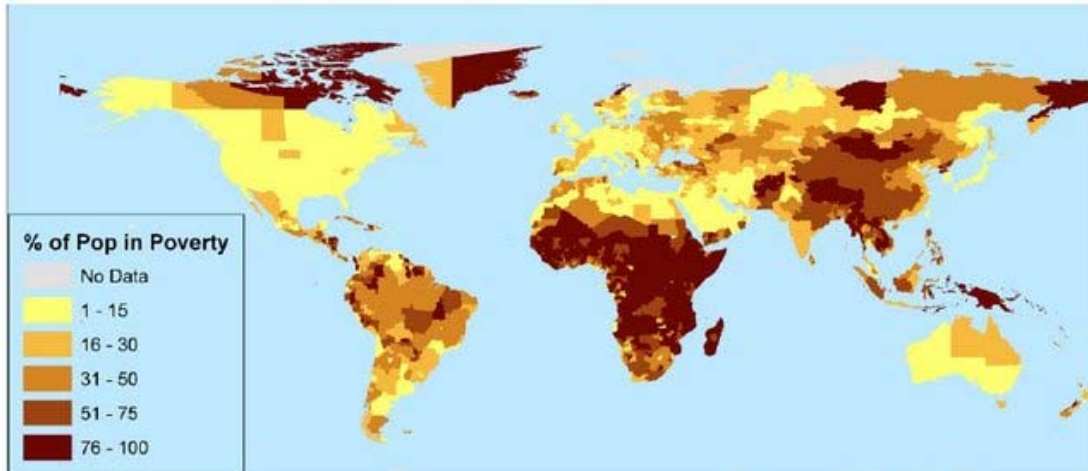
Global Poverty Map
Source: Socioeconomic Data and Application Centre (SEDAC)

The Poverty Mapping is about the geographical distribution of people living in poverty. Sub-Saharan Africa is considered as the epicentre of poverty, based on distribution of people affected by extreme poverty. More people are affected in Sub Saharan Africa than any other regions of the world. The most critical part of this is that the situation is not getting better but getting worse year after year.

Food security (2009 – 2019)
Source: Socioeconomic Data and Application Centre (SEDAC)

Hunger is an element of poverty. The hunger density map presented below shows that Nigeria is one of the worst areas affected by hunger in Sub Saharan Africa. Food insecurity affects Sub Saharan Africa more than any other region. All these are manifestations of poor governance in the region.
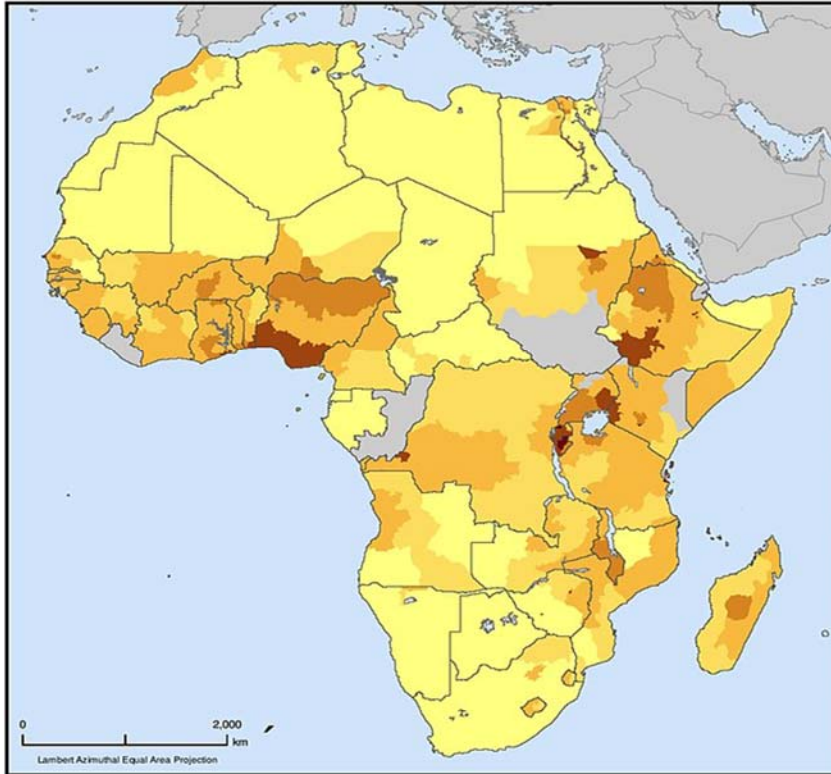
Africa
By Subnational Administrative Level

Measures of Poverty

Hunger Density
Population Density of Children Age 0-5 Underweight (per square kilometer). Children are defined as underweight if their weight-for-age z-scores are more than two standard deviations (2 SD) below the median of the NCHS/CDC/WHO International Reference Population.

Copyright 2007. The Trustees of Columbia University in the City of New York. Source: Center for International Earth Science Information Network (CIESIN), Columbia University. Global subnational rates of child underweight status; maps and further documentation available at: http://www.ciesin.columbia.edu/povmap

Population Density of Children
Age 0-5 Underweight
(per square kilometer)

< 0.5	
0.5 - 1.0	
1.0 - 5.0	
5.0 - 10.0	
10.0 - 25.0	
> 25.0	
no data	

Subnational boundaries have been removed from countries for clarity.
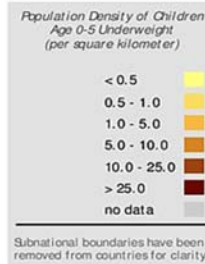
Hunger Density Map
Source: Socioeconomic Data and Application Centre (SEDAC)

Some of the consequences of hunger are child malnutrition and mortality. On a global scale, Sub-Saharan Africa faces more serious conditions in terms of child malnutrition and infant mortality.
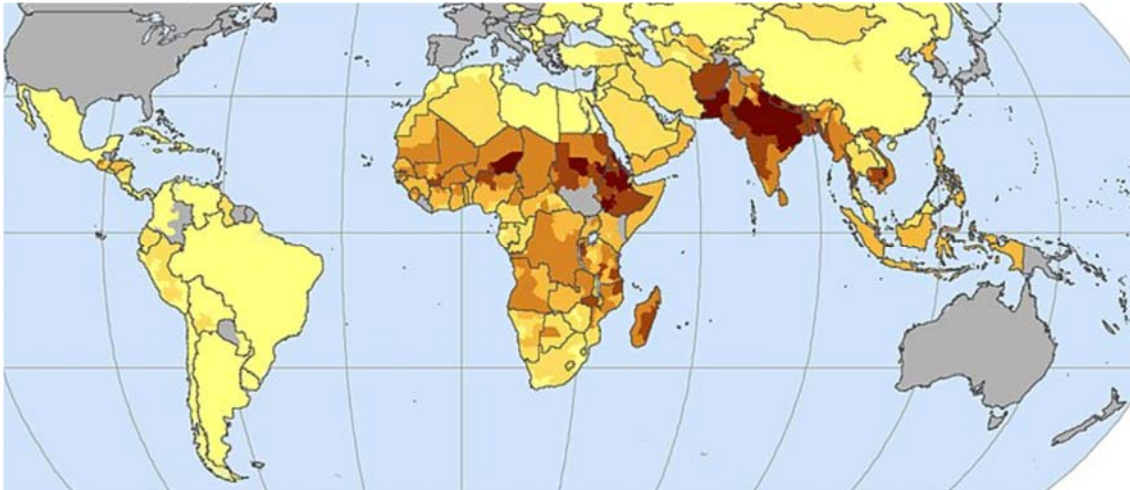
Sub National Prevalence of Child Malnutrition
Source: Socioeconomic Data and Applications Centre (SEDAC)
A Data Centre in NASA's Earth Observing System Data and Information System (EOSDIS), Hosted by CIESIN at Columbia University
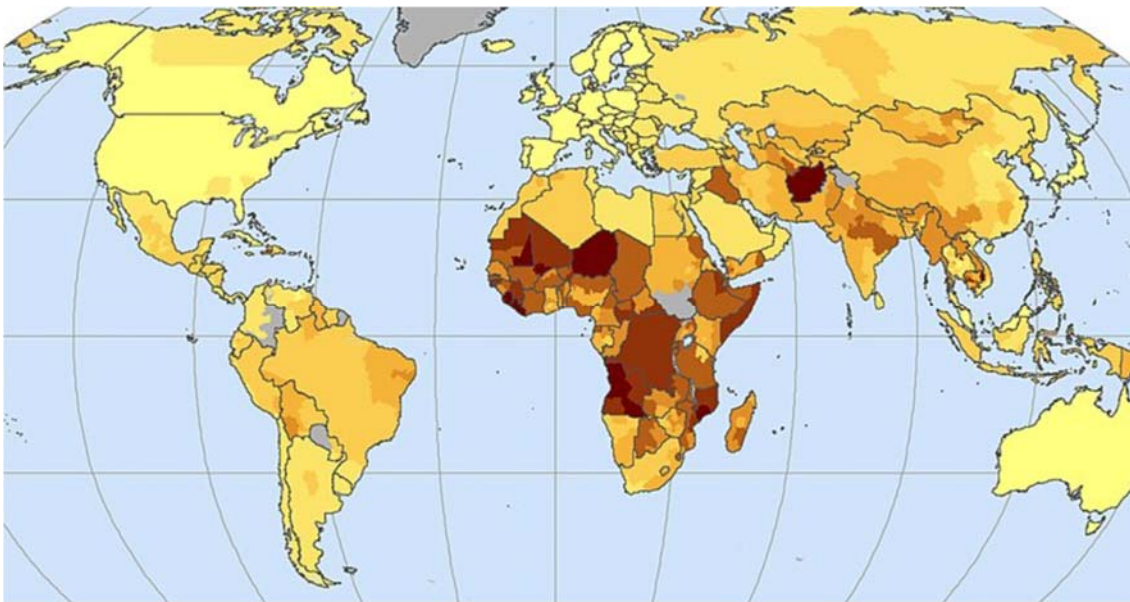
Global Infant Mortality Map
Source: Socioeconomic Data and Applications Center (SEDAC)
A Data Centre in NASA's Earth Observing System Data and Information System (EOSDIS), Hosted by CIESIN at Columbia University

Infant Mortality Rate (deaths per 1000 live births)

| < 10 | 10–25 | 25–50 | 50–75 | 75–100 | > 100 | No Data/No Population/Uninhabited |

Global Subnational Infant Mortality Rates, Version 2.01 is part of the Poverty Mapping collection. This map displays infant mortality rate (IMR) estimates for 234 countries and territories, 143 of which include subnational units, at a spatial resolution of 30 arc-seconds (~1 km) for the year 2015.

Center for International Earth
Science Information Network
EARTH INSTITUTE | COLUMBIA UNIVERSITY

Data Source: Center for International Earth Science Information Network - CIESIN - Columbia University. 2021. Global Subnational Infant Mortality Rates, Version 2.01. Palisades, NY: NASA Socioeconomic Data and Applications Center (SEDAC). https://doi.org/10.7927/0gdn-6y33.

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Poverty mapping. Global sub national infant mortality rates (2015)
Source: Socioeconomic Data and Applications Centre (SEDAC)
A Data Centre in NASA's Earth Observing System Data and Information System (EOSDIS), Hosted by CIESIN at Columbia University
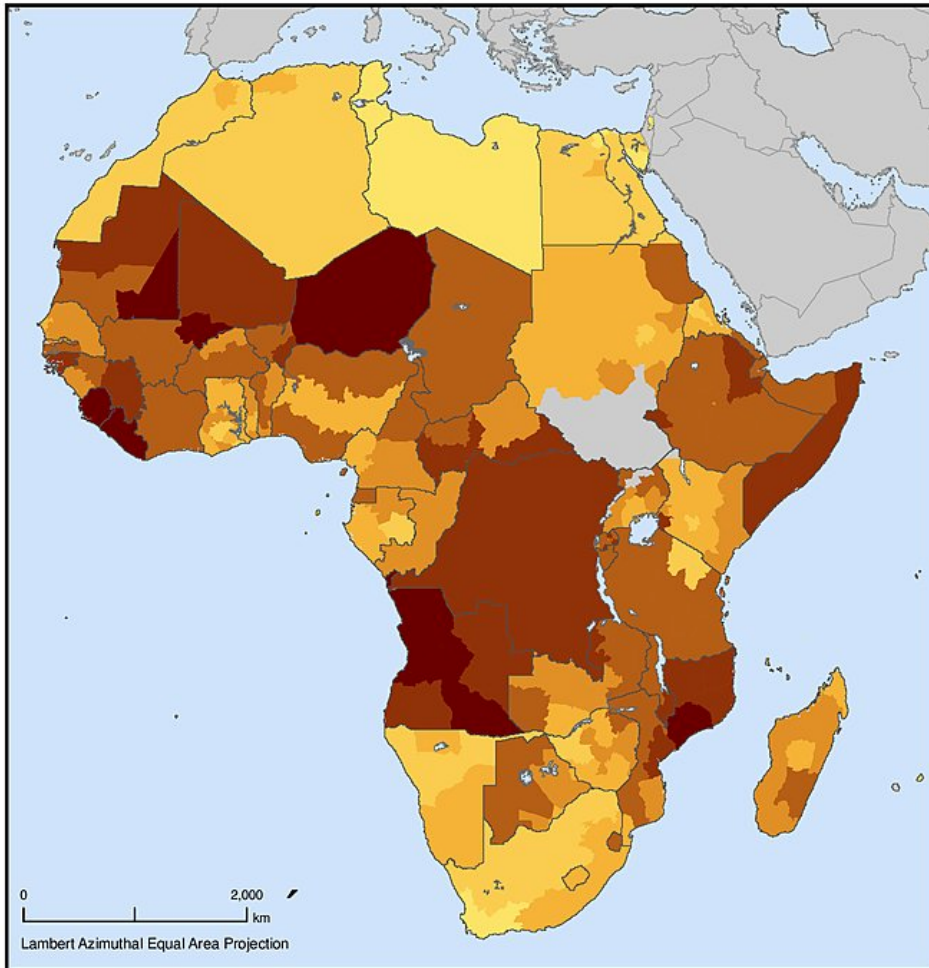
Africa
By Subnational Administrative Level

Measures of Poverty
Infant Mortality Rates [IMR]

Subnational mortality rates are adjusted to 2000 using national trend data.
Original data for 96% of countries are from 1995 or later. All data are from 1990 or later.

Infant mortality rate, 2000.
(per 1000 live births)

less than 9.1
9.1 - 25
25.1 - 50.0
50.1 - 75.0
75.1 - 100.0
100.1 - 125.0
125.1 - 150.0
more than 150.0
No Data
National boundary

Subnational boundaries have been
removed from countries for clarity.

Regional Infant Mortality Rates
Source: Socioeconomic Data and Application Centre (SEDAC)

Global Development Potential

A good number of countries in Sub Saharan Africa, particularly western and southern African regions have great development potentials, like their counterparts in southern America. However, it may be difficult to translate the potential to real development due to bad governance.
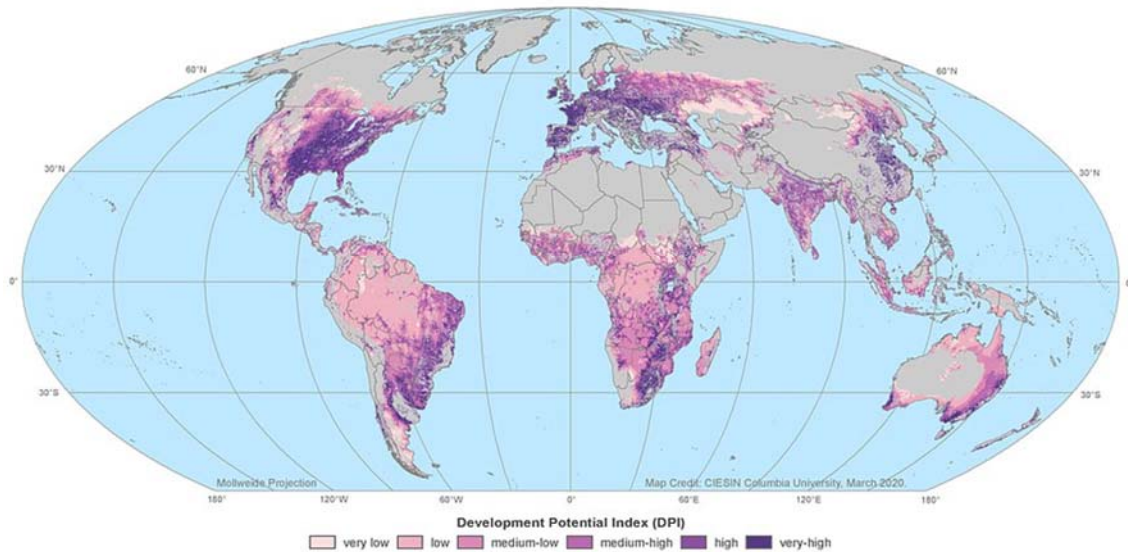
The Global Development Potential Indices are part of the Land Use Land Cover collection. The data set contains 13 sector-level Development Potential Indices (DPIs) for sectors related to renewable energy (concentrated solar power, photovoltaic solar, wind, hydropower), fossil fuels (coal, conventional and unconventional oil and gas), mining (metallic, non-metallic), and agriculture (crop, biofuels expansion). Each DPI is a 1-km spatially-explicit, global land suitability map that has been validated using locations of planned development as well as examined for uncertainty and sensitivity. This map displays the DPI for crops, grouped into 6 classes ranging from very low to very high.

Center for International Earth Science Information Network
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Data Source: Oakleaf, J. R., C. M. Kennedy, S. Baruch-Mordo, J. S. Gerber, P. C. West, J. A. Johnson, and J. Kiesecker. 2020. Global Development Potential Indices. Palisades, NY: NASA Socioeconomic Data and Applications Center (SEDAC). https://doi.org/10.7927/k9t6-gh59.

Land use cover. Global Development Potential Indices (2016)
Source: Socioeconomic Data and Application Centre (SEDAC)

CONCLUSION

Bad governance has been responsible for the underdevelopment of Sub-Saharan Africa. Competent leaders with high intellectual and leadership capacity are needed to overcome the syndrome of bad governance in Sub Saharan Africa. Holding governments to account for their actions and/or inactions by citizens of Sub-Saharan is a *sine qua non* for good governance.

Africa must be institutionalized to bring about change of posture by governments with dictatorial tendencies.

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APPENDIX

GLOBAL CURRUPTION INDEX

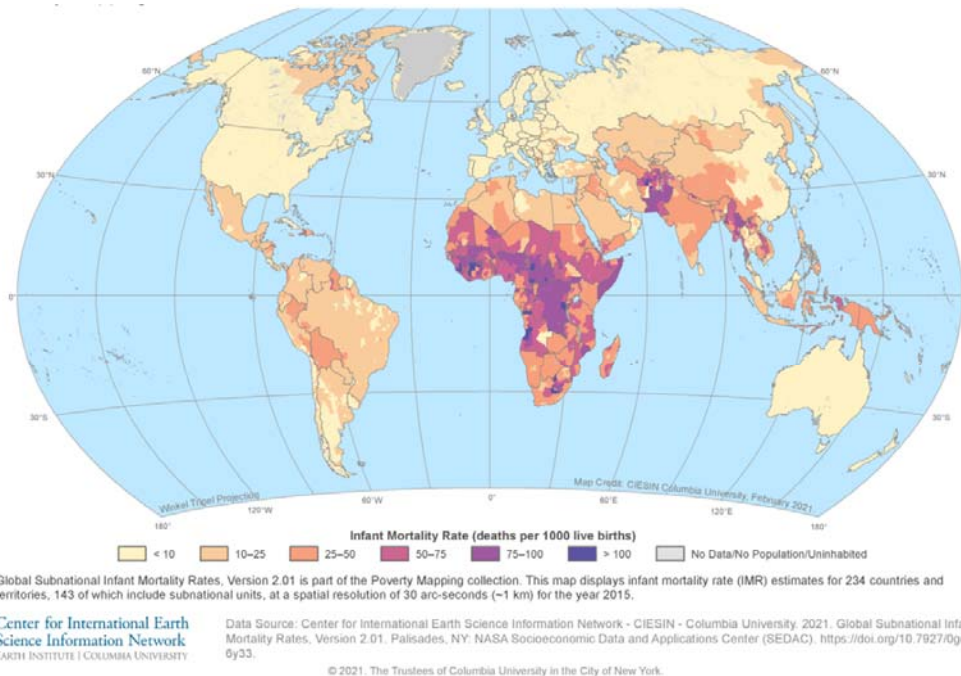| COUNTRY	LAST SCORE	PREVIOUS SCORE
Hong kong	76	77
Austria	74	76
Canada	74	77
Estonia	74	75
Iceland	74	75
Ireland	74	75
Australia	73	77
Belgium	73	76
Japan	73	74
Uruguay	73	71
France	71	69
Seychelles	70	66
United Arab Emirates	69	71
Bhutan	68	68
Taiwan	68	65
Chile	67	67
United States	67	67
Barbados	65	64
Bahamas	64	63
Qatar	63	63
Portugal	62	61
South Korea	62	61
Lithuania	61	60
Spain	61	62
Brunei	60	60
Isreal	59	60
Latvia	59	57
St Vincent and the Grenadines	59	59
Cape Verde	58	58
Costa Rica	58	57
Slovenia	57	60
Italy	56	53
Poland	56	56
St Lucia	56	56
Botswana	55	60
Dominica	55	55
Georgia	55	56
Czech Republic	54	54
Malta	54	53
Mauritius	54	53
Cyprus	53	57
Grenada	53	53
Rwanda	53	54
Saudi Arabia	53	53
Oman	52	54
Slovakia	52	49
Armenia	49	49
Greece	49	50
Jordan	49	49
Namibia	49	51
Malaysia	48	51
Croatia	47	47
Cuba	46	47
Montenegro	46	45

COUNTRY	LAST SCORE	PREVIOUS SCORE
China	45	42
Romania	45	44
Sao Tome and Principe	45	47
Vanuatu	45	43
Jamaica	44	44
South Africa	44	44
Tunisia	44	44
Ghana	43	43
Hungary	43	44
Kuwait	43	42
Senegal	43	45
Solomon Islands	43	42
Bahrain	42	42
Benin	42	41
Bulgaria	42	44
Burkina Faso	42	40
Belarus	41	47
East Timor	41	40
Trinidad and Tobago	41	40
India	40	40
Maldives	40	43
Columbia	39	39
Ethiopia	39	38
Guyana	39	41
Kosovo	39	36
Macedonia	39	35
Morocco	39	40
Suriname	39	38
Tanzania	39	38
Vietnam	39	36
Argentina	38	42
Brazil	38	38
Indonesia	38	37
Lesotho	38	41
Serbia	38	38
Turkey	38	40
Gambia	37	37
Kazakhstan	37	38
Sri Lanka	37	38
Ecuador	36	39
Ivory Coast	36	36
Moldova	36	34
Panama	36	35
Peru	36	38
Albania	35	36
Bosnia and Herzegovina	35	35
Malawi	35	30
Mongolia	35	35
Thailand	35	36
El Salvador	34	36
Sierra Leone	34	33
Algeria	33	36
Egypt	33	33
Nepal	33	33
Philippines	33	34
Zambia	33	33

COUNTRY	LAST SCORE	PREVIOUS SCORE
Swaziland	32	33
Ukraine	32	33
Gabon	31	30
Mexico	31	31
Niger	31	32
Papua New Guinea	31	27
Azerbaijan	30	30
Bolivia	30	31
Djibouti	30	27
Dominic Republic	30	28
Kenya	30	31
Laos	30	29
Paraguay	30	28
Togo	30	29
Angola	29	27
Liberia	29	28
Mali	29	30
Russia	29	30
Mauritania	28	29
Myanmar	28	28
Pakistan	28	31
Uzbekistan	28	26
Cameroon	27	25
Kyrgyzstan	27	31
Uganda	27	27
Bangladesh	26	26
Madagascar	26	25
Mozambique	26	25
Guatemala	25	25
Guinea	25	28
Iran	25	25
Tajikistan	25	25
Central African Republic	24	26
Lebanon	24	25
Nigeria	24	25
Cambodia	23	21
Honduras	23	24
Iraq	23	21
Zimbabwe	23	24
Eritrea	22	21
Congo	21	19
Guinea Bissau	21	19
Chad	20	21
Comoros	20	21
Haiti	20	18
Nicaragua	20	22
Sudan	20	16
Burundi	19	19
Republic of the Congo	19	18
Turkmenistan	19	19
Equatorial Guinea	17	16
Libya	17	17
Afghanistan	16	19
North Korea	16	18
Yemen	16	15
Venezuela	14	15

COUNTRY	LAST SCORE	PREVIOUS SCORE
Somalia	13	12
Syria	13	14
South Sudan	11	12

Source: Transparency International, 2022

PRESENTED PAPERS

PROFILE OF INDIGENOUS PRACTICES AS COPING STRATEGIES IN REDUCING POSTHARVEST LOSSES OF MAIZE IN KWARA STATE, NIGERIA

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[1]Center for Food Technology and Research, Benue State University, Makurdi, Nigeria
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[3]Nigerian Stored Products Research Institute, Ilorin, Kwara State, Nigeria

ABSTRACT

Indigenous preservation practices are vital for growth and development of farmers in rural communities. This study profiled the indigenous practices used as coping strategies in preserving maize grain among farmers in Kwara State, Nigeria. Cluster, purposive and snowball sampling techniques were used to select respondents for the study. Interview schedule was administered to 384 maize farmers, while 16 maize farmers' group leaders were interviewed using the Key Informant Interview to generate primary data. Data collected were described using frequency count, percentages, mean score, and standard deviation. Findings showed that pepper (90.6%), cribs and rhumbus (73.4%), ashes (78.1%), neem seed/leaf (63.0%) were the commonly used indigenous practices. Neem seed and leaf, pepper, wood ashes, mahogany and *Sachi* (poisonous tree), Ginger, sandpaper leaf, alum and partridge egg were frequently applied during storage. Cribs and rhumbus, aerial storage, and drum/calabash/local pot/gallon/tin/Jerri can were often applied during maize harvesting, transportation and storage. This study concludes that there are several effective indigenous practices used by farmers as coping strategies in reducing postharvest loss of maize in Kwara State. The study recommends appropriate documentation of these indigenous practices and modernizing them by the concerned research agencies in Nigeria for general use.

Keywords: documentation, method of application, pepper, stage of application,

INTRODUCTION

Indigenous practices are increasingly becoming part of the development agenda. Different societies or culture have peculiar indigenous practices for storing their produce and these practices are unique to their social and physical environment. They originate from the cultural connection with specific environmental conditions and are based on traditional societies having intimate consciousness of their environment. Small scale rural farmers, in a bid to reduce the enormous losses they suffer during and after harvest have been evolving a number of these indigenous practices through trial-and-error method. Across generations, farmers have accumulated knowledge of household practices by experimentation, observation, and by using age old people's wisdom and experiences (UNESCO, 2016).

Specifically, Indigenous practices (IPs) connotes knowledge accumulated over generations of living in a particular environment or locality and has been vital in responding to environmental challenges, including floods, diseases and pest infestations and their attendant effects, Asogwa., Okoye, and Oni (2017). These practices are the basis of community coping strategies that have helped many farmers to survive farm losses over centuries. Nigeria is particularly rich in such bodies of knowledge. Ancient civilizations, frequent disasters, diverse geo-cultural communities and large populations dependent on limited resources have all contributed to the evolution of very low-cost ways of life in the form of Indigenous practices in a very strong yet inconspicuous way. Based on the above background, this study was set out to document the indigenous practices use to reduce postharvest loss of maize.

METHODOLOGY

Study Area: This study was conducted in Kwara State.

Population of the study: The target population for the study include all maize farmers in the sixteen local government areas (LGAs) of Kwara State. According to the Kwara State Agricultural Development Project (KWADP), the estimated registered maize farmers in Kwara State as at December, 2020 was 5300 farmers (KWADP, 2020).

Sample/Sampling Procedure: Cluster, purposive and snowball sampling techniques were used to select the actual respondents for the study. Maize farmers were clustered into four agro-ecological zones that make up the agricultural zones in Kwara state. These zones are Kaima, Edu, Shao and Igbaja. Next was the purposive selection of one LGA each from the four agro-ecological zones based on the level of maize production. The selected LGAs were 4 namely: Kaima, Edu, Asa and Oyun LGAs in zone A, B, C and D respectively. Purposive sampling was further employed to select four (4) communities in each of the LGAs making sixteen (16) communities, based on the level of maize production from each LGA selected. Lastly snowball sampling technique was adopted to arrive at the individual respondents within the communities where a respondent gave

the researcher information on where to locate the next respondent hence they are within the same locality and know themselves. Twenty-five (25) respondents were selected from each selected communities making a total of 400 respondents for the study.

Methods of Data Collection and Analysis: Data for the study was obtained from primary sources. The primary data was obtained from field work using interview schedule and interview guide. The interview schedule was administered to 384 maize farmers while 16 maize farmers were interviewed using the Key Informant Interview (KII). The Data collected through the administration of structured interview were analysed with both descriptive statistics and Qualitative data collected through key informant interview was analysed by transcription

RESULTS AND DISCUSSION

Findings in table 1 depict that pepper powder (90.6%), wood ashes (78.1%), cribs and rhumbus (73.4%), neem seed and leaf (63.0%), aerial storage (56.5%) were used by majority and could be regarded as the commonly used indigenous practices for controlling postharvest losses of maize among farmers in Kwara State. Also, appreciable percentage of respondents used mahogany/*Sachi* (24.5%) and smoking 24(6.3%) while few respondents used cow leg (3.1%), sand paper leaf (2.6%), nail (2.6%), Papridge egg (2.1%), millipede (1.6%) and alum (1.6%).

Table 1: Application of Indigenous Practices in Controlling Post-Harvest Losses of Maize

S/n	Indigenous Practices	Mode of Application	Stage of Application	Freq.	%
1.	Neem seed and leaf	Mixture application	Storage	242	63.0
2.	Pepper powder	Mixture application	Storage	248	90.6
3.	Wood Ashes	Mixture application	Storage	300	78.1
4.	Cribs and Rhumbus	As container	Transportation and Storage	282	73.4
5.	Aerial storage	As container	Transportation and Storage	217	56.5
6.	Drum/Calabash/Local pot/Gallon/Tin/Jerrican	As container	Harvesting, Transportation and Storage	112	29.2
7.	Ginger	Surface application	Storage	10	2.6
8.	Mahogany/*Sachi*	Mixture application	Storage	94	24.5
9.	Millipede	Surface application	Storage	6	1.6
10.	Nail	Surface application	Storage	10	2.6
11.	Cow leg	Surface application	Storage	12	3.1
12.	Smoking	Regular contact	Storage	24	6.3
13.	Sandpaper leaf	Surface application	Storage	10	2.6
14.	Alum	Surface application	Storage	6	1.6
15.	Papridge egg	Surface application	Storage	8	2.1

Source: Field Survey (2021)

By implication, a widespread usage of pepper, wood ashes, cribs and rhumbus, neem seed/leaf, and aerial storage suggests that the practices are much more active in controlling postharvest losses of maize and more beneficial for gaining maximum profit in the business of maize production in Kwara State. Therefore, farmers must have experienced remarkable record of successes of these indigenous practices. Not only that, other characteristics of the practices may also influence the high usage like easy availability, affordability, and accessibility, most especially pepper and wood ashes.

Key informant interview was conducted to confirm information provided by maize farmers through interview schedule. A 50-year-old interviewee who has been farming maize for over 20 years in Lafiagi community, Patigi LGA (ADP Zone D), during the interview session said:
"...the back of *Sachi* and not the leaf is what I used to preserve maize. The back, which is poisonous to pests and insects is sundried and placed in the sack containing maize. In another way round, the back is soaked in the water, and then the empty sack that would be used to keep the maize is dipped in the *Sachi* water. The soaked sack is then allowed to dry and afterwards maize is loaded into the sack. The maize inside this sack is guaranteed safe from spoilage for as long as ten years……". (KII, 2021)

According to another discussant during in-depth interview, he described the use of *Sachi* in comparison to Mahogany thus:
"…*Wuchi* (Mahogany' back) is also applied the same way that *Sachi* is being applied for the storage of maize, but the *Sachi* back is more effective than the Mahogany back and by far the most effective of all the traditional practices in our community. None of these practices have any side effect. Regarding *Sachi*, once you are ready to use the stored maize, just expose it to the air and then wash with water……" (KII, 2021).

A 40-year-old participant during in-depth interview with about 20 years' experience in main

cultivation and preservation testified to the effectives of the use of *Eyin Aparo* as follows:

"…We do use Eyin Aparo (partridge egg) to keep our harvested maize. Minimum of two freshly hatched eggs are placed at the middle of a 50kg sack of Maize. It is important to ascertain the freshness of the egg because the eggs already seated (hibernated) upon by the partridge cannot achieve the same result. Once the eggs are carefully placed at the middle of the maize in the sack, the mouth is then tied and kept in the room. With this practice, our produce is kept safe for a minimum of one year. However, exposure to air can easily undermine its effectiveness..." (KII, 2021).

Another maize farmer during an in-depth interview session in Ballah community reiterates his delightful experience about the use of millipede as follows:

"...We do store maize in airtight containers with the addition of millipedes. After pouring maize in the container, millipedes are introduced into it and then properly covered. Without any chemical this method is effective enough to prevent pests from getting into it. With this what is stored can be free of pests for over a year (In-depth interview, 2021)"

While discussing about the effectiveness of Sandpaper leaf, a male participant of an in-depth interview in Igosun community narrated his experience about the use of (Sandpaper leaf) "*Ewe Ipin*" Eyin aparo, "egungun Maalu gbibge" (dried cow bone) etc.

CONCLUSION AND RECOMMENDATIONS

This study concludes that there are several of indigenous practices used by farmers in reducing postharvest losses of maize in Kwara State. The study recommends appropriate documentation of indigenous practices and upgrading commonly used among farmers by concerned research institute in Nigeria. Pepper, wood ashes, cribs and rhumbus, neem seed/leaf, and aerial storage were among the commonly used indigenous practices by maize farmers in Kwara State. This study suggest that the concern agricultural research institute consider more research into these practices to provide a look-like and improved version of these tools at affordable rate. Furthermore, adequate experimental research to produce pepper/ginger-based products for the preservation of maize is also recommended.

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DETERMINANTS OF CATFISH FARMERS ADOPTION OF IMPROVED HATCHERY PRACTICES IN IKORODU LOCAL GOVERNMENT AREA OF LAGOS STATE, NIGERIA

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ABSTRACT
The study assessed the determinants of catfish farmers' adoption of improved hatchery practices in Ikorodu local government area of Lagos state. Simple random sampling technique was used to sample 103 respondents for the study. Data were collected on the respondents' socioeconomic characteristics, types of improved hatchery practices, constraints, and the determinants of respondents' adoption of improved hatchery practices using a structured questionnaire. Data were analysed using descriptive (frequency counts, percentages, mean and standard deviation) and inferential (Pearsons Product Moment Correlations) statistics at p=0.05. Findings of the study showed that the mean age of respondents was 37years, 83.5% were male, majority (65%) married and the mean years of formal education was 14. Artificial insemination practice ($\bar{x}$=1.8) was the mostly used improved hatchery practice, while high cost of feed (x=1.9) was a serious constraint militating against the adoption. Tenancy status (x=4.0) and observability (x=3.6) were the major determinants of adoption of improved fish hatchery practices among respondents in the study area. Significant relationship (r=0.299, p<0.05) was found between age and determinants of adoption of improved hatchery practices. The study recommended that land acquisition for agriculture and tenure system be made flexible, facilities be subsidized, and the farmers be encouraged to form themselves into groups for ease of pulling resources together and sharing same for production.
Keywords: Determinants, Hatchery practices, Adoption, Catfish farmers

INTRODUCTION

Aquaculture is the rearing of aquatic organisms under controlled or semi-controlled conditions (Stickney, 2017). It is also defined as the farming of aquatic organisms, principally fish, molluscs, crustaceans and Marine algae (Bunting, 2013). Aquaculture has undergone rapid growth in volume and value over the decades provoking both optimism and apprehension among researchers and practitioners concerned with global food security (Be'Ne, *et al* 2016). A milestone was reached in 2014 when the aquaculture sector's contribution to global food fish supply reached 50% and outpaced that of capture fisheries for the first time (FAO, 2014). Driven by the high and increasing demand for seafood, the aquaculture sector is the fastest growing food sector world-wide, reaching an all-time high in production estimated at 73.8million tonnes (mt) in 2014 (sales value of $160bn) (FAO, 2016). In Nigeria, like many coastal developing countries, fish is an important source of food for the population, which is currently estimated at 206 million people (World Bank 2020).

A fish hatchery is a special place where fish breeding; egg fertilization, incubation, hatching and rearing through the early stage of life into fingerling is carried out artificially. It allows the improvement of the genetic and phenotypic traits of the cultured aquatic organism as desirable traits can be enhanced and undesirable traits checked or controlled through cross breeding. In general, a hatchery can be situated on an aquaculture farm (incorporating a hatchery with normal fish production) with the sole purpose of providing fingerlings for the farm or it can be carried out in entirety on a farm (focusing solely on fingerling production) Agro Nigeria (2015). The task of feeding over 21 million people in Lagos state with fish and seafood products is a large one. Its industrial status poses a lot of competing needs for land, thereby limiting the amount of land available for aquaculture. In a bid to boost table-size catfish production in the state, Lagos State government introduced improved breeding and hatchery management practices as a package to fish hatchery operators in Lagos State. The package comprised an introduction and use of improved brood stocks, hatching troughs, live feed for fish fry, use of sorting trays, graders, synthetic hormone for hormonal inducement, water exchange systems as well as effluent management (Lagos State Agricultural Development Authority [LSADA], 2010). and determinants of adoption of improved hatchery practices.

METHODOLOGY

The study was carried out in Ikorodu Local Government Area of Lagos state. The list of registered catfish farmers involved in hatchery was obtained from the President of Catfish Farmers' Association of Nigeria (CAFAN), Ikorodu Local Government Chapter. From the list, a simple random sampling technique was used to draw 79% for the study. The study sampled 103 respondents. Data for the study were collected using structured questionnaire. Information elicited covered the respondents' socioeconomic characteristics, types of improved hatchery practices, constraints and factors of adoption of improved hatchery practices among respondents in the study area. Factors of

adoption of improved hatchery practices, which was the dependent variable of the study was operationalized by providing respondents with items on a 4-point Likert type scale of strongly agreed (4), agreed (3), disagreed (2) and strongly disagreed (1) for positive statements and vice versa for negative statements. Data were analysed using descriptive statistics.

RESULTS AND DISCUSSION
Socioeconomic characteristics

Result in Table 1 reveals the mean age of respondents was 37, male dominated (83.5%) and 65.0% were married. Majority of the respondents (54.4%) had up to secondary level of education and majority (64.1%) were Yoruba. The mean household size of respondents in the study area was six.

Youth or younger people tend to be more energetic, adjust faster, and adopt new technologies, thus may be productive than the elderly who may be more conservative. Age of the respondent ranges from 20 to 69 years in which a sizeable portion were within the age bracket of 20 to 29 years. Fakoya and Daramola (2005) observed that respondents within this age bracket are more innovative, motivated and adaptable individuals who can cope with farming challenges.

Level of education plays an important role in influencing productivity and profitability. Lareau (2003) noted that higher levels of education are associated with better economic and psychological outcomes (i.e, more income, more control and greater social support and networking). The findings of this study reveal that majority of the catfish hatchery farmers were fairly educated, 54.4% have a minimum of secondary education which is an indicator of low level of education among respondents.

Table 1: Distribution of Respondents Based on Socioeconomic Characteristics (N=103)

Variables	Frequency	Percentage	Mean	SD
Gender				
Male	86	83.5		
Female	17	16.5		
Age				
20-29	36	35.0	37	10.4
30-39	26	25.2		
40-49	28	27.2		
50-59	12	11.6		
60-69	1	1.0		
Marital status				
Single	35	34.0		
Married	67	65.0		
Widowed	1	1.0		
Tribe				
Hausa	6	5.8		
Igbo	24	23.3		
Yoruba	68	66.0		
Others	5	4.9		
Formal education (no. of years)				
2-5	3	2.9	14	4.2
6-9	6	5.8		
10-13	56	54.4		
14-17	30	29.1		
18-21	3	2.9		
22-25	5	4.9		
Household size				
0-2	10	9.7	6	2.5
3-5	41	39.8		
6-8	52	50.5		

Source: Field survey 2022

Types of improved hatchery practices

The result in the Table 2 shows that artificial insemination practice (x=1.8) is mostly used by the respondents because of its better fertilization rate and hatching, protection from predators and unfavourable environmental conditions with better growth and survival conditions, its cost little or no amount, while Injection of natural hormones (x̄=1.5) is mostly used for fish that are already in breeding condition

and have matured eggs in which the germinal vesicle has migrated and can easily be induced to spawn by injection of naturally occurring reproductive hormones or their synthetic analogue. Also, injection of Deoxycorticosterone Acetate (DOCA) (x^-=0.80) was used among respondents. The use of this method was not popular probably because this compound only induces pre-ovulation or final maturation. Injection of Human Chorionic

Gonadotropin (HCG) (x^-=0.52) was a less specific method of inducing spawning, it's cost-effective method of inducing spawning but it's primarily used on ripe fish to ensure completeness of spawning as well as maximum output, it's the oldest agent commercially used in induced spawning.

Table 2: Distribution of respondents based on types of improved hatchery practices

Common improved Hatchery practices	Always	Seldom	Never	Mean	SD
Artificial insemination practice	66 (64.1%)	27 (26.2%)	10 (9.7%)	1.8	0.49
Injection of natural hormones	66 (64.1%)	27 (26.2%)	10 (9.7%)	1.5	0.66
Injection of DOCA	21 (20.4%)	41(39.8%)	41(39.8%)	0.80	0.75
Injection of HCG	10 (9.7%)	34 (33.0%)	59(57.3%)	0.52	0.66

Source: Field survey 2022

Constraint facing adoption of improved fish hatchery practices

Results in table 3 shows the constraints facing adoption of fish hatchery practices among the respondents. High cost of feed was ranked by most of the respondent to be very serious (x^-=1.9) while inadequate finance (x^-=1.8) was chosen by the respondents as the second major constraint militating against adoption of improved hatchery practices. According to Nwachukwu and Onuegbu (2007), the crucial point for fish farmers is to be able to afford any technology extended to them. The inability of farmers to afford and /or maintain such technology will make them ignore and

abandon it. Pest and disease (x^-=1.6) were also another factor causing setback in adopting hatchery innovations, unorganised marketing (x^-=1.4) and limited space (x^-=1.4) were another major setback. Lagos state is small in terms of land and the amount of space for human housing and any agricultural activity is limited in supply, many of the job seekers did not really have preference for hatchery production and management. The amount of money offered for hatchery jobs are usually less attractive for quality and skilled workers. Those that usually embraced the offer initially are always looking out for higher offer and more stable employment elsewhere.

Table 3: Distribution of Respondents based on Constraints facing Adoption of Improved Fish Hatchery Practices (n=103)

Problems	Severe constraint	Mild constraint	Not a constraint	Mean	SD
Inadequate finance	78(75.5%)	25(24.3%)	0.0(0.0%)	1.8	0.4
Limited space	34 (33.0%)	38(36.9%)	31(30.1%)	1.4	1.2
Security of brood stock	50(48.5%)	35(34.0%)	18(17.5%)	1.3	0.8
Epileptic power supply	40(38.8%)	41(39.8%)	22(21.4%)	1.1	0.8
Theft	24(23.3%)	52(50.5%)	27(26.2%)	0.9	0.4
Inadequate extension service	42(40.8%)	44(42.7%)	16(15.5%)	1.2	0.7
High cost of feed	95(92.2%)	6(5.8%)	2(1.9%)	1.9	0.4
Pests and diseases	38(36.9%)	62(60.2%)	3(2.9%)	1.6	0.6
Unorganised marketing	44(42.7%)	52(50.5%0	7(6.8%)	1.4	0.6
Labour rate	37(35.9%)	54(52.4%)	12(11.7%)	1.2	0.6

Source: Field survey 2022

Determinants of adoption of improved hatchery practices

Summary in Table 4 shows tenancy status (x^-=4.0) and observability (x^-=3.6) as the major

determinants of adoption of improved fish hatchery practices among respondents in the study area.

Table 4: Summary of the determinants of adoption of improved hatchery practices

SN	Determinants	Mean
1	Affordability	2.5
2	Complexity	3.3
3	Tenancy status	4.0
4	Observability	3.6

Source: Field Survey 2022

CONCLUSION AND RECOMMENDATIONS

The study concluded that the various types of improved hatchery practices used by the respondents in the study area were artificial insemination, injection of natural hormones, injection of DOCA and injection of HCG. The major determinants of adoption of improved fish hatchery practices were tenancy status and observability. The study therefore recommended that personal ownership of hatchery facilities should be encouraged among fish farmers and the results of fish hatchery innovations should be sufficiently visible to increase adoption rate.

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COPING STRATEGIES ADOPTED BY IFAD-CASP PARTICIPATING CROP PRODUCERS TO CUSHION THE EFFECT OF FARMERS/ HERDERS CONFLICT ON FOOD SECURITY IN ZAMFARA STATE, NIGERIA

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ABSTRACT
The paper examined the coping strategies adopted by IFAD-CASP participating crop producers to cushion the effect of farmer/herder conflict on food security in Zamfara State, Nigeria. Interview schedule and focus group discussion (FGD) were used to collect data from 360 respondents that were selected for the study. A multistage sampling procedure was used in selecting the respondents. Descriptive statistics tools such as mean, and percentages were used for data analysis. The results revealed that majority of the respondents were married with an average household size of 8 persons and income level of less than N20,000/month. The result on coping strategies adopted to cushion the effects of farmer/ harder conflict on food security indicated reversible and non-reversible strategies adopted by the respondents, with all reversible strategies having a mean of above $\bar{x}=4.0$, while the non-reversible strategies adopted indicated sale of asset accumulated over the years with a mean of ($\bar{x}=2.68$), migration from rural conflict area with a mean of ($\bar{x}=2.52$), begging ($\bar{x}=2.37$) while prostitution and theft account for mean of ($\bar{x}=1.62$) and ($\bar{x}=1.29$) respectively. The results further revealed the coping strategies adopted by the government during post farmer/herder conflict situation. It shows the provision of shelter and relief materials to respondents with mean scores of $\bar{x}=3.69$ and $\bar{x}=4.1$, respectively implying satisfaction by the respondents. On the positioning of security personnel affected by farmer/ herder conflict, respondents were not satisfied indicating a mean of ($\bar{x}=2.72$). Based on the findings of the study, it could be concluded that farmer/herder conflict posed a threat to IFAD-CASP's aims and objectives in the study area. The study therefore, recommended the urgent recruitment of security personnel for effective policing. Conditional grant and other assistance should be immediately rendered to victims of farmer/herder conflict to begin a new life again.
Keywords: Coping Strategies, IFAD-CASP beneficiaries, Farmers/herders conflict, Food security

INTRODUCTION

Farmers/herders conflict has become a widespread social phenomenon that is fast ravaging several societies of the world. In most cases farmer/herder conflict is usually the decision of individual centrally organised parties geared to engage in open armed clashes in disputes about power over government and territory and such conflicts are caused by several factors (Mohammed, 2017). Among the factor include is insincerity on the part of one or the parties that were involved, is the disappointment from either of the parties that were involved, is internal disagreement (Ashe, 2019), is inability to address the root cause of a long-standing conflict, is the proliferation of weapons and arms, that causes armed conflict, according to Bello (2017) is the ethnic factor. According to Dimelu (2017) farmer/herder conflict can only be made possible when weapons are made available to fight, thereby inflicting injuries and sometime death of individuals. Similarly mischievous individuals take advantage of it to cause disturbance to achieve their interest. According to Hazen (2008), farmer/herder conflict is fast becoming popular in developing countries than in developed ones. It is also fast becoming an integral part of the activities in most

developing nations like Nigeria. Earlier researchers (Bello, 2017) have shown that the aftermath of armed conflicts in society has been consistently negative, for instance, it increases the rate of poverty, resulting to an increase in the number of internal displacements of several persons, causes outbreak of diseases, reduce food security and stunt impediment in economic growth.

Just like other developing nations, Nigeria has in the last five decades, experienced various forms of armed conflict, most notably after independence (1960). It has occurred in almost all the six geopolitical zones of the country. Even though the incidences do not cut across every state in each geographical zones, yet *al*most all the states have suffered from its negative consequences either directly or indirectly (John, 2018). Thus, the consequences of rural banditry on the Nigerian society are negative and endless because besides affecting almost all the states of the federation it also affected virtually every other area in the state where it occurred. For instance, in Zamfara, it has led to massive loss of lives and properties and caused disease and disabilities. It has also increased the numbers of widows, widowers and orphans. It has raised up the rate of depression, trauma, mental retardation, suicide and environmental destruction

with dire consequences for agricultural production and food shortages (Kuna and Ibrahim, 2015).

METHODOLGY
Study area
This study was conducted in Zamfara State, the capital of Zamfara State is Gusau. The state was established in 1996 by the then military administration of the Late General Sani Abacha. Zamfara State was carved out of Sokoto State. It comprises of fourteen (14) Local Government Areas, with an area landmass of 38,418 sq. km. The state stretches between Latitude 10 21' to 13 15'N and Longitude 60 20'E. Zamfara Sate is bordered in the North by Niger Republic, in the South by Kaduna State, in the East by Katsina State and in the West by Sokoto, Kebbi and Niger States respectively, the state lies in the Sudan Savannah

Agro Ecological Zone of Nigeria and has a population of 4,515,400 according to (NPC 2019) projection.

Statistics have shown that more than 80% of the people living in Zamfara State engage in various forms of agricultural activities ranging from crop production of millet, guinea corn, maize, rice, groundnut, cotton, tobacco and beans to livestock and fish farming. The climate exhibits a definite mark of wet and dry seasons. Tropical continental air mass predominates during the dry season while harmattan last from December to February and wet season June to mid-October. Rainfall distribution varies from 675mm to 1000mm with an average annual temperature of between 26 and 30 degrees centigrade (John, 2018).
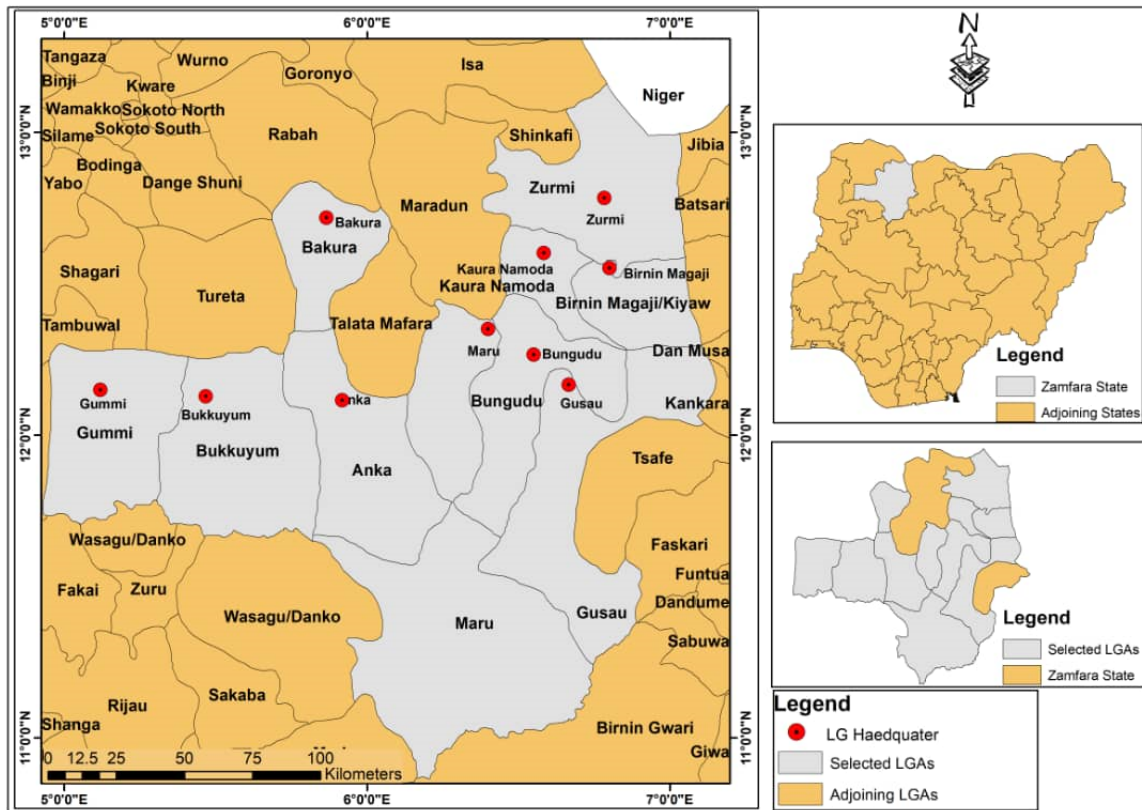
Fig 3.1: Map of the Study Area. Source: Department of Geography UDUS

Sampling techniques and sample size
The population of the study comprises of participating crop producers of IFAD-CASP in Zamfara State, Northwest Nigeria. The State is divided into three agricultural zones namely: Northern Zone (Birnin Magaji, Kaura Namoda, Shinkafi and Zurmi LGAs), Central Zone (Bungudu, Gusau, Maru and Tsafe LGAs), and Western Zone (Anka, Bakura, Bukkuyum, Gumi, Maradun and Talata Mafara LGAs). A comprehensive list of CDAs was obtained from

IFAD-CASP office in Gusau, then the selection of sample for the study was done using multi-stage sampling technique. At the first stage, from each of the three agricultural zones, three LGAs were purposively selected to obtain a total of nine (9) LGAs. At the second stage, twelve (12) CDAs were selected from each of the LGA selected to obtain a total of thirty-six (36) CDAs. At the third and final stage, ten (10) respondents were selected using simple random sampling from each of the

selected CDA to obtain a total of three hundred and sixty (360) respondents.

RESULTS AND DISCUSSION

Table 1 shows the Socioeconomic Characteristic of the IFAD-CASP Participating Crop Producers. Socioeconomic information of the IFAD-CASP participating crop producers with regards to impact assessment of farmer/herder conflict is very important as studies have shown that outstanding factors which include age, gender, marital status, educational level, income, residence, and household size are considered as the major socioeconomic characteristics in this study area. The gender of the IFAD-CASP participating crop producers is expected to have effect on the level of involvement in farming activities and IFAD-CASP, this are accredited to the religious and cultural background of IFAD-CASP participating crop producers in the study area, Majority 71.9% of the participating crop producers of IFAD-CASP were male due to their active involvement in outdoor activities such as farming and animal rearing. While female participates mostly in indoor farming activities such as small animal rearing, processing, threshing and packaging of farm produce this is so because Islam is the predominant religion and has put some restrictions on women to interact freely outside the matrimonial homes and getting responses from such category is sometimes impracticable. These discrepancies are believed to have been influenced by the nature of the study theme- rural banditry which is highly practiced by the male counterparts (John. 2018). Again, some women felt this is not their area of interest because they hardly participate. Even though they are also directly affected by these harmful acts as they are mostly the victims of rape abduction and other forms of sexual abuses (Mohammed, 2017).

The age of IFAD-CASP participating crop producers has effect on the level of activities. It determines the level of participation in the programme, and it is an important measure of farm productivity. The age grouping can be divided into say the active group and dependent age group. Table 1 shows that about (32.5%) of the IFAD-CASP participating crop producers were between the age ranges of 28-37years which is the active age range. At this age, the respondents are expected to be virile and able to do a lot of farm work if given proper incentives. According to Mohammed, (2017) majority of the respondents were within their youthful ages of active involvement in rural occupations which are mostly farming and rearing of domestic animals and invariably became more affected by the problem of cattle rustling as they are usually the target.

This agrees with the findings of Hazen, (2008) who posited that youth perform most active

farm operation and majority of the youth are between the ages brackets of 18-35years. This was an expected indicator since the youths have been highlighted as the main players in the rural banditry activities. This agrees with the findings of Dimelu, (2017) who opined that Majority (52.2%) of the farmers were below the mean age indicating that the farmers were still in their active and productive years. Consequently, they may respond violently to conflict issues or become very aggressive to herdsmen due to youthful exuberance. Also, the results show the dominance of male in farming probably because men are more energetic and capable of involving in tedious production activities associated with farming than women. It is believed that married couples are likely to participate more in IFAD-CASP than single parent families due to labour supply in farming activities and access to productive resources in agriculture (Momale et al., 2019). The research findings show that, majority of the IFAD-CASP participating crop producers are married having (77.8%), single having (13.6%), widowed (4.7%) and divorced (2.5%). This implies that most of the participating crop producers have some responsibilities; therefore, marital status is an important factor to be considered in any programme of change to be introduced to the study area since family decision will be required in any activity to be embarked upon Magnus, (2008).

Zamfara State Climate Change Adaptation and Agribusiness Support Programme Officer (IFAD-CASP) said that the Programme was aimed to providing access to improved seeds and technologies that has helped farmers increase production as well as their income. According to the State Programme Officer raising the income of farmers through the provision of improved seeds and farming practices, which the farmers adopt has recorded high yields. "The programme has helped many farmers by increasing their yields and enhancing the farmers' income". However, this research finding disagreed with the above statement due to rising issue of rural banditry and rural banditry in the study area. Majority (53.3%) of the IFADCASP participating crop producers in the study area has an income of <₦20,000. This implies that participating crop producers suffer more loss such as reduction in output and income from crop because of the destruction of crops and indiscriminate bush burning by rural bandits. The findings of Momale et al., (2019) shows that majority of the farmers suffer more losses from farmer-pastoralist conflicts, especially economic losses such as reduction in output (20.0%), loss of properties (28.3%), and scarcity of food (23.3%) were regarded as severe economic losses experienced by farmers. A larger percentage (46.7%) of the farmers indicated loss of properties

as a major economic loss encountered because of conflict. It is necessary to establish the residence of the participating crop producers, in such a way to find out the location of the participating crop producers either urban or rural dwellers. Majority of IFAD-CASP participating crop producers (83%) are rural dwellers in the study area which are more affected by the issue of rural banditry and rural banditry while (17%) are urban dwellers.

According to Dimelu (2017) in his studies on Livelihood issues in herdsmen-farmers' conflict among farming communities in Kogi State, found out that (22%) of the farming family lives in urban area. This could negatively affect the farmers' perception of conflict situation and subsequently their behaviour and altitude to conflict. This might be one of the reasons why farmer-herders' conflict has remained unabated and a regular phenomenon

in Zamfara state. This agrees with finding of this research which revealed 83% of IFAD-CASP participating crop producers are rural dwellers. Relatively the larger the family size of the IFAD-CASP participating crop producers may mean more people to cater for and more labour force will be available to work on the farm and help with other farming activities. The result in Table 1 shows that majority (33.8%) IFAD-CASP participating crop producers have a household size of 0-5, followed by (37.5%) of the participating crop producers have household sizes of 6-10 people. This implies that most of the IFAD-CASP participating crop producers have a larger household size which may have resulted from the need for family labour which may increase household productivity and larger household size may consequently result to more dependent family members.

Table 1 Distribution of Socioeconomic Characteristic of the IFAD-CASP participating crop producers in Zamfara State N 360

Variables	Frequency	Percentage
Sex		
Male	259	71.9
Female	101	28.1
Age		
18-27	56	15.5
28-37	117	32.5
38-47	79	21.9
48-57	80	22.2
58<	28	7.9
Marital Status		
Single	49	13.6
Married	280	77.8
Divorced	9	2.5
Separated	5	1.4
Widowed	17	4.7
Income/Month		
>20,000	199	55.3
20,001-50,000	132	36.7
50,001-80,000	16	4.4
80,001-110,000	10	2.8
110,001<	3	0.8
Residence		
Rural	298	82.7
Urban	62	17.3
Household Size		
0-5	122	33.8
6-10	135	37.5
11-15	70	19.4
16-20	33	9.3

Source: Field survey, 2022

Table 2 shows the Coping Strategies Adopted by IFAD-CASP Participating Crop producers to cushion the Effect of farmer/herder conflict. This section analyses the coping strategies adopted by both IFAD-CASP participating crop producers and Government to cushion the effect of

rural banditry. The coping strategies used by participating crop producers can be seen as an expression of negotiation decision to minimize the effect of rural banditry among crop producers Hazen (2008). Coping Strategies adopted by crop producers in response to economic risks and shocks

in peaceful regions may differ from those used in rural banditry settings. They may also differ across rural and urban farmers, as urban farmers will have less access to land and less mobility (once fighting reaches urban areas) than rural farmers. There is currently little understanding of differences between banditry-time and banditry post-war coping strategies of crop producers, or between those of rural and urban farmers, though evidence is slowly accumulating. Violence during rural banditry typically results in destruction of essential infrastructure and social services, breakdown of the rule of law, as well as significant reductions in private and public investment Ashe, (2019).

Table 2. Distribution of Respondent according to erosive/ reversible Coping Strategies Adopted during Farmer/herder conflict

How likely do you undergo the following	V. Likely	Likely	Not Likely	Unlikely	Undecided	Mean ($\overline{x}$)	Ranks
1. Borrow money/soft loan	198 (55)	79(21.9)	50 (13.8)	18 (5)	15 (4.1)	4.17	5
2. Reduction in dietary intake	234 (65)	84(23.3)	20 (5.5)	12 (3.3)	10 (2.7)	4.44	3
3. Buy cheaper food	222 (61.6)	97(26.9)	25 (6.9)	7 (1.9)	9 (2.5)	4.43	4
4. Reduction of meal	240 (66.6)	79(21.9)	20 (5.5)	10 (2.7)	11(3.0)	4.46	2
5. Skip entire day without meal	272 (75.5)	63(17.5)	15 (4.1)	5 (1.3)	5 (1.3)	4.64	1

Source: Field survey, 2022.

The result in Table 3 revealed the likely non erosive coping strategies adopted by respondents. Majority of the respondents with a mean ($\overline{x}$=4.64) were likely to skip the entire day without meal as the coping strategies adopted during farmer/herder conflict, the respondent in the study area were unable to feed their family because of rural banditry issue some of the respondents send out their children to beg for food while other send their children in search for food in the wild. This result to eating once in a day or skipping the entire day without meal where rural banditry is more pronounced, skipping the entire day without eating is also an adoptive strategy this alter the consumption pattern of the rural dweller or force them into unfavourable dietary adjustment which described as a negative mechanism cause by rural banditry.

Reduction of meal, reduction in dietary intake and buy of cheaper food with a mean of ($\overline{x}$=4.46), ($\overline{x}$=4.44) and ($\overline{x}$=4.43) respectively, these strategies are considered as first stage responses developed by the respondents which are reversible and are principles which do not damage livelihood and future productive capacity and primarily aim at preventing destitution. Buy of cheaper food ($\overline{x}$=4.43) among the respondent could be linked to the high market price of basic food stuff because of the rural banditry activities in the study area. This agrees with Bello (2017) that conflict effects have multiplier consequence on both the general well-being of the rural poor. Borrow of money/soft loan with a mean of ($\overline{x}$=4.17) these coping strategies are less reversible as the respondents are forced to use the strategies as a means of adopting to the crises of rural banditry. Borrow of money has severe implication for the future productive potential and long-term food security, respondents had to borrow money/seek for soft loan from friend and family to survive especially when the respondents did not get money to feed their family during the time of crises. The non-erosive (reversible) coping strategies adopted by the respondents all has aa mean of $\overline{x}$=4.0 and above, implying that the coping strategies were very likely effective.

The result in Table 3 indicates the sale of asset accumulated over the years with a mean of ($\overline{x}$=2.68) carried out during rural banditry crises as a strategy to mitigate the effect of suffering among the respondents, migration account for mean with ($\overline{x}$=2.52) from rural conflict area to conflict free zone, begging as a coping strategy with a mean ($\overline{x}$=2.37) during the crises period. Migration and begging have long term negative consequence, not only for the development of the reference community, for example removing children from school aggravate the study area to poor social context characterized by widespread illiteracy and low level of education. In addition, through migration as a strategy, limit female children access to school compromises women effective competition in the labour market, intensifying poverty at the rural level. Migration increases number of child labour to a mean ($\overline{x}$=2.17) crop producers have no option but to seek for loan to resolve their social wellbeing as they must start from the scratch again. Occasionally, crop producers adopted prostitution and thief as a mean of coping strategies with a mean of ($\overline{x}$=1.62) and ($\overline{x}$=1.29) respectively. This creates social and economic inequality with detrimental effect on the wellbeing, social stability, economic growth and prosperity of participating crop producers. The results from the study reflect a situation whereby most of the respondent used number of options to deal with the shock that arise during and after conflict.

Table 3. Distribution of respondent according to non-erosive/ irreversible coping strategies adopted during farmer/herder conflict

Do the following serve as a coping strategy adopted?	Frequently	Occasional	Never	Mean ($\bar{x}$)
1. Sale of Asset	272 (75.5)	63 (17.5)	25 (6.4)	2.68
2. Huge loans	259 (71.9)	86 (23.8)	15 (4.1)	2.4
3. Begging	254 (70.5)	86 (23.8)	20 (5.5)	2.37
4. Migration	230 (63.8)	90 (25)	40 (11.1)	2.52
5. Child labour	112 (31.1)	198 (55)	50 (13.8)	2.17
6. Prostitution	12 (3.3)	100 (27.7)	248 (68.8)	1.62
7. Thief	15 (4.1)	77 (21.3)	268 (74.4)	1.29

Source: Field survey, 2022

CONCLUSION

Based on the summary finding of this study, the research established that majority of IFAD-CASP participating crop producers were male, married with a mean age of 33 years and an average income of less than N 20,000/ month. The factors influencing the participation of IFAD-CASP participating crop producers in the programme appears positive and statistically significant. This implies that a probability increase in the independent variables (conflict, insecurity, fear, location and experience in conflict) would lead to decrease in dependent variable (participation). Further established was widespread poverty, proliferation of small arms and weapons competition for gold mines and dispute over farmland account for causes of farmer/herder conflict in the study area, resulting to economic, social and physical decline in livelihood of the crop producers. These conflict engagements have drastically affected food security and the activity of IFAD-CASP in carrying out its mandate to the respondents in the study area. In addition, IFAD-CASP participating crop producers were perceived to derive less benefit from the programme.

The research therefore concluded that farmer/herder conflict has significantly affected food security of the IFAD-CASP participating crop producers in Zamfara state Nigeria.

RECOMMENDATIONS

Based on the finding of the research, the following recommendation were deemed necessary.

1   The Federal Ministry of Humanitarian Affair, Disaster Management and Social Investment in collaboration with States, Local Government and Non-Government agencies should enroll the vulnerable into its social support investment programmes such N-power, Presidential youth empowerment scheme (P-YES) conditional cash grant, market money and other special intervention scheme.

2   Government should as a matter of urgency provide adequate security to Mann the porous borders of the north-western states. This can be achieved through the Nigeria immigration service and other sister security and intelligence communities.

3   Both primary and secondary stakeholders like the community, traditional leaders, politicians, government and NGO should focus on providing information for early warning, organise training, workshop and seminar on peace building process and reconciliations.

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USE AND MISUSE OF SOCIAL MEDIA BY THE YOUTHS IN IKERE-EKITI LOCAL GOVERNMENT AREA OF EKITI STATE, NIGERIA

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 ABSTRACT
Today, the use of social media has become an essential daily activity, it is principally used for social interaction and access to news and information, and decision making. It is a treasured communication tool with youths in rural communities and worldwide. This phenomenon has revolutionized the way people communicate and share information and human skills. This study seeks to determine the use and misuse of social media by the youths of Ikere-Ekiti local government area of Ekiti state. Data were collected using questionnaires and analysed using descriptive statistics which are percentages, mean scores and frequencies. Findings of the socioeconomic characteristics reveal that 55% of the respondents are males, 63% of them are unemployed, and their mean age is 24. Their educational background has the highest percentages of 33 and 35 for polytechnic and university youths respectively. About 63.4% of the respondents use android phones to access the internet. It further reveals that Facebook and WhatsApp have the highest level of usage with 99 and 89 respectively. For social media misuse the statement '*I circulate/share any still video/ images through SMSs/emails and social networking profiles which is not mine*' has a mean of 3.09 indicating that youths circulate copyrighted or unclaimed pictures and social networking profiles without acknowledging the owner. The study concluded that there might be decreased face-to-face communication with their immediate family and rural community, furthermore, the youths are neither aware of privacy issues, including copyright infringement and plagiarism issues concerning online materials.
Keywords: Rural, Youths, social media, use, misuse

INTRODUCTION

Today, the use of social media has become an essential daily activity, it is principally used for social interaction and access to news and information, and decision making. It is a treasured communication tool with others locally and worldwide. Social media as defined by the Merriam-Webster dictionary is a form of electronic communication through which users can create online profiles and network within online communities to share content including photographs, videos, music, ideas, documents and personal messages. This phenomenon has revolutionized the way people communicate and share information and human skills.

Social media has created an enormous opportunity for people of all ages including rural youths in Ikere Ekiti to contribute and accumulate information. Youths nowadays make a living from it, examples are Tiktok, YouTube and Facebook and some youths can search for jobs from sites like LinkedIn while seminars and lectures can be attended through networking sites like Zoom and Skype. It is not about youths leaving the rural areas for the city in search of white-collar jobs, but the youths getting themselves busy at any slightest opportunity and by so doing creating jobs and making extra income other than what they and their parents make from agricultural activities.

At the same time, it also needs to be understood that millions of internet users are unaware of cyber safety and security essentials etiquette and proper forums for reporting crimes (Umarhathab *et al*., 2009). Likewise, some security and intelligence agencies have indicated that social media platforms can aid in solving crimes within their jurisdiction (Edosomwan *et al*., 2011). However, one of the factors popularizing social media platforms is how they connect people worldwide to interact, share content and engage in discussions of mutual interest that know no geographical boundaries.

On the other hand, young people essentially are interested in establishing their profiles, pushing their ideological beliefs, and sharing assorted content for diverse intents and purposes (Edosomwan *et al*., 2011). One principally main concern is whether access to the Internet would decrease the involvement of youth in their home communities since youth and issues of talent retention are crucial to the long-term viability of rural societies. This paper will be discussing the issues related to social media use and abuse.

The above raises the following research questions to which this paper intends to find answers to:
i. Describe the socioeconomic characteristics of the youths
ii. Ascertain their frequency of social media usage
iii. Ascertain their internet misuse

The objectives of the study are as follows:
i. What are the socioeconomic characteristics of the youths?

ii. What is their frequency of social media usage?

iii. What is the level of internet misuse by youths?

METHODOLOGY

The study was conducted in Ikere Ekiti local government area of Ekiti state. A three-stage sampling procedure was employed to select respondents for this study. The first stage involved the simple random selection of two out of the three districts area in the Local Government Area. The selected districts were Odo Oja and Uro quarters. The second stage involved the simple random selection of two villages among the selected districts. The selected villages for Odo Oja district were Moshood and Odo Ise; while Atiba and Owalemisioro were selected from the Uro quarters district. The third stage involved the simple random selection of 25 youths in each of the selected villages, given a sample size of 100 respondents.

Data were collected using questionnaire; and analysed using descriptive statistics (Percentages, mean scores and frequencies).

RESULTS AND DISCUSSIONS

The study reveals that 55% of the respondents are males, and 63% of them are unemployed which implies that a large percentage of the respondents are still dependents, their mean age is 24 which suggests that most of the respondents are active young adults. The educational background has the highest percentages of 33 and 35 for polytechnic and university youths respectively. About 63.4% of the respondents use android phones when accessing the internet, it is obvious that mobile phones are the most popular devices for accessing the internet. Interestingly the overriding objective of the National Telecommunications policy is to achieve the modernization and rapid expansion of the telecommunications network and services. This will in turn improve national economic and social growth and integrate Nigeria internally as well as into the global telecommunications environment. At the same time, cyber cafes remain popular for accessing the internet in these areas, even though not as much as the mobile phone internet option.

Table 1: Socioeconomic characteristics

	Frequency	Percent
Sex		
Male	55	55
Female	45	45
Employment status		
Employed	37	37
Unemployed	63	63
Age of Respondents		
Mean age	24	
Educational background		
Informal	5	5
Primary	4	4
Secondary	21	21
Polytechnic	33	33
University	35	35
Postgraduate	2	2
Tools used in accessing the internet**		
Laptop	27	22
Android	78	63.4
Ipad	8	6.5
Small phone	10	8.1

Note: **Multiple responses

The study revealed that Facebook and WhatsApp have the highest level of usage. Facebook has 99 users; people use it basically to fulfil two basic needs: the need to belong and the need for self-presentation. WhatsApp has a frequency of 89 respondents using their social network, it has this large frequency probably because it allows them to send unlimited texts, pictures, and videos to their friends and family members without any cost other than their internet

data plan that they already use in their smartphones, the WhatsApp application is so easy to use after downloading. Google has 84 users, it provides youth with limitless opportunities to explore varieties of topics and gives them equal advantages to access the information. Email has 87 users subsequently the education edition of google Apps is equipped with all necessary tools for communication, documentation and learning. Google App for education includes Gmail,

calendar, contacts, drive etc. therefore google users are also likely to use email.

Table 2: Frequency of social media usage

Tools	Frequency of usage	Frequency of non-usage
Skype	14	86
Facebook	99	1
Twitter	42	58
LinkedIn	14	86
Instagram	56	44
WhatsApp	89	11
Telegram	34	66
Google	84	16
E-mail	87	13
YouTube	68	32
Zoom	17	83
TikTok	47	53

The youths were asked if they *open friends/unknown people's mail without their consent*, the mean is 1.56 which means that majority of the respondents never open friends/ unknown people's mail without their consent. They were asked about their habit of watching/downloading movies/music albums from unauthorized sources primarily to know their awareness about the concept of intellectual property over these entertainment materials and the infringement of the same. It was realized that a mean of 1.87 of the respondents watch/download movies from the internet. Was gotten. For the statement, *I circulate/share any still video/ images through SMSs/emails and social networking profiles which is not mine* the mean is 3.09 It can be seen that some youths circulate copyrighted or unclaimed pictures and social networking profiles and such pictures may be viral in the internet due to this image circulation habit of the youth. This may give rise to communal or racial riot(s), and this may also destroy the reputation of a particular personality if such images involve any activity of the said person or anything related to him/her. For the fourth statement *usage of content or material without citing the source* has a mean of 2.06 indicating that the majority of the respondents almost never cite the source of content or material they use resulting in plagiarism. This may be common with the students of higher learning who seek references from online reading materials for their assignments or regular examinations, it can be seen that the majority of the students did not learn to acknowledge the proper sources of the references resulting in academic crimes like plagiarism. For the fifth statement, I share my password with family and friends, with a mean of 2.27 means the majority of the respondents almost never share their password with family and friends.

Table 3: Social media abuse/misuse

Statements	Number of respondents	Mean
I open friends/unknown people's mail without their consent	100	1.56
Watching/downloading/movies/music from unauthorized sources	100	1.87
circulate/share any still/video images through SMSs/emails and social networking profiles which is not mine	100	3.09
Usage of content/materials without citing the source	100	2.06
I share my password with friends and family	100	2.27

CONCLUSION

While the respondents use WhatsApp and Facebook platforms regularly, there might be decreased face-to-face communication with their immediate family and rural community since they have online families, thereby being detached from their immediate environment. Youths who spend two or more hours on social media each day are more likely to report more psychological distress. Positive usage of the internet and awareness about cybercrime issues is less among these youths.

RECOMMENDATION

Rural community leaders seeking to keep the liveliness of their hometowns would do well to consider using online social networking sites to augment the involvement that youth have in their home communities.

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REGIONAL DISPARITY OF LOW IMMUNIZATION AT BIRTH AMONG UNDER-FIVE CHILDREN IN NIGERIA

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ABSTRACT
The practice of basic immunization at birth is vital precaution to ensure early protection of child against diseases and death. There is regional variation of birth immunization in Nigeria which against the SDG goals channel towards achieve universal health coverage and eradication of communicable and non-communicable diseases. This study aimed to examine the regional disparity and determinants of low immunization at birth in Nigeria. The study used child's recode dataset from Nigeria Demographic and Health Survey (NDHS, 2018), sample of 3,640 children of women in reproductive age was considered as the sample size. The outcome variable is social group immunization based on if child do not received dose of HBV, OPV and BCG at birth. A two level Multilevel logistic regression models was built with individuals (level 1) nested with in communities (level 2) to investigate the significant relationship. The result shows a significant variation of low birth immunization in North-Central, North-East, North-West and South-West with highest proportion in Benue State (25.9%), Yobe State (27.6%), Kaduna State (28.2%) and Oyo State (49.9%) respectively. The overall Model reported a Rho of 25% (P<0.001; CI=0.19-0.32) in Nigeria, 38% (P<0.001; CI=0.24-0.54) in North-East, 28% (P<0.001; CI=0.17-0.41) and 28% (P<0.05; CI=0.08-0.64) in South-East which implies the percentage of variance in low birth immunization explained by the community in which women live. The individual and community base interventions needed to eliminate low birth immunization should consider place of delivery, number of antenatal visits, religion, education, household decision making and exposure to mass media.
Keywords: low Immunization, Regional disparity, Under-Five Children, and Health facility.

INTRODUCTION

One of public health's most successful strategies of managing and eradicating dangerous and often fatal diseases is immunization at birth, which has proven to be one of the most efficient preventive measures (Masters *et al*., 2019). At birth, all African children are required to get vaccinated against polio, hepatitis B, and the bacteria Bacillus Calmette Guerin (BCG). Some African nations continue to have dismal rates, like Nigeria (31% in 2018), Ethiopia (43% in 2019), Uganda (55% in 2016), and Ghana (57% in 2014) (Agboola *et al*., 2015; Galadima *et al*., 2021). National standards advocate giving these vaccines to a newborn within 24 hours and up to 14 days post-delivery; however, BCG can be administered up until 12 months of age (Ibraheem *et al*., 2019). Children from the lowest socioeconomic quintiles, those with no formal education, and those living in rural areas are disproportionately affected by the persistent regional and national gaps in Nigeria's vaccination coverage.

Vaccine antigens provide the greatest protection against vaccine-preventable diseases when they are given at the appropriate time, thus it's crucial that children get their shots on time (Ibraheem *et al*., 2019). Similar research into childhood immunization has been conducted in Ethiopia. The goal of this study was to examine the causes of incomplete vaccination in Ethiopian children (Abadura *et al*., 2015). Despite Nigeria's low rate of childhood immunization, no recent research has focused on defining the complex factors that influence prenatal vaccination.

The broad objective of the study is to investegate the regional disparity of low immunization at birth in Nigeria. This study address the following specific objectives to:

1 examine the prevalence of low immunization at birth across region in Nigeria
2 ascertain the individual mother's attributes associated with low immunization at birth across region in Nigeria.
3 determine community factors associated with immunization at birth across region in Nigeria.

METHODOLOGY

The outcome variable was low immunization at birth based on if child do not received dose of HBV, Polio (OPV) and Bacillus Calmette–Guérin (BCG) at birth. Vaccination rates among infants younger than 24 months were our primary concern. Children's immunization records, such as vaccination cards or registries, had to be checked. Studies that relied on the memory of the caregivers to determine whether a child had received vaccinations were disregarded. Children older than 24 months were not considered.

Among the individual factors considered in the study were the mother's age, degree of education, wealth index, marital status, occupation, sex of kid, and birth order. Additional factors include maternal age, prenatal care, the mother's health, and the environment in which the baby is born. Some contextual variables were taken directly from the data, while others were created

from individual-level variables based on the available evidence from the literature (Adedokun *et al.*, 2017). Community characteristics such as (a) fertility norm, (b) family planning knowledge, (c) education level, and (d) poverty status were taken into account as contextual variables.

This study analysed the health of children in Nigeria using secondary data from the 2018 Nigeria Demographic and Health Survey. Descriptive analysis was performed using STATA 16.0, and results were displayed graphically, detailing the ranges throughout which independent and dependent variables were spread. Charts and percentages were used to depict the breakdowns. This hierarchical structure was accounted for using the multilevel technique, which also provides an estimate of the random effects at the cluster level to represent the influence of unseen or unmeasured community variables. Odds Ratio (OR) and 95% confidence intervals are commonly used to describe the impact of individual-level variables. The ICC and the proportional change in variance were used to symbolize random influences.

RESULTS AND DISCUSSION

The chart below shown the distribution of birth immunization by state. It was revealed that within the southern region of Nigeria Oyo state have the highest prevalence of low birth immunization (49.9%), followed by Delta state (38.9%), Anambra state (27.6%). Similarly, result from Northern region revealed that Bauchi state have the highest prevalence (34%), followed by Kaduna state and Benue state (28.2% and 25.9% respectively).
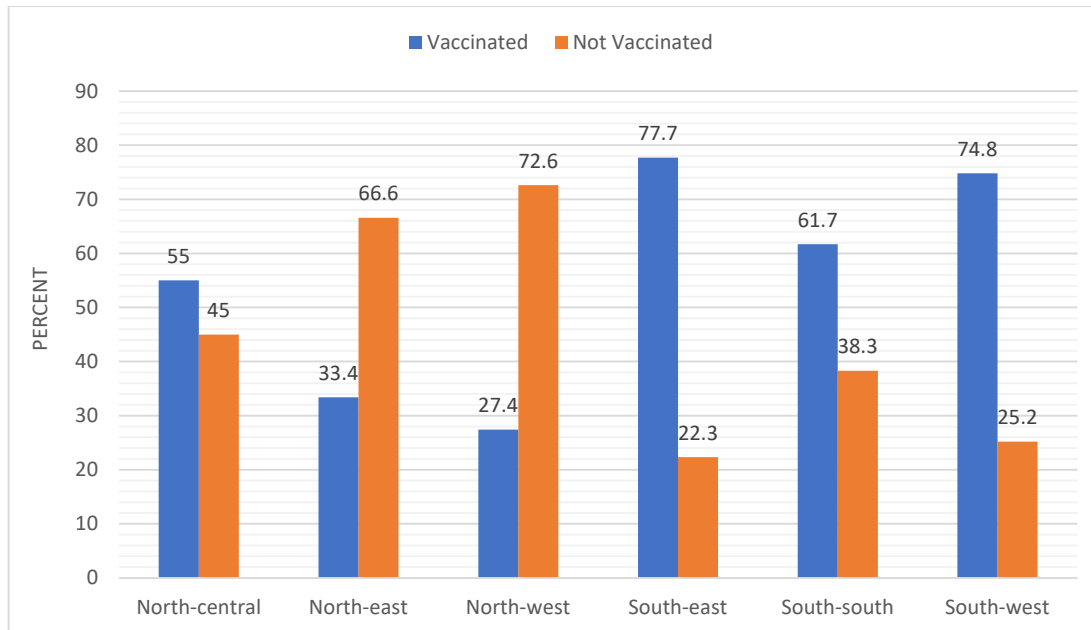
Figure 1: Regional Differential of Birth Immunization
Source: Author Construct, 2022 (NDHS 2018)

The chart above revealed the regional distribution of birth immunization. North-east and North-west have the highest prevalence of birth immunization by 66.6% and 72.6% respectively, followed by North-central (45%) and least region to experience low birth immunization were South-west and South-east (25.2% and 22.3% respectively).
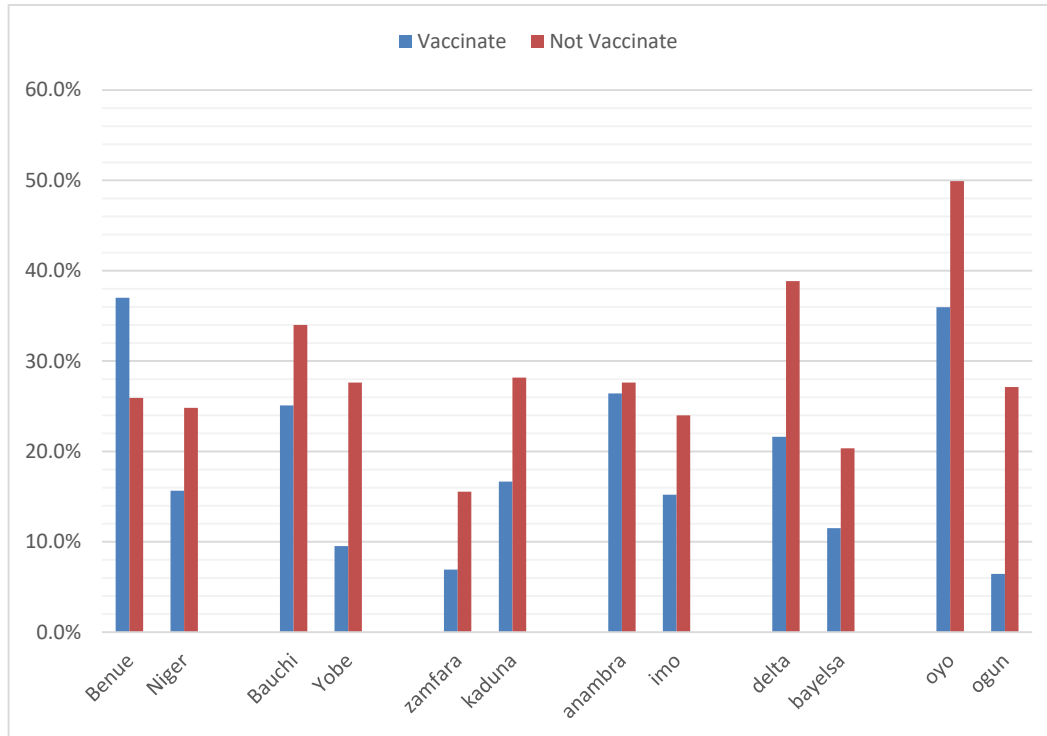
Figure 2: Distribution of Birth Immunization by State

Distribution by multi-level logistic regression of regional predictors of low birth immunization in Nigeria

The results of multilevel models fitted to investigate the relationship between individual and contextual factors affecting low birth immunization across region in Nigeria. Model 1 revealed the overall predictors of low birth immunization whereby Model 2 to Model 7 revealed the regional differential of this interrelated predictors at P-value less than 0.05. Birth delivery at public health facility tends to reduce the likelihood for child not given birth vaccination (OR=0.41, CI=0.32-0.53), this was distributed across region whereby those living within North-central, North-east, North-west and South-south were 64%, 73%, 54%, 96% less likely to experience no birth vaccination compared to those having birth delivery at Home (RC). Those that had birth delivery at private health facility were 49% less likely to experience no birth vaccination in Nigeria which is well pronounced only in North-central (OR=0.47, CI=0.25-0.87) compared to those having birth delivery at Home (RC).

Women that attended 1-3 ANC visit, 4-7 ANC visit and 8 ANC visit were 65%, 84% and 87% less likely not to vaccinate child at birth compare those that do not had any visit (RC), this follows the same pattern across Northern region i.e., North-central (57%, 78%, 83% respectively), North-east (64%, 88%, 89% respectively) and North-west (74%, 89%, 93% respectively). For those in Southern region it shows that women attending 4-7 ANC visit and 8 visit above in South-east (83%, 82% respectively), South-south (96%, 83% respectively) and South-west (81%, 92 respectively).

Majority of those having 4th-5th births and 6th births above were more likely not to vaccinate child at birth than those having their first birth, this is more pronounced in North-east where those having 4th-5th births were 7.10 times more likely not to vaccinate child at birth than those having their first birth (RC).

The older the age of women the less likelihood they did not vaccinate child at birth in North-central and North-east of Nigeria, those reported at age 20-24 years (67% and 85% respectively), 25-29 years (77% and 86% respectively), 30-34 years (83% and 92% respectively) and 35 years above (87% and 80% respectively) were less likely not to vaccinate child at birth compare to those reported at age 15-19 years (RC). This is in agreement with previous studies by Adedokun *et al*., (2017) stated that older women have a greater chance of having their children immunized. The lack of childcare experience among the young mothers may be to blame for this situation. Caring for ill children is a drain on the time and resources of older mothers, who have been there. These mothers would support any effort that reduced the risk of childhood sickness.

Those with higher education were 57% less likely not to vaccinate child at birth compared to those with no formal education (RC). Women with secondary education in Nigeria were 36% less likely not to vaccinate child at birth compared to those with no formal education (RC), in South-south women with secondary education were 95% less likely no to vaccinate child at birth compared to women with no formal education (RC). Study by Ophori *et al*., (2014) found that mothers' post-secondary education level was a significant factor of their timely presentation for birth dosage vaccination, lending credence to the assertion that educated women are more likely to prioritize their children's health. Researchers in other investigations had also shown this to be the case.

CONCLUSION AND RECOMMENDATION

After accounting for differences at the individual and community levels, there is still a sizable amount of variation at the community level, suggesting that there is room for more investigation into these aspects. Hence, the individual and community base interventions needed to eliminate low birth immunization should consider place of delivery, number of antenatal visits, religion, education, household decision making and exposure to mass media which is an indicative of a need for further research on community level factors.

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PRIMARY HEALTH CARE SYSTEM IN NIGERIA: A CONCEPTUAL DIFFERENCE IN AUTHOR'S AFFILIATION

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ABSTRACT

Globally, the assessment of health research to understand different content and gaps will support the effectiveness and attainment of sustainable development goals in 2023. This study investigates the status of Nigeria primary health care through conceptual difference in author's affiliation using a bibliometric analysis. The study used publication data from PubMed database from 2015 to 2022 on Nigeria Primary Health Care OR Nigeria PHC, a total of 309 observations were generated for the first authorship articles using R programming software. Incomplete articles were dropped, and 296 articles were used for this study. At the multivariate level a structural topic model was used to build and estimate the significant effect of topics, topic correlation and variability of topic relationship by authors affiliation (foreign or national authors). The result revealed that 59.2% of authors are Nigeria based, followed by United State of America (11%), United Kingdom (6.5%) and others. The highest journal publishers are PloS One and BMC Health Services Research. From the topic variability, research on disease prevention, quality health care, immunization and implementation of health care practices are mostly pioneered by foreign authors whereas research on service/programmes, consequences, workers' knowledge and locality are from national based authors. This study recommended the needs for national based organisations to pioneer research centred at implementation of health care practices on immunization and disease prevention for quality health care in Nigeria.

Keywords: Primary Health Care, Sustainable Development, PubMed and Author's Affiliation

INTRODUCTION

In a world where disease burdens are increasing and changing while at the same time health budgets are being cut, it is crucial to find effective approaches to developing and implementing evidence-based health services. This is the foundation for the target of Universal Health Coverage that is part of the Sustainable Health Goals (Walley *et al.*, 2018). The Alma Ata Declaration of 1978, which was drafted in the city of Alma Ata, the capital of the Soviet Republic of Kazakhstan, which was located in the Asian region of the Soviet Union, expressed the need for immediate action to be taken by all governments, all health and development workers, and the international community in order to protect and promote the health of all of the people of the world. (World Health Organisation, 1978).

The availability of sufficient infrastructure, diagnostic medical equipment, pharmaceuticals, and medical professionals who are adequately trained is necessary for the efficient delivery of healthcare services. In Nigeria, the delivery of healthcare services is frequently characterized by low funding and mismanagement, which has a negative impact on both the coverage and quality of healthcare services (Oyekale, 2017). There have been numerous research on Nigeria primary health care system (Abdulraheem, Olapipo, and Amodu, 2012; Aregbeshola, 2016; Ephraim-Emmanuel, Adigwe, Oyeghe, and Ogaji, 2018; Gyuse, Ayuk, and Okeke, 2018) but only few investegate the performance of Nigeria health care system. (Oyekale, 2017b) examine the assessment of of Primary Health Care (PHC) facilities service readiness in Nigeria with focus on availability of some essential drugs and medical equipment. Predominance of Bibliometric subjects could be attributed to a marked interest in conducting studies related to educational and bibliometric aspects to assess the current state of research in order to draw relevant policies from it (Corrales, Reyes, and Fornaris, 2016). This study investigates the bibliometric of primary health care a conceptual review of authors affiliation. This study addresses the following specific objectives to:

i) examine the top journal of affiliation on Nigeria primary health care system between year 2015-2022
ii) ascertain the top 10 topics on primary health care system between years 2015-2022 in Nigeria.
iii) determine the topic differential between foreign and Nigeria/Home-base author's publication on primary health care system.

METHODOLOGY

The study review literature from PubMed database "https://www.ncbi.nlm.nih.gov/pubmed/" (National Network of Libraries of Medicine, 2004). A search was carried out in R programming application (version 4.2.0). using easyPubMed package to fetch first author journals from PubMed database with search queries as follows: ((Nigeria PHC*[TIAB]) OR Nigeria primary health care [TIAB])) AND (("2015"[PDAT]: "2022"[PDAT])). Using the above search strategy, a total of 309 primary health care literature on Nigeria published between 2015 and 2022 were retrieved and Thirteen articles were not accessible. A total of 296

articles were eventually used for the citation analysis that includes "pmid", "doi", "title", "abstract", "year", "month", "day", "jabbrv", "journal", "keywords", "lastname", "firstname", "address" and "email". Data was transformed into PubMed data-frame and irrelevant stop words (such as "the", "and", "bot", "for", "is", etc.) and alphanumeric characters ([^0-9A-Za-z///']) were removed from the title and address. Furthermore, other variable needed includes countries extracted from the addresses, concatenating firstname and lastname columns to generate author's name.

The descriptive analysis investigates the most frequent word from the title, authors' country of affiliation, top journals of publication, top author's name and top authors by country of affiliation. A structural topic model (STM) was adopted at the multivariate level on the meta data to improve the assignment of words by authors affiliation to latent topics in the corpus data (Roberts, Stewart, and Tingley, 2019).

RESULTS AND DISCUSSION

The figure 1 revealed the highest prevailed key words from the 309 articles search from PubMed. It shows that the Nigeria primary health care is the major theme of interest having the largest width, followed by workers, rural area, facilities and service. Other key content related to primary health care include prevention, utilisation, management, control and others.

Figure 1: Description of publication by title

The result from figure 2 revealed the top ten journals publisher on Nigeria primary health care. PLoS One journal and BMC Health Service Research published the highest articles of 23 journals each, followed by Pan African Medical Journal with 22 journals, followed by Health Policy Plan by 12 journals and the least were Annals of African Medicine and African Journal of Primary Health and Family Medicine by 4 journals each.

Figure 2: Top journals of publication

Figure 3 revealed the distribution by meta topic visualization from title of journals. It was shown that topic 7 have the highest proportion that centred on workers knowledge of primary health care, followed by topic 6 relevant to maternal health, topic 10 centred on quality of health care, topic 2 was based on implementation of health care system, topic 5 was based on effect of primary health care, topic 3 was based on the locality where the primary health care was located, topic 8 was centred on immunization, topic 1 was centred on disease prevention, topic 9 was related to primary health care service and program and topic 4 was based on primary health care in rural areas.

Top Topics
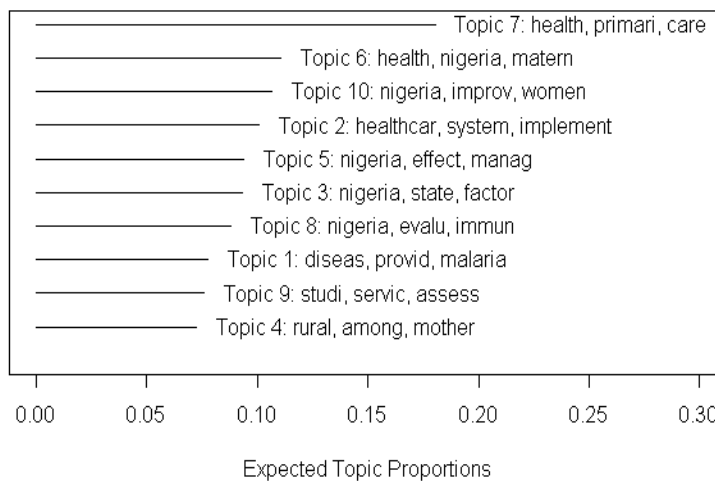
Figure 3: Metadata topic visualization

Estimate of model prevalence by authors affiliation

The result from the structural topic model (Stm) revealed shown that the highest proportion of

topic model centred on workers knowledge of primary health care, followed by maternal health, quality of health care, implementation of health care system, effect of primary health care, locality where the primary health care was located, immunization, disease prevention, primary health care service/program and primary health care in rural areas.

Majority of journals centred on disease prevention and quality of health care were foreign based authors. This can be attributed to pace of development of quality health care services in Nigeria that remains quite unsatisfactory. Ephraim-Emmanuel, Adigwe, Oyeghe, and Ogaji, (2018) asserted that Nigeria a country with a large population that has a ranking of 187 out of 200 on the list of countries with the best health care systems in the world still has inadequate or non-existent health care standards and accreditation systems, low-quality health care services, inequitable distribution, and insufficient health care service delivery.

Scientific research by authors on locality of primary health care and service/program provided were Home base authors. Similarly, research based on effect of primary health care and workers knowledge shown that most of the authors were from Nigeria. Lastly, research findings on immunization and implementation were from foreign base researcher. Pantoja *et al*., (2017) stated that healthcare systems are tasked with the daunting task of enhancing the quality and safety of the services they provide to boost patient outcomes. However, they often don't employ the best evidence to support decisions on the implementation of specific healthcare initiatives, leading to inferior outcomes and inefficiency. Health and health behavior results for patients, healthcare professional outcomes (such as sick leave), healthcare system outcomes (such as resource utilisation), and societal outcomes are all influenced by implementation tactics.

CONCLUSION AND RECOMMENDATION

The findings revealed that Nigeria health base research mostly centred on locality, service/program, effect and workers knowledge. In contrary, Nigeria still lacks within the four-core area in terms of academic research on primary health care system which include disease prevention, quality health care, immunization and program implementation. This study recommended that government must be responsive to windows of funding for scale-up health research on disease prevention, quality health care, immunization and program implementation. There is needs for acquisition of advance knowledge centred on health program implementation and management for improving evidence base policy.

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DAMAGES CAUSED BY HERDERS –FARMERS CONFLICTS AND COPING STRATEGIES IN OSUN STATE NIGERIA

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ABSTRACT

This study examined the extent of damage caused by farmers and herders' conflicts in Nigeria. A multistage sampling procedure was used to select 120 farmers. The data were collected using a well-structured questionnaire and were analysed using descriptive statistics (percentage and frequency and mean). The specific objective includes to describe the socioeconomic characteristics of the arable crop farmers in the study area: examine the levels of damaged and coping strategies. The findings shows that majority were male (75%) with cultivated land between 1 -5Ha The result revealed various levels of damage caused to food security by the farmers/ herders conflict as follows: Growing crops damage (79.2%): Pollution of water points (54.2%) Indiscriminate bush burning leading to fire outbreak in farm (72.5%) Stealing of farm products (73.3^%) Killing and maiming of farmer (12.5%) Soil erosion (49.2%) Overgrazing of fallow land (70.0%) Land degradation (63.3%) , Kidnapping of farmers (5.0%), Sexual harassment of women 6.7 and others The result further revealed the coping strategies used by crop farmers: Multiple farm plots (64.2) Relocate farm (39.2%) Increase farm (54.2%) Appeasement (44.2%) Supplementary occupation(s) engage in off farm activities (29.2%) Sleeping on farms (14.2%) Using charms (6.7%) and others Therefore, it is recommended that the government should formulate a policy that will give crop farmers maximum security, stimulate peace among crop farmers and pastoralist to sustain food security and reduce poverty among rural dwellers, thereby transforming the rural environment into an attractive centre..

Keywords: Conflicts, Farmers, Herders, Food security, Damages Coping strategies,

INTRODUCTION

Nigeria has encountered and still encountering clashes of grave extents among several ethnic and non-secular communities across the states. These clashes fluctuate in mensuration, method and the teams concerned. it absolutely was discovered by Momale (2003) that, whereas many clashes emerged between identical resource user cluster like between one farming community and another, happens between varied user teams like between herders and farmers or between foresters and farmers. Adisa (2012) discovered that the farmers and herdsmen clashes has remained the foremost dominating resources use clashes in Federal Republic of Nigeria.

According to Abbas (2009) a study of the most important supply of clashes between the Fulani pastoralists (to be used interchangeably with "herders" or "herdsmen") and farmers shows that land connected problems, particularly on grazing fields, account for the best share of the clashes. In different words, try over the management of economically viable lands creates a lot of tension and violent clashes among communities.

Social and economic parts carry on inciting fierce clashes among the Fulani pastoralists and farmers. The depth and variations of the clashes for the most part depend upon the natural and sort of the user teams wherever the pastoralists graze. These clashes have recognized serious hazard on the survival and livelihoods of each the farmers and the pastoralists and what each team's area unit doggedly protective. The clashes (though provocative) over access rights to farmland and cows tracks (labi) have emotional toward turning

into present and seems to own challenged solutions (Abbas, 2009).Notwithstanding, Coser (2000) has noted that, the urgency of clashes within the claim of scarce resources is treated here because the scourge of conflict over the incalculable worth for land and its resources, with the allegation of possession and allegation for its position as a typical resources. However, the difficult land use system that has modified notably overtime has culminated within the current tension and clashes between the Fulani herdsmen and also the host communities.

In recent years, there have been several clashes between farmers and Fulani herdsmen throughout Nigeria which have cumulated into violent clashes and loss of lives and properties. This came to a serious head in Osun State, some Fulani herdsmen have stormed the Osun State Government Farm Settlement and burnt down about 120 acres of plantain, oil palm trees, cassava, mango trees and other economic trees planted there by farmers on farms at night on January 29, 2018.

Also, farmers alleged that herders have been destroying their farms with their cattle, raped women in the area and have attacked and killed farmers in the area resulting in the killing of twenty farmers. This study is therefore seeking to examine the underlying destructive activities of nomads on crop farmers, the coping strategies adopted by the crop farmers against the nomad's activities and to know extent to which the crop farmers experience those damages by carrying out a case study in the area. The study therefore provided answers to the following questions:

1   What are the socioeconomic characteristics of arable crop farmers in Odo-otin Local Government Osun State?
2   What are the destructive activities of nomads on arable crop farmers-herders?
3   What are the coping strategies adopted by the arable crop farmers in the study area?

Therefore, the main objective of this study was to assess the extent of damages caused by the conflict and the coping strategies of arable crop farmers to herdsmen activities in Odo-Otin Local Government Osun State Nigeria

1   To describe the socioeconomic characteristics of the arable crop farmers in the study area.
2   To describe the destructive activities of nomads on arable crop farmers.
3   To know the coping strategies adopted by the arable crop farmers in the study area.

METHODOLOGY
Study area
This study was carried out in Osun State, Southwest, Nigeria. The State is situated in the tropical rain forest zone. It covers an area of approximately 14,875 km2 and lies between latitude 7°30′0″N and longitude 4°30′0″E.

The research method used was of a descriptive survey design type. A multi-stage random sampling procedure was used to collect the data. The target population was the arable crop farmers. The first procedural stage was the selection of Odo Otin Local Government Area. Six rural communities were randomly selected at the second stage The third stage was a simple random selection of 20 farmers from each of the six communities making a sample size of 120.

The data collected (socioeconomic characteristics, damage by the nomads and the level of coping strategies were recorded) using well-structured questionnaires were analysed using descriptive statistics such as percentage, mean and frequency counts, while inferential statistics were used to test the hypothesis via a Chi-square test.

RESULT AND DISCUSSION
Socioeconomic characteristics
The results revealed that the majority (75%) of the respondents were male, with the highest age range between 30 and 49 (55.1%), while the mean age was 39 years The implication of this is that the majority of the respondents are of a young age, active and productive, and this may have a positive effect on the use of coping strategies to defend their community against the unlawful entrance on their agricultural land. Moreover, agricultural operation such as growing of arable crops like cassava, cowpea, rice, sweet potatoes, maize, yam, millet and others require physical strength engagement of males in land preparation, planting weeding, harvesting and processing. This corroborates the finding of Adisa (2012) who discovered that most of the arable farmers in Kwara State are male but contradicts the finding of Agbamu (2014) who reported that cassava farmers in Delta State are mainly women, as about 60% of them were females.

The average farm size was 3.2 hectares, and most the respondents' own farms between 1 and 5 ha (86.6%).

Activities of nomads - The result revealed various levels of damage caused to food security by the farmers/ herders conflict as follows: Growing crops damage (79.2%): Pollution of water points (54.2%) Indiscriminate bush burning leading to fire outbreak in farm (72.5%) Stealing of farm products (73.3^%) Killing and maiming of farmer (12.5%) Soil erosion (49.2%) Overgrazing of fallow land (70.0%) Land degradation (63.3%) , Kidnapping of farmers (5.0%), Sexual harassment of women 6.7 and others

Coping strategies used by farmers - The result revealed the coping strategies used by crop farmers: Multiple farm plots (64.2), relocate farm (39.2%), increase farm (54.2%), appeasement (44.2%), supplementary occupation(s), engage in off farm activities (29.2%), sleeping on farms (14.2%), using charms (6.7%), and others (Table1).

Table 1: Showing coping strategies used by farmers against herdsman attack

Coping strategies	Percentage used (%)
Using charms	6.7
Going to farm in groups	58.3
Shifting to another job	7.55
Planting of toxic plant	18.3
Cultivating small area of land	24.2
Early planting	69.2
Avoid planting in dry season	25.8
Avoid planting swamp rice	20.8
Avoid planting along river borders	18.3
Selling farms	6.7
Preparing for the worst	20.0
Praying for peace	73.3

Coping strategies	Percentage used (%)
Early harvesting	70.0
Multiple farm plots	64.2
Relocate farm	39.2
Increase farm	54.2
Appeasement	44.2
Sleeping on farms	14.2
Insurance policy	3.3
Police	32.5

Source: Field survey, 2018

CONCLUSIONS

Based on the analysis of the data and the findings, the following conclusions were drawn: farmers were traumatized and this has caused a set back to the economy, and hence achieving the sustainable development goal of zero hunger by 2030 will be a mirage if nothing is done about the re-occurrence of this unfortunate incident of frequent clashes Therefore, it is recommended that the government should formulate a policy that will stimulate peace among crop farmers and nomads to sustain food security and reduce poverty among rural dwellers, thereby transforming the rural environment into an attractive centre. Moreover, the government should ensure extension agents are always available to enlighten the farmers on how to cope with the activities of nomads on their farms, through farm insurance and a cooperative group society. Furthermore, the government should provide a grazing area for nomad activities and formulate policy for peace. Finally, the government should compensate the arable crop farmers who are victims of the incident and command the nomad to move to their restricted area of grazing. Acknowledgments: The researchers of this study wish to appreciate the Management of Landmark University for Sponsorship of this publication. Conflict of interest: The authors declare no conflict of interest.

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EXPOSURE TO "*DADA ONIPAKI*" VIDEO AND FARMERS' WILLINGNESS TO ADOPT THE VITAMIN A-FORTIFIED CASSAVA IN OYO STATE

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ABSTRACT

Vitamin A fortified cassava (VaFC) is one of the products of biofortification aimed at mitigating the effects of vitamin A deficiency in children and pregnant women. In order to promote the widespread of this innovation, entertainment education approach through the use of "*Dada onipaki*" video was deployed. This study evaluated the effects of exposure to *Dada onipaki* video on farmers' willingness to adopt vitamin A biofortified cassava (vAbc) in Oyo State, Nigeria. Using structured questionnaires, information was elicited from 187 respondents selected through a four-stage sampling procedure. Data were collected on respondents' change in knowledge, willingness to adopt vAbc and perceived constraints to adoption of vAbc. Knowledge of the perceived benefits of vAbc increased (from 52.9% to 71.7%) after exposure to the video. More respondents (84.5%) expressed willingness to adopt after exposure compared to 66.8% before exposure to the video. Lack of information on the processing of vitamin A cassava into other products($\overline{x} = 1.45$)was a serious perceived constraint to adopting vAbc. There were significant differences in the knowledge of the perceived benefits of vAbc (t=-6.687) as well as the willingness to adopt vAbc (t=-11.564) before and after exposure to the video. Exposing cassava farmers to *Dada onipaki* video increased their knowledge of the perceived benefits of vAbc and willingness to adopt it. Therefore, the use of entertainment education in promoting agricultural innovation is recommended to supplement extension work.

Keywords: Vitamin A cassava, Entertainment-Education, *Dada onipaki* video

INTRODUCTION

Vitamin A, a fat-soluble vitamin available in the following dietary forms; retinol, beta-carotene, and various other carotenoids, helps maintain good vision (necessary for night vision), resistance to infections and supports growth and repair of body tissues. It also maintains integrity of white and red blood cells, assists in immune reactions, and helps maintain the stability of cell membranes. Despite the wide range of food rich in vitamin A available for consumption, vitamin A deficiency remains a leading cause of preventable childhood blindness and increases the risk of death from common childhood illnesses such as diarrhea. This, according to WHO (2009) presents vitamin A deficiency (VAD) as a public health problem affecting 5.2 million pre-school age children and 9.8 million pregnant women, which corresponds to 0.9% and 7.8% of the population at risk of VAD, respectively. According to IITA (2012), deficiency in vitamin A has caused visual impairment and blindness in Nigeria. With regards to this, WHO initiated a periodic, high-dose vitamin A supplementation for children which were proven to be a low-cost intervention to reduce all-cause mortality by twelve to twenty-four per-cent. In an attempt to alleviate the consequences of vitamin A deficiency, a number of innovations were deployed among which was addition of palm oil during garri processing which changes the colour from white to yellow. Hahn (1988) justified this innovation as he reported that asides preventing the pulp from burning during roasting giving a light-yellow colour to the garri, it also contains substantial

quantities of vitamin A, which serves as a nutrient complement in the process of taking garri. Hahn (1988) further reported that yellow garri produced using this procedure is 10-30 percent more nutritious and more expensive than white garri. Although other sources of vitamin A are available in food items like carrot, sweet potatoes, cod liver oil, among -others. Despite all these available sources of vitamin A, there has not been adequate information to suggest a significant improvement in vitamin A deficiency symptoms and associated consequences in Nigeria. To further bridge this gap in vitamin A consumption, IITA developed a vitamin A biofortified cassava variety with the aim of making it available to the farmers through whom the larger Nigerian society will have access to improved intake of vitamin A. The pro-vitamin A carotenoid-biofortified cassava popularly known as yellow cassava is more nutritious than the popular white cassava. Interestingly, a joint report published by FAO/WHO in 2001, experts advised that fortification and supplementation should be seen as complementary to food-based strategies and not as a replacement. Although, food-based approaches usually take longer to implement but once established are truly sustainable. In essence, foods that naturally have nutrients embedded in them are more nutritious and healthier for consumption without leaving behind side effects in the body system. This can be assumed to be the strength of biofortification of cassava with vitamin A by IITA rather than going by other means. Examples of biofortification projects includes iron-biofortification of rice, beans, sweet potato, cassava

and legumes; zinc-biofortification of wheat, rice, beans, sweet potato and maize; pro-vitamin A carotenoid-biofortification of cassava (yellow cassava), sweet potatoes and maize, which have all recorded successes as reported by Andersson, Saltzman, Virk and Pfeiffer (2017).

As a way of ensuring the social marketing of the technology (vitamin A fortified cassava), IITA, in collaboration with Harvest Plus and Nollywood came up with the entertainment-education approach in the form of a video called "*Dada onipaki*". The movie was set out to achieve the cultivation, consumption in all forms and availability of vitamin A cassava to the public.

Entertainment-education (EE) is the process of purposely designing and implementing a media message to both entertain and educate, in order to increase the audience's knowledge about an educational issue, create favourable attitudes, shift social norms and change overt behaviour (Singhal and Rogers 2001). Entertainment-education hinges on how entertainment media such as music, drama, comics, soap operas, among others can be used in changing the status quo of a particular audience positively.

The successes recorded over time instigated the use of EE by Harvest plus in collaboration with Nollywood to produce a video in September 2014 titled "*Dada onipaki*". The video was centred around entertaining and informing cassava farmers on cultivation as well as consumers on consumption of vitamin A cassava which will consequently lead to an improvement in health status. The shooting of the movie cuts across all major languages in Nigeria and was titled thus: The Yellow Cassava (English), Ebiyebi (Ibo) and Sakani (Hausa). The movie was produced by Zeb Ejiro which lasted one hour fifteen minutes featured Nigeria's top actors – Segun Remi, Toyin Adewale, Olaide Almooruf, Adediwura Adeshega among others.

It is however worrisome that such an intervention is yet to be assessed based on achievement or otherwise of the objective. This lack of such empirical evidence on the impact of the video on the knowledge and willingness of cassava farmers to adopt the vitamin-A fortified cassava necessitated this study.

The main objective of the study was to assess the effects of exposure to "*Dada onipaki*" video and farmers' willingness to adopt the vitamin A fortified cassava in Oyo State, Nigeria. The specific objectives were to:

1. determine the personal characteristics of the cassava farmers.
2. examine the enterprise characteristics of the cassava farmers.
3. measure the knowledge level of cassava farmers before and after exposure to "*Dada onipaki*" video.
4. investigate the willingness of cassava farmers to adopt vitamin A fortified cassava.
5. determine the perceived constraints to adopt vitamin A fortified cassava.

The hypotheses of the study are as stated below:

$H_0 1$: There is no significant relationship between the cassava farmers' knowledge of vitamin A fortified cassava and change in willingness to adopt vitamin A fortified cassava.

$H_0 2$: There is no significant difference in the farmers' knowledge of vitamin A fortified cassava before and after exposure to "*Dada onipaki*" video.

$H_0 3$: There is no significant difference in farmers' willingness to adopt vitamin A fortified cassava before and after exposure to "*Dada onipaki*" video.

METHODOLOGY

Oyo state is one of the 36 states located in the south-west geopolitical zone of Nigeria having 33 Local Government Areas. Its people are divided into five broad divisions: Ibadan, Ibarapa, Oyo, Oke-Ogun, and Ogbomosho. A multistage sampling procedure was used for sample selection. At the first stage, Atiba and Ibarapa local government areas were purposively selected due to their predominance in cassava cultivation. The second stage involved a 30% random selection of the total zoned communities, giving one zoned community in Atiba local government and three in Ibarapa East local government area. Aremo was therefore sampled in Atiba local government area while Eruwa, Oke Otun and Itako were sampled in Ibarapa East local government area. An average number of registered farmers were generated in Atiba (650) while in Ibarapa East local government (560). At the third stage, ten percent (10%) of the average number of registered farmers was then generated giving 65 and 168 farmers in Atiba and Ibarapa East local government, respectively. This gives a total of 233 respondents. However, only 80 % (187) of the questionnaires were found useful for the study.

Knowledge gained after exposure to "*Dada onipaki*" video

A list of statements indicating the knowledge about vitamin A cassava before and after exposure was generated. The respondents were required to select from a list of objective options which had only one correct option.

Willingness to adopt vitamin A cassava

A list of willingness statements indicating the cassava farmers' level of willingness to adopt vitamin A cassava was generated and the level of agreement of the respondents to each was indicated willing and not willing.

Perceived constraints to adopt vitamin A fortified cassava

Respondents indicated the severity of constraints on a 3-point rating scale of 0, 1 and 2 for "not a constraint", "mild constraint" and "severe constraint".

RESULTS AND DISCUSSION
Personal characteristics

Table 1 shows that with a mean age of 46.7, the respondents were fairly old. This implies that the aging groups of people were more into cassava farming than the young and agile. This study is in line with the findings of Ogunsumi (2008) that farmers are growing older and are not succeeded by the younger generation who are on the lookout for greener pastures in cities and other professions.

Results further indicates that majority (67.4%) of the respondents were male. This implies that cassava production is tasking and requires physical tasks that women might not be able to cope with. However, this result is against the findings of Eze and Nwibo (2014) in Delta state that women participate more actively in cassava production than their men counterpart. A good number of the respondents 36.9% also had educational level of secondary education and above. This finding is in line with Jibowo (1980) who asserted that farmers with formal schooling adopt innovation than those without formal education.

With a mean household size of 6.9, it implies that most of the respondents had more than 6 members in their households to cater for. In Nigeria, large family size is not strange because it serves as labour for farm work.

Table 1: Distribution of respondents based on selected personal characteristics (n=187)

Variables	Frequency	Percent	Mean±SD
Age			
less or equal 30	21	11.2	
31-40	44	23.5	
41-50	60	32.1	46.7±11.91
51-60	38	20.3	
61-70	22	11.8	
>70	2	1.1	
Sex			
Male	126	67.4	
Female	60	32.1	
Highest educational level attained			
No formal education	54	28.9	
Primary	59	31.6	
Secondary	41	21.9	
OND/NCE	20	10.7	
HND/BSc/B.A	6	3.2	
Post-graduate	2	1.1	
Household size			
1-5	65	34.8	
6-10	105	56.1	6.95±3.52
11-15	13	7.0	
16-20	3	1.6	
> 20	1	5	

Source: Field survey, 2018

Enterprise characteristics

The mean years of farming experience was 16.9 while a good number (46%) of the respondents had farming experience of 11-20 years and only a few (8%) had farming experience above 30 years. This result supports the age distribution of the respondents earlier discussed. The result of this finding is in line with the findings of Buhari (2017). This translates to the fact that an experienced farmer will be able to discern the relative advantage of an improved variety over another. More than half of the respondents (67.4%)

cultivated on farm size of 10hectares and less. This explains the fact that a great number of the respondents cultivated small farmland. This result is in line with the findings of Amao, Adeagbo and Ogunjinmi (2013). Majority (48.7%) made use of manual labour. This is evident from the small sizes of farmland being cultivated. This signifies that they either hired labour or made use of family labour. However, this result is against the study carried out by Adeniyi (2016) about cassava farmers being largely into mechanized farming.

Table 2: Distribution of respondents based on enterprise characteristics

Variables	F	%	Mean±SD
Years of farming experience			
≤ 10	57	30.5	
11-20	86	46.0	
21-30	29	15.5	16.9±10.17
31-40	12	6.4	
>50	3	1.6	
Size of farmland			
≤10	126	67.4	
11-20	35	18.7	
21-30	20	10.7	9.86 ±9.11
> 40	2	1.1	
Type of labour used			
Manual	91	48.7	
Mechanized	37	19.8	

Source: Field survey, 2018

Distribution of respondents based on knowledge about vitamin A cassava before exposure to "*Dada onipaki*" video

Table 3 reveals that 65.8% of the respondents were knowledgeable about the cultivation of vitamin A cassava being the same process like the white cassava before exposure to the video. Similarly, an average number (55.1%) of the respondents knew that the high level of vitamin A in this variety will be maintained as it is cultivated year to year.

Table 3: Distribution of respondents based on knowledge about vitamin A cassava before exposure to "*Dada onipaki*" video

Statements	Correct		Incorrect	
	F	%	F	%
The body defect that vitamin A helps to correct	109	58.3	77	41.2
Deficiency in vitamin A also lowers the cardiac system leading to the inability to fight diseases	80	42.8	99	52.9
Vitamin A cassava is yellow in colour	117	62.6	68	36.4
The nutrient content in vitamin A cassava is the same in white cassava	73	39.0	110	58.8
Vitamin A cassava stem cuttings can be reused over time	56	29.9	127	67.9
Pap is a product of vitamin A cassava	118	63.1	67	35.8
Men and women highly are the target groups of vitamin A cassava	20	10.7	167	89.4
The high level of vitamin A in this variety will be maintained as it is cultivated year to year.	103	55.1	78	41.7
Cultivation of vitamin A cassava is the same process like the white cassava	123	65.8	64	34.2
Production of vitamin A cassava improves the standard of living of farmer	114	61.0	73	39.0

Source: Field survey, 2018

Distribution of respondents based on knowledge of vitamin A cassava after exposure to "*Dada onipaki*" video

Table 4 shows that almost all the respondents (97.9%) and (94.7%) had an increased knowledge after exposure to the video about the cultivation of vitamin A cassava being the same process like the white cassava and high level of vitamin A in this variety being maintained as it is cultivated year to year respectively. This means that the content of the video was adequate in disseminating information about cultivation of vitamin A cassava. However, low percentage (23.5%) of the respondents responded correctly about the target groups of vitamin A cassava. This translates to the fact that the content of the video did not adequately portray the target audience of the innovation as proposed. This is against the agenda set by IITA (2012) that vitamin A deficiency afflicts almost 20% of pregnant women and about 30% of children under-five in Nigeria which is the driving force behind Vitamin A cassava.

Table 4: Distribution of respondents based on knowledge of vitamin A cassava after exposure to "*Dada onipaki*"video

Statements	Correct		Incorrect	
	F	%	F	%
The body defect that vitamin A helps to correct	172	92.0	15	8
Deficiency in vitamin A also lowers the cardiac system leading to the inability to fight diseases	155	82.9	22	11.7
Vitamin A cassava is yellow in colour	173	92.5	11	5.9
The nutrient content in vitamin A cassava is the same in white cassava	130	69.5	51	27.3
Vitamin A cassava stem cuttings can be reused over time	97	51.9	84	44.9
Pap is a product of vitamin A cassava	173	92.5	10	5.4
Men and women highly are the target groups of vitamin A cassava	44	23.5	142	76
The high level of vitamin A in this variety will be maintained as it is cultivated year to year.	177	94.7	6	3.2
Cultivation of vitamin A cassava is the same process like the white cassava	183	97.9	4	2.1
Production of vitamin A cassava improves the standard of living of farmer	178	95.2	9	4.8

Source: Field survey, 2018

Distribution of respondents' willingness to adopt vitamin A cassava before exposure to "*Dada onipaki*" video

Table 5 indicates that about half (56.1%) of the respondents were willing to encourage their family and friends to consume vitamin A cassava and its products before exposure to the video. In addition, more than half (54%) of the respondents were willing to sell vitamin A cassava and its products. Majority (82.4%) of them were also not willing to fight against the cultivation of vitamin A cassava in their community before being exposed to the video.

Table 5: Distribution of respondents' willingness to adopt vitamin A cassava before exposure to "*Dada onipaki*" video

Statements	Willing		Not willing	
	F	%	F	%
Plant only vitamin A cassava	73	39.0	114	61.0
Consume vitamin A cassava and its products	91	48.7	96	51.3
Encourage my family and friends to consume vitamin A cassava and its products	105	56.1	82	43.9
Sell vitamin A cassava and its products	101	54.0	86	46.0
Encourage fellow farmers to cultivate vitamin A cassava	101	54.0	86	46.0
Discourage others from cultivating and consuming vitamin A cassava and its products	42	22.5	145	77.5
Fight against the cultivation of vitamin A cassava in my community	33	17.6	154	82.4

Source: Field survey, 2018

Distribution of respondents' willingness to adopt vitamin A cassava after exposure to "*Dada onipaki*" video

Majority (94.7%) were willing to encourage their family and friends to consume vitamin A cassava and its products after being exposed to the video. This signifies an increase in willingness after exposure to the video. Similarly, majority (91.4%) were willing to sell vitamin A cassava and its products. This signifies that the respondents are not only willing to cultivate vitamin A cassava, but also interested in the value chain process. In addition, almost all the respondents (95.7%) were not willing to fight against the cultivation of vitamin A cassava in their community after their exposure to the video. The high level of willingness therefore implies an increase in willingness to adopt vitamin A cassava after gaining information about it from the video.

Table 6: Distribution of respondents' willingness to adopt vitamin A cassava after exposure to "*Dada onipaki*" video

Statement	Willing		Not willing	
	F	%	F	%
Plant only vitamin A cassava	161	86.1	26	13.9
Consume vitamin A cassava and its products	162	86.6	25	13.4
Encourage my family and friends to consume vitamin A cassava and its products	177	94.7	10	5.3
Sell vitamin A cassava and its products	171	91.4	16	8.6
Encourage fellow farmers to cultivate vitamin A cassava	171	91.4	16	8.6
Discourage others from cultivating and consuming vitamin A cassava and its products	9	4.8	178	95.2
Fight against the cultivation of vitamin A cassava in my community	8	4.3	179	95.7
Disseminate information about the benefits that can be derived from consuming vitamin A cassava and its products	173	92.5	14	7.5
Purchase the vitamin A cassava cuttings at higher prices than the white cassava variety	141	75.4	46	24.6
Willing to adopt vitamin A cassava at higher price	135	72.2	52	27.8

Source: Field survey, 2018

Difference between farmers' knowledge of vitamin A cassava before and after exposure to "*Dada onipaki*" video

Table 7 shows that there was a significant difference (P=0.000) in the cassava farmers' knowledge after exposure to the video. This is in agreement with a study carried out by Naseem, Vijay, Vartika and Tanupriya (2016) on effectiveness of an educational video in improving oral health knowledge in a hospital setting. It was also concluded that incorporation of video in imparting oral health education can be an effective tool in improving oral health knowledge, which can impact the oral health behavior of people and community.

Table 7: Showing difference between in farmers' knowledge of vitamin A cassava before and after exposure to "*Dada onipaki*"video

Period	N	Mean	SD	T	Df	P	Remark	Decision
Before	187	4.2139	1.48005		372			
After	187	5.1497	1.21329	-6.687		0.000	S	Reject Ho

P <0.05, S=significant, N=total population, df=degree of freedom, Ho=Hypothesis, SD=standard deviation

Difference in the farmers' willingness to adopt vitamin A cassava before and after exposure to "*Dada onipaki*"video

Result in table 8 explains that there was a significant difference (P=0.000) in willingness after the exposure. This suggests that exposing the cassava farmers to the video had an impact on their willingness to adopt vitamin A cassava. This translates to the fact that the respondents are interested in cultivating vitamin A cassava. This finding corroborates the farming theory that talks about how the media highlights certain events and then places them within a particular context to encourage or discourage certain interpretations. Framing is also sometimes referred to as a second level of agenda setting in which messages are packaged to influence change in attitude or behaviour.

Table 8: Showing difference in the farmers' willingness to adopt vitamin A cassava before and after exposure to "*Dada onipaki*"video

Period	N	Mean	SD	T	Df	P	Remark	Decision
Before	187	4.2299	2.73086	-11.564	372	0.000	S	Reject Ho
After	187	6.9947	1.79754					

Source: Field survey, 2018

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PERCEPTION OF CASSAVA PROCESSORS TOWARDS MODERN POST-HARVEST TECHNOLOGIES IN EKITI STATE, NIGERIA

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ABSTRACT

The study assessed the perception of cassava processors towards modern post-harvest technologies in Ekiti State. Multistage sampling technique was used to select 120 respondents. Primary data were collected on socio economic characteristics, level of awareness, farmer's perception and constraints faced by cassava farmers towards adoption of modern post-harvest technologies. Data were collected with the aid of questionnaires and analysed using frequency count, percentage and mean. The result showed that the mean age of the respondents was 47 years, 70.8% were married and 84.2% had formal education. Majority (98.3%) of respondents were aware of mechanical grater. Majority (83.3%) of the respondents had favourable perception towards adoption of modern-post harvest technologies while 16.7% had unfavourable perception about the technologies. Lack of scientific knowledge about modern post-harvest technologies ($\bar{x}=1.21$) was ranked first as the major constraint while the least was high cost of modern post-harvest handling technologies ($\bar{x}=1.03$). The study concluded that lack of scientific knowledge about modern post-harvest technologies was the major reason why cassava processors have not adopted modern post-harvest technologies and recommends that Extension agents should actively disseminate information on improved postharvest technologies to farmers through use of mass media (e.g., radio/television) and farmer's groups.

Keywords: Cassava, Post-harvest, technologies, utilisation and perception

INTRODUCTION

Cassava (*Manihot esculenta*) is a starchy root crop that ismostly grown across West Africa. According to Food and Agriculture Organisation of the United Nations (FAO, 2017), Nigeria is currently the largest producer of cassava in the world with an annual output of 54 million tonnes. Cassava is mostly sold as a processed product unlike other roots and tubers crops which are sold in their fresh and raw state. Processing cassava root to other food forms creates products with longer shelf life, adds value to the root and reduces postharvest loses (Falade and Akingbala, 2010); and efficient in removing the poisonous substance *cyanogenic glucoside.*

Poor processing, therefore, is a major cause of post-harvest losses in Nigeria, which may be due to some constraints such as lack of appropriate processing technologies by farmers. Poor processing could also be linked to but are not limited to lack of information, lack of access to credit, inadequate knowledge level of processing technologies. Cassava, being a perishable root and tuber that deteriorate within two or three days after harvest, requires post-harvest processing within the shortest period.

Traditional methods of cassava processing are often constrained by low quality, low output per unit of time, drudgery, and low income for farmers. According to (FAO, 2013), these methods employed may not be efficient in removing *cyanogens* to safe levels. The application of novel post-harvest handling, processing, and packaging and storage techniques is of critical importance for successful large-scale production and utilisation of cassava roots and products. Although cassava can be processed traditionally or using modern technologies, there is a need to address the problems associated with traditional cassava processing. Successful application of these postharvest technologies will contribute towards maintaining product quality and safety as well as reducing incidence of postharvest losses and, thereby, improve food security (Opara, 2013). It is against this background that the study seeks to assess the perception of cassava farmers towards modern post-harvest technologies in Ekiti State.

The specific objectives are to:
1. describe the socioeconomic characteristics of the respondents,
2. assess the farmer's perception towards modern post-harvest technologies, and
3. identify the constraints faced by cassava farmers towards adoption of modern post-harvest technologies

METHODOLOGY

The Study Area is Ekiti state. A multistage sampling technique was used in selecting respondents for the study. At the first stage, Ekiti state was randomly selected from other states where cassava is being cultivated and processed. Secondly, three (3) Local Government Areas (Ado LGA, Ikole LGA and Oye LGA) were selected randomly. This stage was followed by collecting a list of cassava farmers from the Agricultural Development Programme (ADP) for each Local Government. Fourthly, two towns were randomly selected in each Local Government. At the fourth stage, twenty (20) respondents were randomly selected from each town, making a total of 120 respondents.

Primary data were collected through the aid of questionnaires and analysed descriptively

using frequency count, percentage and mean. Cassava farmers' perception towards the adoption of modern post-harvest technologies was measured by adopting a 5-point Likert typed rating scale using the following indices: 1=strongly disagree, 2=disagree, 3=undecided, 4=agree and 5=strongly agree. Chi Square was used to test the significance association between socioeconomic characteristics and adoption of cassava modern post-harvest technologies. Data were presented using tables and charts.

RESULTS AND DISCUSSION
Socioeconomic characteristics

The result of the socioeconomic characteristics of the respondents in Table 1 reveal that majority, (43.3%) of the respondents fall within the ages of 46-50 years, and only 7.5 % were above 16-30 years. The mean age of the respondents was 47 years, implying that majority of the respondents were adults who need to adopt modern technologies to reduce stress associated cassava processing. This conforms with (Olayemi et al., 2019), who opined that most of the cassava processors in Ekiti state were adults compared to youths which were fewer in number. Majority

(71.7%) of the respondents were female. This is in line with (Otubo, 2021), who denotes that female dominates male in the processing of cassava. In addition, majority (35.8%) of the respondents had secondary education, and 15.8% had no formal education. According to (Alabi et al., 2019), education has an important role to play in an individual's life; it predisposes the individual to innovation and acquaint them with various knowledge. Most of the respondents (36.7%) had farming experience of 11-20 years, and 8.3% had farming experience of 31 years and above. This implies that most of the cassava processors have enough farming experience, which is sufficient for them to know the importance of modern processing technologies over traditional methods.

It was also indicated that 41.7% of the respondents had a monthly income of N5000-N 15000, while only 10.0% had an income of N26000-N35000. This implies that most of the cassava processors do not have enough and sufficient income from processing their cassava. This is in accordance with Ademiluyi, et al., (2017) and Ajayi and Olutunmise, (2018) who denote that adoption of modern post-harvest technologies will greatly increase the income of cassava processors.

Table 1: Socioeconomic Characteristics of the Farmers

Variables		Frequency	Mean
Sex	Male	34(28.3)	
	Female	86(71.7)	
Age	16-30 years	9(7.5)	
	31-45 years	36(30.0)	
	46-50 years	52(43.3)	47
	61-75 years	23(19.2)	
	Single	11(9.2)	
	Married	85(70.8)	
Marital status	Divorced	6(5.0)	
	Widowed	18(15.0)	
	Primary	23(19.2)	
	Secondary	43(35.8)	
Education	Tertiary	35(29.2)	
	No formal education	19(15.8)	
	0-10 years	43(35.8)	
Farming	11-20 years	44(36.7)	
experience	21-30 years	23(19.2)	
	31 years and above	10(8.3)	
	N5000 - N 15000	50(41.7)	
	N16000 - N25000	40(33.3)	
Income	N 26000 - N35000	12(10.0)	
	N36000 - N45000	18(15.0)	

Note: Percentages are in parentheses

Level of cassava processors' perception towards modern post-harvest technologies

Going by mean ($\bar{x}$ =45.71) and grand mean (3.81) shown in Figure 1, majority (83.3%) of the respondents had positive perception towards adoption of modern-post harvest technologies

while 16.7% had negative perception about the technologies. This indicates that most of the respondents agreed with the positive statements on modern post-harvest technologies adoption and rejected negative statements that discourage adoption of modern post-harvest technologies. This

implies that the prospect of adopting cassava modern post-harvest technologies is very high in

the study area.
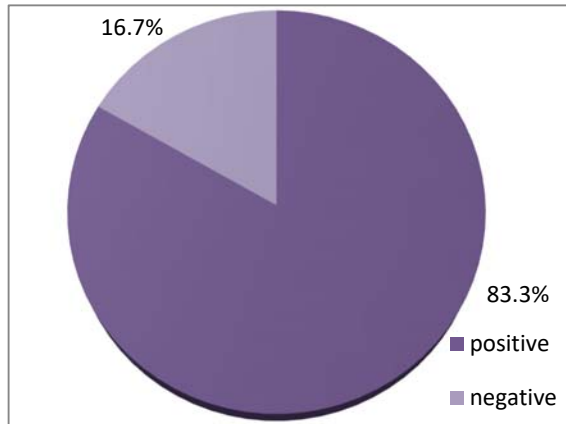
Figure 1: Perception towards the Adoption of Modern Post-harvest Technologies

Constraints faced by respondents on the adoption of cassava modern post-harvest technologies

Table 2 shows the constraints on the adoption of cassava modern post-harvest technologies. Lack of scientific knowledge about modern post-harvest technologies ($\bar{x} =1.21$) was ranked first as one of the major constraints to the adoption of cassava modern technologies; this was closely followed by lack of conviction about cassava modern technologies $\bar{x} =1.71$. Lack of skill and inadequate labor $\bar{x}=1.19$ was ranked as the third constraint on the adoption of cassava modern technologies, followed by lack of guidance and training $\bar{x}=1.12$. Raked least among these constraints were high cost of cassava modern post-harvest technologies $\bar{x}=1.03$ and economic constraints $\bar{x}=1.03$.

Table 2: Constraints on the Adoption of Cassava Modern Post-Harvest Handling Technologies

Variables	Mean Rank
Lack of scientific knowledge about modern post-harvest technologies	1.21 1st
Lack of conviction about modern post-harvest handling technologies	1.71 2nd
Lack of skill and inadequate labour	1.19 3rd
Lack of technical guidance and training	1.12 4tth
High cost of modern post-harvest handling technologies	1.03 5th
Economic constraints	1.03 5th

CONCLUSION

The study indicates that majority of the cassava processors in Ekiti state were adults and females. Most of the processors had attained different forms of education especially formal education. Majority of the cassava processors agreed that modern technologies results in reduced processing time, reduced labor and reduced stress. Most of the cassava processors agreed that technologists were not available to assist in operating the technologies. More so, cassava processors have not adopted cassava post-harvest technologies because they lack necessary guidance and training required to adopt these technologies. The study therefore recommends that:

1. To solve the problem of inadequate capital, farmers should pool their funds through joint contribution. Such funds can be used to purchase the costly postharvest and storage facilities.
2. Government should provide credit facilities for cassava processors in Ekiti state and provide modern post-harvest technologies at reduced cost for cassava processors.
3. Young people should be encouraged to engage in the business of cassava processing to replace the aging cassava processors.
4. Extension agents should actively disseminate information on improved postharvest technologies to farmers through use of mass media (e.g., radio/television) and farmer's groups.

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ASSESSMENT OF ADOPTION OF THE ORANGE FLASHED SWEET POTATO AMONG FARMERS IN OSUN STATE, NIGERIA

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ABSTRACT

Orange Fleshed Sweet Potato (OFSP) is a crop with lots of nutritional and economic benefits, which has great potential of curbing nutritional deficiency in young children and adult. The study assessed adoption of the orange fleshed sweet potato among farmers in Osun state. A multi-stage sampling procedure was used to select 121 potato farmers for this study. Data collected on the level of knowledge of potato farmers and level of adoption of OFSP were analysed using percentages, mean, frequency distribution, and Pearson Product Moment Correlation (PPMC). The study revealed that mean age of the respondents was 54 years, majority were male (79.3%), married (67.8%) and had no formal education (52.9%). Majority (56.7%) of the respondents had high knowledge about OFSP. However, there was a low (55.4%) level of adoption of OFSP. A significant relationship existed between sex (χ^2=37.60, p=0.004), religion (χ^2=79.81, p=0.000), farm size (r=0.229, p=0.014), knowledge on OFSP (r=-0.257, p=0.004) and adoption of OFSP. Sweet potato farmers had high knowledge on OFSP but had low level of adoption. Hence, constraints faced by farmers which in-turn affects the production of OFSP are the main reasons for the low level of adoption. Based on these findings, we therefore recommend that government and research institutes should encourage farmers, researchers and relevant stakeholders aimed at developing OFSP varieties.

Keyword: Adoption, Orange Fleshed Sweet Potato, Cultivation

INTRODUCTION

Agriculture is a very important key to ensuring food security; this is because of its ability to supply food for man. Food supplies the body with energy, amino acids, vitamins and minerals which are needed for growth, efficiency and maintenance of cells and tissues in the body and the nutrient requirements of the body depends upon the age, gender, size of the body and the activity patterns needed for survival in a given environment. However, the nutritional aspect of food security is often overlooked in favor of simply ensuring that people are eating regular meals, but an important part of food security is access to nutritionally adequate and safe foods (Radimer, 2002). Food systems should not only feed the population, but also provide affordable nutritious diets (Haddad *et al.,* 2016).

Vitamin A is an essential nutrient that prevents blindness in children and pregnant women. It is deficient among people in most sub-Saharan African countries, which results in increased risks of severe infections and even death from common diseases such as diarrhoea and measles (World Health Organisation, 2017). Vitamin A is a fat-soluble vitamin, essential for vision in dim light; cellular, bone and tooth growth; formation and maintenance of healthy skin, hair, and mucous membranes; reproduction; and immunity boosting. Vitamin A is so important in embryological development that without it, the fertilized egg cannot develop into a foetus (Brody, 2007). For easy access to vitamin A present in orange fleshed sweet potato for the populace, farmers must be willing to adopt the technology.

Objectives of the study

1. describe the socioeconomics characteristics of respondents in the study area
2. ascertain the level of knowledge of potato farmers about orange fleshed sweet potato
3. examine the level of adoption of OFSP in the study area

METHODOLOGY

The study was carried out in Osun State. The state is located in the south-western part of Nigeria which has the incidence of poverty of 19.5% and 80.5% for food poor and non-poor, respectively (NBS, 2010). A multistage sampling procedure was used to select respondents for the study. At the first stage, 50% of ADP zones was purposively selected which are Osogbo and Iwo because of predominance of sweet potato farmers in the area. At the second stage 25% of the blocks were purposively selected from each zone based on level of potato cultivation to get five blocks. At the third stage, 15% of the cells were also purposively selected based on number of potato farmers available, to give a total of 7 cells. At the last stage, 15% of sweet potato farmers were selected using proportionate to size sampling to give a total of 121 respondents. A well-structured questionnaire along with interview schedule was used to elicit information from the respondents.

RESULTS AND DISCUSSION

Table 4.1 shows the sex distribution of respondents in the study area. Most (85.8%) of the fruit farmers were male, while the remaining 14.2 percent were female. This implies that majority of the potato farmers in the study area were male. This is in accordance with the findings of Omoare *et al* (2014) that most potato farmers in Osun state are male. The distribution of respondents by age as shown in Table 4.1a reveals that the respondents had mean age of 53.66 ±7.77. Most of the respondents (42.1%) were between the ages of 55 and 64 years. 39.7% of the respondents were between 45 and 54 years while 9.9% were within the age range of 35 and 44 years. This implies that the potato farmers are adult moving away from their active age but are still able to adopt different post-harvest practices that can reduce loss. Also, result show that majority (87.6%) of the farmers were married, 8.3% were single while 0.8% were separated. This implies that famers are responsible adults who cherish marriage institution as most of

the single farmers were youths. Result of the analysis also shows that 65.3% of the farmers were Muslims while 29.8% of the farmers were Christians. This implies that majority of the farmers were Muslims. But the two religions are common in the study area. The result shows that 52.9% of the farmers in the study area had no formal education, 41.3% of the respondents had primary education while 5.0% of the respondents also has secondary education. This implies that most of the potato farmers in the study area can read and write, which consequently affect their adoption of OFSP Table 4.1 shows that 48% of the potato farmers had the household size that ranged from 3 -6 persons, while 46.2% ranged from 7-10 persons, and only 5.8% of them had household size greater than 11 persons. The mean household size was 7.1728± 3.66, this implies that a fairly large family size in the community which could be attributed to source family labour used for farm operations within the farming household.

Table 4.1: Distribution of selected respondents by their socioeconomic characteristics (N=121)

Variables	Frequency	Percentage	Parameter
Age (Years)			
35- 44	12	9.9	53.66 ± 7.77
45 - 54	48	39.7	
55- 64	51	42.1	
>64	10	8.3	
Sex			
Male	96	79.3	
Female	25	20.7	
Marital status			
Single	10	8.3	
Married	106	87.6	
Separated	1	0.8	
Widow/Widower	4	3.3	
Religion			
Christianity	36	29.8	
Islam	79	65.3	
Traditional	6	5.0	
Household size			
1 -3	19	11.7	
4 -6	54	33.3	6.58 ± 2.28
7 -9	53	32.7	
>9	36	22.2	
Educational level			
No Formal Education	64	52.9	
Primary Education	50	41.3	
Secondary Education	6	5.0	
Primary occupation			
Farming	140	86.4	
Fishing	1	0.6	
Artisan	10	6.2	
Civil Service	5	3.1	
Others	6	3.7	

Filed survey, 2019

Table 2 indicates the respondents Level of knowledge about OFSP. Majority (58.7%) of the respondents has High level of knowledge on Orange Flesh Sweet Potato while 41.3% had Low level of knowledge on Orange Fleshed Sweet Potato. This implies that those respondents who had high level of knowledge were seen to have adopted the new variety of sweet potato due to the benefit that was derived from it.

Table 4.2: Distribution of respondents based on their knowledge about OFSP (N=121)

Items	Frequency	Percent
OFSP yields better than other sweet potato species	120	99.2
OFSP has better quality than other species of sweet potato	117	96.7
OFSP is more profitable than other species of sweet potato	68	56.2
OFSP can be cultivated all year round	79	65.3
OFSP can be consumed raw without cooking	97	80.2
OFSP contain high level of Vitamin A	119	98.3
OFSP can only be planted in water-logged area	25	20.7
OFSP is orange in colour	94	77.7
Consumption of OFSP improve eyesight due to vitamin A content in it	97	80.2
OFSP can be used for bread making	70	57.9
OFSP has less appealing taste/smell than other potatoes	35	28.9
OFSP is cultivated by seed	51	42.1
OFSP can be used as cover crop to protect the soil	120	99.2
OFSP has a ready market due to it high nutritional value	57	47.5
Poor accessibility and availability of OFSP vines	77	64.2

Field survey, 2019

Table 4.2b: Distribution of respondents based on their Level of knowledge about OFSP

Knowledge levels	Frequency	Percentage
Low knowledge	71	58.7
High knowledge	50	41.3
Total	121	100.0

Field survey, 2019

The result of Table 4.3 shows the level of the respondents has about OFSP. 99.2% of the respondents claims that OFSP yields better than other sweet potato species and also serves as cover crop to protect the soil, 98.3% had the knowledge that OFSP has high level of Vitamin A, 96.7% had the knowledge that OFSP has better quality than any other sweet potato, 80.2% of the respondents also have this knowledge that OFSP can be consumed raw and that can also improve the eye sight due to vitamin A content in it. This implies that majority of the respondents had a high level of knowledge about OFSP which has therefore prompted sweet potato farmers to adopt it due to its high relevant and importance to the respondents. This aligns with the report of Kaguongo, *et al.* (2010).

Table 4.3 Distribution of respondents' adoption of Orange Fleshed Sweet Potato

OFSP techniques	To a large extent	To a lesser extent	Not at all	Mean	R
Select a site close to a water source	25.6	60.3	14.1	1.12	2nd
Avoidance of land with previous sweet potato usage	5.1	24.4	70.5	0.35	13th
Leave the land flat in conventional seed multiplication procedure, while in rapid multiplication procedure ensuring raising of beds to about 1.5m width	3.2	23.7	73.1	0.30	14th
Making the area between adjacent beds about 50cm wide	5.8	26.9	67.3	0.38	12th
Ensuring the height of beds be between 10-30cm depending on the soil	17.3	56.4	26.3	0.91	4th
Ensuring that vines to be planted are healthy and about 2 to 3 months old	8.3	37.2	54.5	0.54	7th
Cutting up of vines into pieces of two or three nodes	5.8	34.6	59.6	0.46	9th
Planting of sweet potato vines soon after cutting	35.9	56.4	7.7	1.28	1st
Planting the vines on raised beds with spacing	6.4	26.3	67.3	0.39	10th

OFSP techniques	To a large extent	To a lesser extent	Not at all	Mean	R
between rows 10cm to					
Inserting vines at an angle of 10^0	23.1	44.2	32.7	0.90	5th
Leaving one node with leaf outside	12.2	55.1	32.7	0.79	6th
Following by an extra application of farmyard manure	4.5	18.6	76.9	0.28	15th
Ensuring moist soil conditions are always maintained but avoid water logging	17.3	65.4	17.3	1.0	3rd
Ensuring weed free conditions in the first 4-5weeks	10.9	17.3	71.8	0.39	10th
Harvesting of vines after 2-3 months from planting day	5.8	35.3	59.0	0.47	8th

Source: Field survey, 2019

4.3b Categorisation of respondents based on their level of adoption of OFSP

Table below indicates the respondents Level of adoption OFSP. Majority (55.4%) of the respondents had low level of adoption of Orange Flesh Sweet Potato, while the remaining 44.6% had high level of adoption of OFSP. This implies that a good number of the farmers had not well adopted the OFSP cultivar. Therefore, strong effort is required to encourage farmers to adopt OFSP as it is a good and nutritious food for infants and nursing mothers, while also serving as a good source of income to farmers.

Table 4.3b: Distribution of respondents based on their levels of OFSP adoption

Adoption levels	Frequency	Percentage
Low knowledge	67	55.4
High knowledge	54	44.6
Total	121	100.0

Field survey, 2019

Result on Table 4:9 shows that there was a significant relationship between respondents' knowledge and Adoption of Orange flesh sweet potato (r=-0.257, p=0.004). This implies that the knowledge the sweet potato farmers have about Orange flesh sweet potato had prompted them or motivated them in the adoption of the new variety of sweet potato. The result agrees with Victor (2016) and Kaguongo et al, (2010) who reported that knowledge on value addition and nutritional benefits were key factors affecting the adoption of orange fleshed sweet potato varieties. This means that the more enlightened the farmers are, the better chances of them adopting the new varieties.

Table 4.4: PPMC analysis of relationship between respondents' level of knowledge and Adoption of Orange flesh sweet potato.

Variable	r-value	p-value	Decision
Level of knowledge	0.257	0.004	Significant

Source: Field Survey, 2019

CONCLUSION AND RECOMMENDATION

The result on knowledge revealed that most of the farmers were aware that OFSP yields better than other sweet potato species and also serves as cover crop to protect the soil, has high level of Vitamin A, has better quality than any other sweet potato, can be consumed raw and can also improve the eyesight due to vitamin A content in it. The result further showed that majority of the respondents had high knowledge on Orange Fleshed Sweet Potato. study established that majority of the respondents had low level of adoption of Orange Flesh Sweet Potato, which shows that more work is required in getting potato farmers adopt the cultivation of the nutritious and economically viable Orange fleshed sweet potato. the study recommends that level of adoption of OFSP is low in the study area, adequate effort geared towards sensitization of farmers on the importance of OFSP as a nutritious food, feed and source of income should be embarked upon. Concerted effort and resources should be dedicated to the publicity of consumption benefits of OFSP across the country, as this will increase market for OFSP.

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HERDSMEN-CROP FARMERS CRISIS IMPLIED CHANGING OF FARMING HOUSEHOLDS IN ONDO STATE, NIGERIA

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ABSTRACT

The crisis between herdsmen and farmers has escalated in recent years from North Central region of Nigeria and are spreading southward threatening the livelihood of farming households. This study examined the herdsmen-crop farmers crisis implied changing livelihood of the farming households in Nigeria. Multi-stage sampling procedure was used to select 80 farmers for the study and well-structured questionnaire was used for data collection. The study seeks to examined Socioeconomic characteristics of farmers, causes of herdsmen and farmers crisis, Crisis impacts on household food security, Data were gathered on…. Frequency count and percentages were used to analyse data generated from respondents. The study showed that most population involved in farming in the study area are male, it shows a good participation of females also in farming. Also revealed that the major causes of conflicts in the study area are uncontrolled grazing, grazing without consent and destruction of crops, the production of crops and livestock which greatly contribute to food sufficiency and security in the study area has been greatly hindered by the actions of herdsmen people, their activities has been of negative impact on crop production and livestock rearing in the study area. It also highlighted the major causes of the violent clashes between the herdsmen and farmers which include the competition for land, water. The study recommends that there should be legislation to remedy the effect of desertification in the Sahel region and other communities and Government should come up with policies to create grazing reserves and dams for pasture and water in states that are predominantly herdsmen so that they don't stray long distances in search of pastures.

Keywords: Fulani Herdsmen-Crop Farmer, Crisis/ Conflict, Changing Livelihood

INTRODUCTION

Over 90 per cent of pastoralists reportedly are herdsmen, a large ethnic group straddling several West and Central African countries. The herdsmen, the world's largest semi-nomadic group, live in fourteen West and Central African countries, from Senegal to Central African Republic. They established the Sokoto caliphate (1804- 1903) (International Crisis Group, 2017). Pastoralists own approximately 90 per cent of the national herd, estimated at 19.5 million cattle, about 975,000 donkeys, 28,000 camels, 72.5 million goats and 41.3 million sheep (FMARD, 2011). Most of the Fulani people herd sheep, goats and cattle across the dry grass lands of their environs. The main Fulani subgroups in Nigeria are: Fulbe Gombe, Fulbe Adamawa, Fulbe Sokoto, Fulbe Mbororo, and Fulbe Borgu (Kasarachi, 2016).

Recent study by Ogbette et al (2018) have shown that, serious conflict frequently erupt between herdsmen and farmers leading to loss of lives and valuable properties. The conflict has not only brought insecurity but has also demonstrated high potential to exacerbate the food crisis in Nigeria due to loss of farmer lives, crops and valuable properties. According to Global Terrorism Index report (2015), herdsmen militants were responsible for the death of 1,299 people in just 2014, making them the fourth most deadly terrorist group in the world at the time. The nomadic herdsmen have been in conflict with local farmers, especially in the middle belt, over the access and control of lands on which their cattle graze. Since 2015, several violent clashes between the Fulani herdsmen and farmers have been reported in many parts of the country particularly in states including Benue, Nasarawa, Enugu, Edo, Ondo, Delta, Ekiti, Abia and the Southern part of Kaduna state. Herdsmen and farmers crisis no doubt have negative impact on the lives, property, food security and educational development in Nigeria. Though, there is the dearth of quantitative evaluation of the catastrophic attacks, available statistics has it that between June 2015 to December 2016 Human Rights Watch in 2017. It was reported that an estimate of 50 people was killed in Egor, Nasarawa state and Agatu/Logo Benue state in June 2016. On February 5th, 2018, there was crisis between herdsmen and farmers which claimed lives at Ilu abo in Akure North of Ondo state. The herdsmen attack has claimed thousands of lives, destruction of farmlands and valuable properties worth several billions of naira in the country. Objectives of the Study, examined the changes in farming households socioeconomic and livelihood due to Fulani herdsmen and farmers crisis, Identified the causes of Fulani herdsmen and farmers crisis., Evaluated the crisis impacts on household food security.

METHODOLOGY

This study was conducted in Ondo state Nigeria which covers a land area of 15,500km[2].

Ondo state is bordered by Ekiti state to the north, Kogi state borders it to the northeast, Edo state to the east, Delta state to the southeast, Ogun state to the southwest and Osun state to the northwest. According to the 2006 census reports, the population of Ondo state stood at 3,460,877. The climate in Ondo state is tropical, the main climates are the dry and wet seasons. The average temperature is about 24.9°c while the rainfall averages 1546mm.Agriculture is one of the important additions to the economy of Ondo state, production varies of cash crops like cocoa, kolanut, oil palm, coffee amongst others and food crops like cereals, legumes, tubers as well as fruits.

Interview and structured questionnaire was used in collecting primary data. The primary data contains a direct or original account of event or phenomena given by someone who actually observed the event or phenomena. The Secondary Data are relevant information obtained from the works of others-Textbooks, journals, magazine and unpublished articles, Research and project reports in a related field, Manuals containing policy statement of the selected companies.

The target population is the farming households in Ilu Abo, Akure North rural locality of Ondo state. The sampling technique involves a simple random selection of 80 farmers from the study area. The respondents were therefore subjected to well structure questionnaires. Data were analysed using descriptive statistical tools- mean, mode and frequency distribution.

RESULTS AND DISCUSSION
Socioeconomic characteristics

From Table 1, Most of the respondents are male (55%) while the remaining (45%) are females. This result shows that most population involved in farming in the study area are male, it shows a good participation of females also in farming. A study by Olayemi *et al* (2012) stated that women are known to be more involved in agricultural activities than men in Sub-Sahara Africa (SSA) countries. The involvement and participation of men in the agricultural activities cannot be undermined. Age is a very important factor in agricultural production because it has impact on efficiency and production level. The mean age of the sampled farmers was 45 years while 63.7 percent falls below 26 years of age, 25.0% have their ages ranged from 26-35 years. 5% of the respondents are between 36-45 years while 6.3% of the sampled respondents are ranged 46 years and above. These findings shows that majority of the framers in the study area are young able bodies men and women, and it will surely enhance increased production in farming .it also shows that the future of agricultural production in the study are is certain. Data reported in table 1 indicates that there is stratification on the status of education in the study area. 41.3% are SSCE holders, 31.2% of them are diploma/ NCE holders, 20% are HND/BSC holders, 7.5% are postgraduates. This indicates that almost half of the respondents have secondary certificate and others have at least tertiary institution certificates. A good educational background has always influence agricultural development positively; education is known to facilitate farmers understanding and use of improved crop production practices.

Table 1: Socioeconomic characteristics of farmers

Variable	Frequency	Percentage
Gender		
Male	44	55
Female	36	45
Age		
Less than 26	51	63.7
27-35	20	25.0
36-45	4	5.0
46 and above	5	6.3
Marital Status		
Single	52	65
Married	28	35
Educational		
SSCE	33	41.3
Diploma/NCE	25	31.2
HND/degree	16	20.0
Postgraduate	6	7.5
Household Size		
0-5	51	63.8
6-10	27	33.7
11 and Above	2	2.5
Total	**80**	**100**

Source; Field data, 2021

Causes of Fulani herdsmen and farmers crisis

The research results from table 2 shows that the major causes of conflicts in the study area are uncontrolled grazing, grazing without consent and destruction of crops. This corroborates with the study by Ajibefun (2018) and Adelakun et.al (2015) which revealed that the major cause of the conflict was destruction of crops. Provided the problems continue there is every tendency for crisis outbreak, hence police and the customary help to resolve conflict. Governments regard the peace and unity of Nigeria as paramount and non-negotiable. This means both herdsmen and farmer are to be protected to move around to practice their business in accordance with the law of the State (Ahmed-Gamgum, 2018).

The research results shows that 78% of the crisis are still unresolved in the study area , this implies that there is still grievances on the part of farmers who are either not satisfied with verdict given in handling the menace or who are very much at loss over the dispute, thus proper punishment should be put in place to protect farmers and also compensation so as to serve as consolation for farmers.

Table 2: Causes of Fulani herdsmen and farmers crisis

Variable	Frequency	Percentage
Cause of conflicts		
Grazing without consent	16	20.0
Destruction of crops	56	70.0
Uncontrolled grazing	8	10.0
Who solves conflicts		
Customary	43	53.8
Police	37	46.3
Conflict status		
Resolved	8	10.0
Unresolved	72	90.0
TOTAL	**80**	**100**

Source: Field data, 2021

Crisis impacts on household food security

The activities of Fulani herdsmen have a ravaging effect on food security and production. Table 3 shows that farmland productivity was 87.5% before the crisis and menace of Fulani, production of crops was on the increase, after the actions and crisis of the Fulani herdsman, farmland became 60 % unproductive. 97.3% of crops were either destroyed or affected and livestock and animal production was also affected. The aforementioned research result shows that the production of crops and livestock which greatly contribute to food sufficiency and security in the study area has been greatly hindered by the actions of Fulani people, their activities have been of negative impact on crop production and livestock rearing in the study area.

This menace of the Fulani people has discouraged farmers from engaging in farming activities, this has poised a big threat to food security and unless necessary measure is been taken it will hinder the agricultural sector.

Table 3: Crisis impacts on household food security

Variable	Frequency	Percentage
Farmland before		
Productive	70	87.5%
Unproductive	10	13.5%
Farmland after		
Productive	20	25%
Unproductive	60	75%
Destruction of crop		
Yes	75	93.75%
No	5	6.25%
Reduction in animals		
Yes	71	88.75%
No	9	11.25%
TOTAL	**80**	**100**

Source: Field data, 2021

CONCLUSION AND RECOMMENDATIONS

The crisis between herdsmen and farmers have escalated in recent years from North Central region of Nigeria and are spreading southward threatening the livelihood of farming households which has unravelled the country's social fabric, displaced some of the population and resulted in a steady deterioration in the political, security and stability of the country. This work has discussed the incessant clashes between the herdsmen and farmers in Ondo state. It also highlighted the major causes of the violent clashes between the herdsmen and farmers which include the competition for land, water etc. Some other reasons for the clashes between the two groups include the acquisition of sophisticated weapons by herdsmen in contrast to their traditional sticks, bows, arrows and in some cases swords. Also, certain government policies on the matter appear not effective in finding solution to the conflicts because there are still grievances on the part of farmers who are either not satisfied with verdict given in handling the menace or who are very much at loss over the dispute.

Moreover, the incidences of cattle rustling provoke reprisal attacks which result in killings and destruction of villages by herdsmen.

The study recommends that:

- There should be legislation to remedy the effect of desertification in the Sahel region and other herdsmen communities.
- Government should come up with policies to create grazing reserves and dams for pasture and water in states that are predominantly herdsmen so that they don't stray long distances in search of pastures.
- Proper security measures should be put in place to protect farmers and their farmlands, and they should as well be compensated to serve as consolation for farmers.
- Both the herdsmen and the farmers are stakeholders in the economic development of Nigeria, any form of grievances should be resolved amicably before it escalates into clashes between the two groups.

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GOVERNMENT LAND USE POLICY: IMPLICATIONS ON AGRICULTURAL PRODUCTIVITY AND RURAL POVERTY IN NIGERIA

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ABSTRACT
In Nigeria, the acquisition and use of land is a major concern as it affects agricultural productivity. This study looked at the relationship between the land tenure system in Nigeria and agricultural productivity in Nigeria. The specific objective of this study includes classification of different type of Land tenure system in Nigeria with the focus on the pros and cons of the system and analyse how it affects agricultural productivity and rural poverty in Nigeria This study is a review article which is quantitative in nature with purpose of addressing land tenure problem in Nigeria. Therefore, the study area is Nigeria. The finding revealed that the high cost of land acquisition, drawn-out land registration procedures, high registration costs and inconsistent government policy discouraged people from purchasing land in Nigeria. Based on the results of this study, it was suggested that the government review and amend the Land Use Act of 1978, which is currently in force, to make land available for agricultural purposes. Furthermore, private land acquisition of land for agricultural production should be encouraged by government with proper monitoring. Also, free access to land should not be limited to community alone if the purpose is to boost agricultural production. This study recommends that government should also reduce the registration fee for agricultural land in the rural area and sensitize individuals, organisations, and other entities about how to purchase land in Nigeria.
Keywords: Tenure security, Land tenure, Land reform and Agrarian productivity

INTRODUCTION

Poverty is one of the major challenges of the world economy. This is more prominent in the Sub –Saharan Africa such as Nigeria, NBS Poverty report revealed that 133 million of Nigerian are poor (National Bureau of Statistics NBS, 2002).

Recent report from United Nation 2022 place Nigeria to be 6th in position in the world in terms of population size. The most valuable natural resource for humans is land. This is because it has an impact on every facet of a man's fundamental needs for sustenance, clothing, and shelter claimed that without it, no country, city, or rural area could survive as a separate entity. Thus, it follows that all whether a person is a banker, a teacher, a farmer, a politician, a member of the military, everyone needs land for survival.

This report shows that more than 64% of Nigerians are poor, having engaged many strategies to fight poverty, there is a need to investigate our agricultural sector which can help us to boost our foreign exchange earnings and alleviate poverty if properly engage. Agricultural productivity is the major area where Nigeria uses to build our economy against poverty.

Some factors that have posed serious obstacles to agricultural production in Nigeria include population pressure on agriculture, a rural setting Non-Farm Services' Function Quantity of Holdings Land tenure structure.

Land tenure system in Nigeria and agricultural productivity

In both urban and rural areas where people's livelihoods depend on the cultivation of land (Agricultural Promotion Policy) [APP], 2016)

According to Umeh and Chukwu (2014) Smallholder farmers have limited access to land resources because of various socioeconomic and land tenure factors.

Land tenure is essentially the ways in which people or groups own land and can hold, transfer, or transmit that ownership as property rights (Terngu, 2017).

This study looked at the relationship between the land tenure system in Nigeria and agricultural productivity in Nigeria. The specific objective of this study includes classification of different type of Land tenure system in Nigeria with the focus on the pros and cons of the system and analyse how it affects agricultural productivity and rural poverty in Nigeria.

METHODOLOGY

This study is a review article with Nigeria as the study area This review covers different types of land tenure system in Nigeria with purpose of addressing land tenure problem in Nigeria.

RESULT AND DISCUSSION

Freehold tenure system

Individuals who subscribe to the Freehold tenure system pay a predetermined amount for the right to own a plot of land.

1. Merits of freehold tenure system

The land can be used as collateral to obtain loan from bank.
Perennial crops can be grown

Demerit Freehold Tenure System

The land may be too expensive to purchase. The actual owner may be difficult to establish.

The implication is that such land might be diversified into other usage which has negative.

2. Inheritance tenure system: In this case, land ownership is transferred to the next of kin.

Merits of Inheritance Tenure System

It gives owner complete freedom on the land. The land can be used to secure loan.

Demerits of Inheritance Tenure System

It is difficult to determine the ownership of the land. It may be a reason for dispute among the beneficiary.

The implication on Agricultural productivity is that non diversification into agricultural sector.

3. Communal Land Tenure system:

Merits of Communal Land Tenure System

Each member of the community has easy access to the land. The land is cheap to acquire, as no cost is involved.

Demerits of Communal Land Tenure System

Non-members of the community cannot have access to the land for farming.

The implications of this is that it has negative implication on agricultural productivity because of excessive land fragmentation overtime can discourage farming and consequently poverty (Okezie, Ahuchuogu, Jamalludin 2012; Zoysa , 2015).

4. Leasehold Tenure System: An individual is granted temporary ownership of a plot of land by some form of a title from the owner.

Merits of Leasehold Tenure System

This system allows for permanent crop cultivation. It ensures the use of available land.

Demerits of Leasehold Tenure System

The farmers cannot develop the land beyond the lease agreement terms.

The implications of this is that perennial crops like oil palm, cocoa, rubber etc. cannot be grown on such land.

This has negative Implications on foreign exchange earning of the country.

5. Gift Tenure System: This type of land ownership is when the landowner gives up his or her land voluntarily and without being coerced by anybody.

Merits of Gift Tenure System

It ensures maximum use of the land for increased production. It can be used to secure loan.

Demerits of Gift Tenure System

The ownership of the land can be challenged at anytime. There may be disagreement over such gift family members.

The implications of this is that agricultural land can be revoked and poverty may be the end result.

6. Rent Tenure System: The tenants pay a rent amount to the landlord for a period of time that they use the property. Depending on the agreement and terms, the rent period could be one to two years.

Merits of Rent Tenure System

It makes use of available land for agricultural purposes. The land is efficiently used and maintained for maximum production within the short period.

Demerits of Rent Tenure System

The land cannot be used to secure loan. The implications are that there is limitation to the development of such land. Thus, it has negative implication on agricultural productivity and consequently contribute to rural poverty.

7. Tenants at Government will: According to this system, land is leased by the Nigerian government to farmers for cultivating. The land is mostly used for large-scale farming and crop production. The land is relatively inexpensive to acquire.

A politician you may benefit at a time his associates are in power but may be at disadvantage when they are no longer in power.

Merits of Tenants or Government Will Tenure System

Farmers can easily have access to land. The land is cheap to acquire.

Demerits of Tenants at Government Will Tenure System

Permanent or perennial crops cannot be cultivated. Such land can easily be revoked, if the tenant fails to pay the rent at the right time-

This has great implications on agricultural productivity and consequent poverty for the rural people. Also, private land developers have taken over land in the rural area in disguise (Deborah, 2001; Omole, 2009)

This chapter therefore presents a comprehensive review of literature on the land use policy issues in Nigeria.

Land titling and registration's primary goals are to: (1) increase tenure security and foster long-term investment in technological advancements and land improvement; (2) make it easier for landowners to access credit by establishing tangible collateral; and (3) develop land markets and promote land transfers to the most productive landowners.

Inability of land users to acknowledge traditional tenure rights in project design and implementation results in conflicts, which in turn cause a high rate of de-reservation, deforestation, excessive poaching, and over-exploitation of resources within the reserves. These are the shortcomings of land tenure.

Due to the predominate user rights that exist within individual land ownership, tenure regimes on private lands have resulted in abuse and misuse of resources. Renewable natural resource conservation must be based on public education, shared understanding of how to use them, and

recognition of the rights of rural residents who own, use, and depend on them for their livelihoods within ecological boundaries.

The economy of the majority of Nigerian households and the country as a whole is based on agriculture. The provision of food, contribution to the GDP, creation of jobs, provision of raw materials for agro-allied industries, and generation of foreign exchange earnings are just a few of the sector's significant economic benefits for Nigeria (up until the early 1970s, agricultural exports were the main source of foreign exchange earnings).

CONCLUSION AND RECOMMENDATIONS

The finding concludes that the high cost of land acquisition, drawn-out land registration procedures, high registration costs and inconsistent government policy discouraged people from purchasing land in Nigeria. All these constraints have great implications on Agricultural productivity and rural poverty in Nigeria.

This study recommends that government should also reduce the registration fee for agricultural land in the rural area and also sensitize individuals, organisations, and other entities about how to purchase land in Nigeria. Furthermore, private land acquisition of land for agricultural production should be encouraged by government with proper monitoring. Also, free access to land should not be limited to community alone if the purpose is to boost agricultural production.

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DETERMINANTS OF FARM LABOUR SUPPLY AND UTILISATION IN RICE PRODUCTION AND PROCESSING AMONG RURAL HOUSEHOLDS IN SOUTH-EAST, NIGERIA

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ABSTRACT

The study evaluated the determinants of farm labour supply and utilisation in rice production and processing among rural households in South – East, Nigeria. It described the socioeconomic characteristics of the respondents and analysed the factors affecting farm labour supply and utilisation in rice production and processing. Multi-stage purposive sampling technique was used to select 221 respondents from three states of South – East Nigeria. Data for the study was collected through structured questionnaire and analysed using descriptive statistics such as mean and percentages and inferential statistics that included ANOVA. Results show that the mean number of days respondents were absent from farm in a month due to ill health was 3 days, 63.12 % of the respondents did not have contact with extension agents in a year, while 56.80 % of the respondents did not have access to credit. There was a significant relationship between age, membership of cooperative society as well as number of months of peak labour and labour use at 5% level of significance. Respondents were absent from farm for 3 days in a month due to ill health. Since ill health led to farmer been absent from farm for 12% of their labour days, the study concludes that greater labour would be available for rice production and processing if rural health-care was improved. Rural health care should be improved by government and Non-Governmental Organisations (NGOs) to reduce loss of labour due to ill health by the respondents.

Keywords: Labour use, Rice production, Rural household.

INTRODUCTION

Rice production is the major agricultural practice in some states of the Federation. Although rice can be grown anywhere, that is, rice can grow in all the geographical zones of Nigeria depending on the variety, the area of land used for rice cultivation is relatively minute as it is put at about 2 million hectares when survey puts it that Nigeria has the potentials of cultivating about 5 million hectares (AgroNigeria, 2014). The amount of money set aside for rice importation, if redirected into the improvement of rice production such as supporting both small scale and large scale rice cultivation and milling of rice grown in Nigeria to meet international standards like its rivals from other countries would enable Nigeria meet its rice demand and maybe export rice to neighboring countries. Considering the wide variation in rural poor's links to the economy, public policy should try and focus on matters such as their access to land and credit, education and health care, support service, and other transfer mechanisms are essential aspects that influence government policies which also affect farm labour supply for rice production.

The study described the socioeconomic characteristics of the respondents in the study area and identified factors affecting rice production and processing. The hypothesis for the study tested for a significant relationship between rice production and processing and selected socioeconomic characteristics.

METHODOLOGY

The study was carried out in South- East agro-ecological zone of Nigeria. South-East is one of the six geo-political zones in Nigeria. The zone consists of Abia State, Anambra State, Ebonyi State, Enugu State and Imo State.

Multi-stage purposive sampling technique was used to select the two hundred and twenty-one respondents for the study.

Table 1: Sampling Procedure

State	ADP Zones	Sample frame	Sample size
Abia	Zone 1	Block 1	20% of registered rice producers
		Block 2	20% of registered rice producers
	Zone 2	Block 1	20% of registered rice producers
		Block 2	20% of registered rice producers
Anambra	Zone 1	Block 1	20% of registered rice producers
		Block 2	20% of registered rice producers
	Zone 2	Block 1	20% of registered rice producers
		Block 2	20% of registered rice producers
Ebonyi	Zone 1	Block 1	20% of registered rice producers
		Block 2	20% of registered rice producers

	Zone 2	Block 1	20% of registered rice producers
		Block 2	20% of registered rice producers
Total (3)	6 Zone	12 Blocks	

RESULT AND DISCUSSION
Socioeconomic characteristics

Results in Table 2 show that rice production in the study area was dominated by males as majority (73.30%) of the respondents were male. This is in agreement with the findings of Monica, Kwasi and Ernestina (2016), who opined that the involvement of women in rice production activities is very low despite their potential to contribute to rice farming. Table 2 also

shows that 45.04% of the respondents were within the age range of 41-50 years. The mean age of the respondents was 46 years. This implies that the respondents were within the active age. Izuogu, Atasie and Ifenkwe (2015) had in a previous study found the mean age of rural dwellers in Imo State Nigeria to be 46 years. This may be attributed to the tedious nature of rice production activities, which make it less attractive for farmers at their old age.

Table 1. Distribution of respondents according to their socioeconomic characteristics

Variables	Abia %	Anambra %	Ebonyi %	Pooled %
Age (Years)				
20-30	0.71	0.70	2.72	1.35
31-40	22.60	19.40	24.50	22.17
41-50	45.20	43.00	46.95	45.04
51-60	26.02	34.90	23.10	28.05
61-70	15.47	2.00	2.73	3.39
Gender				
Male	80.14	69.80	74.15	73.30
Female	19.86	30.20	25.85	26.70
Membership of co-operative				
Yes	23.30	48.30	56.50	42.80
No	76.70	51.70	43.50	57.20
Number of persons that have migrated				
0-3	62.30	63.76	58.38	61.80
4-7	24.70	31.54	33.56	30.00
8-11	8.90	2.02	6.04	5.70
12-15	4.10	2.68	2.02	2.50
Absence from farm due to ill health in a month (Days)				
0-3	65.10	92.60	2.70	85.07
4-7	30.11	4.70	97.30	12.43
8-11	4.79	2.70	0	2.50
Extension contact				
Yes	37.00	37.60	36.10	36.88
No	63.00	62.40	63.90	63.12
Access to credit				
Yes	32.20	41.60	55.80	43.20
No	67.80	58.40	44.20	56.80

Source: Field Survey

Factors affecting labour supply for rice production and processing

Majority of the respondents (67.60%) agreed that migration affects labour supply for rice production and processing as shown in Table 3. As seen in Table 2 above, 61.80% of the respondents had less than 4 members of their families, who had travelled to the urban centres on economic reasons.

Other factors that affects rice production and processing were capital (90.12%), competition for labour among arable crops (73.16%) and availability of adults (56.62%). It is however against a priori expectation that respondents not many of the respondents agreed that health condition affects labour availability.

Table 3. Factors affecting labour supply for rice production and processing

Factors	Abia %	Anambra %	Ebonyi %	Pooled %
Availability of adults	61.00	59.29	49.57	56.62
Access to road to farm	45.90	54.20	48.12	49.40
Migration	71.54	77.07	54.19	67.60
Schooling of children	31.65	47.50	87.05	54.30
Capital	89.02	91.20	90.14	90.12
Health condition	13.08	16.60	19.34	16.34
Climate change	12.20	16.25	32.34	20.26
Tools and equipment	46.57	49.03	48.78	48.12
Rice production technologies	54.72	52.35	61.20	56.09
Competition for labour among arable crops	76.10	67.30	76.10	73.16
Government policies	45.05	51.43	34.40	43.62

Source: Field Survey

Relationship between labour use and selected factors affecting rice production

Table 4 is the multiple regression results showing the parameters that are significant in rice production and processing in the study area. Out of the eight explanatory variables captured in this study, only 5 (age, health, access to farm credit, number of months of peak labour and membership of cooperative) were found significant at 5% level of significance. This means that only these five variables exerted significant influence on labour use in the study area.

Health condition showed a negative relationship with the level of labour use which implies that for every increase in the number of times respondents were absent from farm due to ill-health, there was a reduction in labour use by 0.16%

Age showed a positive significant relationship with labour use, which implied that for every unit increase in age at a given level of other variable inputs will increase the value of labour use. These findings negate the publication by Alarima, Adamu, Masunaga and Wakatsuki (2011) who reported that age was negatively significant to rice production but agrees with Ohen and Ajah (2013) who in a previous study of cost and returns of small scale rice farmers in Cross River state reported that the age of the farmer had a positive coefficient and was significant at 5% significant level suggesting increase in rice output as the age of the farmer increases. The possible reason for this is that the older farmers are more experienced in rice production than the younger ones.

Table 4. Multiple regression estimate of relationship between labour use and selected factors affecting rice production

Variable	Abia State (Linear)	Anambra State (Exponential)	Ebonyi State (Linear)	Pooled (Linear)
Constant	2.110 (0.931)	9.759 (6.439)***	6.408 (3.161)***	3.611 (2.916)**
Age	0.056 (2.280)**	0.21 (1.134)	0.002 (0.067)	0.035 (2.301)**
Health Condition	-0.040 (-0.377)	-0.025 (-2.786)***	-0.084 (-0.420)	-0.157 (-2.216)**
Sex	-1.194 (-2.586)***	-0.122 (-0.394)	0.036 (0.069)	-0.327 (-1.178)
Extension contact	-0.021 (-0.048)	-0.128 (-0.442)	-0.128 (-0.283)	0.462 (1.878)
Access to farm credit	-0.254 (0.565)	0.916 (3.016)***	1.622 (3.443)***	0.669 (2.688)**
Rural-Urban Migration	-0.111 (-1.196)	-0.182 (-0.424)**	0.155 (1.588)	-0.045 (-0.846)
Number of months of peak labour	0.135 (0.607)	0.266 (1.936)	0.448 (2.128)**	0.482 (4.307)***
Membership of cooperative society	1.816 (3.002)**	0.266 (1.936)	-2.810 (-6.053)***	0.542 (2.145)**
R	0.646***	0.586***	0.499***	0.577***
R^2	0.317	0.434	0.249	0.342

Source: Field Survey.
Figures in parenthesis are t -values

CONCLUSION AND RECOMMENDATION

The study concludes that respondents were absent from farm for 3 days in a month due to ill health. Since ill health led to farmer been absent from farm for 12% of their labour days, the study concludes that greater labour would be available for rice production and processing if rural health-care was improved. Despite the on-going Federal Government Loan Scheme for rice production, majority of the respondents did not have access to agricultural credit which may be attributed to their inability to form co-operative organisation. The study therefore recommends that rice farmers should join cooperative societies while extension agents should increase their contact with farmers.

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INFLUENCE OF USAGE OF ICT FACILITIES ON RURAL HOUSEHOLDS' FOOD SECURITY IN SOUTHWEST, NIGERIA

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ABSTRACT
Smallholding farms are characterized by low-income generation, small land size utilisation, lack of proper inputs and lack of access to Information and Communication Technology (ICT) facilities. This study assessed the influence of usage of ICT facilities for accessing livelihood-related information on rural households' food security in Ondo and Oyo States. A multi-stage sampling technique was employed to select 329 respondents from the States through structured interview schedule. The data of the study were analysed using descriptive statistics and Correlation (PPMC). The results shows that male was more involved in farming activities than female in both states (73.4%, 72.3%), with the mean age of 53±36.32 and 43±27.12 years of Ondo and Oyo households' head respectively. Input availability accessed was most frequently in Oyo State than Ondo State. Extent of accessing the livelihood-related information with available ICT in Ondo (WMS=27.85) was higher than that of Oyo (WMS=20.47). Majority of households (85.8% in Oyo, and 89.9% in Ondo) States were food secured. PPMC analysis indicated that the extent of usage of ICT facilities for accessing livelihood (r=0.200; p=0.000) significantly influenced households' food security level. It was concluded that most of the households that were food secured often sought information more in the area of input availability, input price and time of planting, and therefore recommends that information on these areas should be made accessible to the rural households.
Keywords: ICT, Rural, Households, Food security

INTRODUCTION

Food security is the access to enough food by people at all times, that can make them active, healthy at a minimum cost (Adetiloye, 2012). FAO (2010) refers to food insecurity as the consequences of inadequate consumption of nutritious food. Abdulrahaman (2013), Abu (2012), Adebayo (2010) and Adeniyi et al. (2009) confirmed the existence of food insecurity in Nigeria. World Bank (2008) confirmed that about three quarter of every poor individual reside in remote communities. However, causes of the insufficient food crisis remain a subject of debate among scholars: low budgetary allocation agric. sector (Abdulrahaman, 2013); poor agricultural policies and programs and the ways and procedures on how agricultural loans are disbursed (Iwuchukwu and Igbokwe, 2011 and Adeniyi et al., 2009) as well as inadequate access to sufficient technologies. Information and Communication Technologies (ICTs) have significant potential to solve these shortcomings by providing cost-effective communication that allows farmers to take advantage of previously untapped trade opportunities and to learn about previously unknown innovative practices. Orbunde (2010) identified communication as an indispensable technologies in Agricultural marketing information system. Moreover, communication is viewed more extensively as an awareness creation about a product or an ideas (Yahaya, 2008). In the same vein, communication is the means of sharing view point, information, ideas, and attitudes among individuals and groups (Ineji, 2003). This study therefore focused on the influence of usage of ICT facilities on rural households' food security in Southwest, Nigeria, to describe the socioeconomic characteristics of the respondents in the study area, to identify livelihood related information accessed using ICT facilities; to determine extent of usage of ICT facilities in obtaining livelihood related information and to determine household food security level in the study area.

The hypothesis of the study was stated that there is no significant relationship between the extent of ICT facilities usage by the respondents and household food security level.

METHODOLOGY
Study area and population of the study

The study was carried out in Oyo and Ondo States in Southwestern geopolitical Zone of Nigeria. Population of this study involved all the rural dwellers in Southwest of Nigeria. This includes all men and women in the rural communities in Southwest geopolitical zone of Nigeria.

A multi-stage sampling procedure was employed in the selection of respondents. The first stage involved random selection of 50% of the agricultural zones from Oyo and Ondo state. Purposive sampling technique was used in the

selection of 2 blocks from the selected zones which are known to be rural in nature. Thereafter, there was random selection of two (2) agricultural blocks from each of the selected states. The list of the number of the farming households in each of the selected cells were secured from the ADP section of the respective local government areas of the selected cells. Three hundred and twenty nine (329) respondents were sampled.

A well-structured interview schedule was used to obtain the necessary data. Descriptive statistics (frequency count, percentage, mean, and Standard deviation) and inferential statistic (Pearson's Product Moment Correlation (PPMC)

was used to evaluate the influence of usage of ICT facilities on households' food security level).

RESULTS AND DISCUSSION
Socioeconomic characteristics
Age of the household heads
The result in Table 1 shows the distribution of household heads by age.The mean age of the household heads from household heads was 43 years. This finding is in line with the report of Umen *et al.* (2013) which pointed out that many rural dwellers are still in their active and energetic ages and still find pleasure in agricultural activities.

Table 1: Distribution of household heads by Age

Age (Years)	Frequency	Percentage
Less or equal to 30	49	14.9
31-40	46	14.0
41-50	88	26.7
51-60	73	22.2
Above 60	73	22.2
Total	329	100.0

Mean: 43

Sex of the household heads
Figure 1 revealed that 73.0 percent of the household heads were male while 27.0 percent of the household heads are female. The result therefore implies that male was more involved in farming activities than their female counterpart.

This finding also collaborates the observations of some researchers that most rural farming households are mostly male which have the required strength and pleasure to carry out farming activities (Umen *et al.*, 2013).

Figure 1: Bar chart showing the distribution of the household heads according to their sex in South West, Nigeria

Livelihood related information accessed using ICT facilities by household heads
Result presented in Table 2 shows ranking order of household heads by livelihood related information accessed using ICT facilities. Input availability was ranked highest among livelihood related information accessed using ICT facilities in the study area with weighted mean score (wms) of 2.61. This is closely followed by information on input prices with wms of 2.28. Other livelihood related information accessed using ICT facilities in

their rank order include appropriate time of planting (wms=2.19), market price of farm produces (wms=2.16), access to market (wms=2.14), days of meeting with extension agents (wms=1.97), farmers' association meeting (wms=1.88), government services (wms=1.88), financial services (wms=1.62), weather information (wms=1.59), labour sources (wms=1.56), pest and diseases control (wms=1.54) and means of land acquisition (wms=1.48) and (wms=1.17).Agbamu (2006) opined that information is the first and

indispensable step of an adoption process. Adefuye and Adedoyin (1993) suggested that for a steady flow of accurate understandable and factual

agricultural progress, farmers must know, and act in accordance to agricultural information.

Table 2: Distribution of household heads by Livelihood related information accessed using ICT facilities

Livelihood related information accessed using ICT facilities	Pooled WMS	Rank
Input availability	**2.61**	**1st**
Weather information	1.59	10th
Pest and disease control	1.54	12th
Days of meeting with extension agents	1.97	6th
Means of land acquisition	1.17	13th
Government services	1.88	7th
Access to market	2.14	5th
Input prices	2.28	2nd
Market price information	2.16	4th
Financial services	1.62	9th
Farmers' association meeting	1.88	7th
Labour sources	1.56	11th
Appropriate time of planting	**2.19**	**3rd**

WMS=Weighted Mean Score

Extent of usage of ICT facilities for obtaining livelihood related information

Table 3 presents the distribution of household heads by extent of usage of ICT facilities for obtaining livelihood related information. Based on the result in the Table 3, mobile GSM was the most widely used ICT facility to access related information in the study areawith weighted mean score (wms) of 2.70. This was followed by radio and posters with wms of 1.72. Other ICT facilities in rank order of usage for obtaining livelihood related information include television (wms=1.65), internet (wms=0.67), newspapers (wms=0.57), bulletin (wms=0.50),

camera (wms=0.38) and multimedia projector (wms=0.37).It was therefore revealed that the types of ICTs mostly used by most household heads to process, disseminate, receive information (for obtaining livelihood related information) and innovate include: mobile GSM, radio, television, posters, newspapers and internet. This is in agreement with the findings of Salau and Saingbe (2008) who reported that extension workers in Nasarawa state had high access to radio, television and mobile phone, while fewer (49%) had access to computers, which they regarded as key to all ICT facilities.

Table 3: Distribution of household heads by extent of usage of ICT facilities for obtaining livelihood related information

ICT facilities	Ondo state WMS	Rank	Oyo state WMS	Rank	Pooled WMS	Rank
Radio	2.74	2nd	2.64	1st	1.72	2nd
Television	2.14	3rd	1.00	3rd	1.65	4th
Newspapers	0.77	6th	0.29	6th	0.57	6th
Bulletin	0.78	5th	0.14	9th	0.50	7th
Internet	0.74	7th	0.57	4th	0.67	5th
Camera	0.47	9th	0.26	7th	0.38	8th
Mobile GSM	2.75	1st	0.35	5th	2.70	1st
Posters	1.14	4th	2.49	2nd	1.72	2nd
Multimedia projector	0.51	8th	0.23	8th	0.37	9th

WMS=Weighted Mean Score

Household heads by food security level

The result in the Figure 2 presents the distribution of household heads based on food security level. Based on the distribution, about 31.3 percent of respondents in South West, Nigeria were purely food secure while about 56.8 percent were

moderately food secure. However, only about 11.9 percent in South West, Nigeria were food insecure. The result therefore proved that majority of the household heads in the study area were food secure.
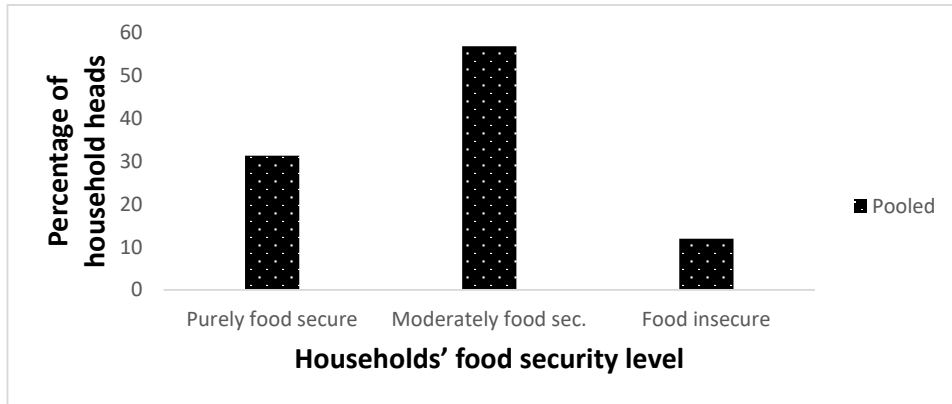
Figure 2: Bar chart showing the distribution of household heads by households' food security level (Mean=4.63; Std.=4.693)

Relationship between extent of usage of ICT facilities for obtaining livelihood related information and households' food security level

The result of the Pearson's Products Moment Correlation (PPMC) analysis in Table 3.4 indicated that extent of usage of ICT facilities for accessing livelihood related information (r=0.200; p=0.000) was significantly related with households' food security level. Extent of usage of ICT facilities for accessing livelihood related information had a positive and significant relationship with food security level at 1% significant level, implying that the probability of food security increases with increase in extent of usage of ICT facilities for obtaining livelihood related information. The more accessible ICT facilities are, the more they are likely to be frequently utilised especially in accessing livelihood related information.

Table 4: Relationship between extent of usage of ICT facilities for obtaining livelihood related information and households' food security level

Variable	r- value	P-value	Remarks
Extent of usage of ICT	0.200***	0.000	S

S=Significant
***=Significant at 1% level

CONCLUSION AND RECOMMENDATION

It was concluded that most of the households that were food secured often sought information more in the area of input availability, input price and time of planting. It was therefore recommended that information on these areas (input availability, input price and time of planting) should be made accessible to the rural households so as to increase their level of production and thus enhance households' food security level.

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EFFECTS OF NIGERIA EROSION AND WATERSHED MANAGEMENT PROJECT (NEWMAP) ON THE OUTPUT AND INCOME OF PARTICIPATING FARMERS IN DELTA STATE, NIGERIA

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ABSTRACT
The Nigeria Erosion and Watershed Management Project implemented Climate Change Adaptation Project in Delta State. Research was conducted to assess the effects of the project on farmers' output and income. A multistage sampling procedure was employed to select 240 farmers. Frequency counts, percentages, mean scores and Z-test were used to analyse the primary data and test the null hypotheses. Result shows that the farmers participated actively in consultation meetings ($\bar{X}$=3.16), demo-plots establishment and management ($\bar{X}$=3.33) and capacity building on improved agronomic practices ($\bar{X}$=2.93). Mean yields of farmers improved from 8.396, 13.521 and 9.625 to 13.387, 15.479 and 11.365 for maize, cassava and yams respectively. The null hypotheses tested at 5% level of significance were rejected since (Z-cal 2.160 > Z-tab 2.096 and Z-cal 2.002 > Z-tab 1.960) for output and income respectively. The study had shown that active participation of farmers in the project activities led to increased output and income. Scaling up of the project in other communities and increasing the number of participants were recommended.
Keywords: NEWMAP, Farmers' income, Farmers' output, Delta State, Nigeria

INTRODUCTION

Nigeria Erosion and Watershed Management Project (NEWMAP) was implemented by Nigerian government and financed by the World Bank (WB), Global Environment Facility (GEF), the Special Climate Change Fund (SCCF), Federal and State Governments of Nigeria. The project started with seven and eventually scaled up to twenty one (21) States. Abia, Anambra, Cross River, Ebonyi, Edo, Enugu, Imo, Delta, Kogi, Oyo, Plateau, Katsina, Gombe and Sokoto States participated. The project aimed to reduce vulnerability to erosion, flood and other environmental hazards. It lasted for eight years and involved ministries, departments and agencies (NEWMAP, 2012a).

The project was implemented by the Federal Ministry of Environment. Participating states, local governments, communities and Civil Society Organisations (CSOs) were involved in the project activities; involving Ministries, Departments and Agencies which undertake such tasks like water resources management, public works, agriculture, regional and town planning, earth and natural resources management, disaster risk management and other related environmental protection and management institutions (NEWMAP, 2012 Project Implementation Manual PIM).

In Delta State of Nigeria, Climate Change Adaptation Project was implemented for a period of two years (April 2020- March 2022) in Ukwunzu and Obomkpa communities as part of the consultancy services under livelihood component of the project among other activities. The project was funded by Special Climate Change Fund and supervised by Natural Resources desk office of Delta NEWMAP. A chief consultant who was an Agricultural extension, rural sociologist and development specialist was engaged to implement the project. Other Agricultural graduates (specialists) were engaged to work with the Chief Consultant. Delta State Ministries of Environment and Agriculture, Delta State Agricultural Development Programme (ADP) as well as Delta State NEWMAP focal Non-governmental Organisations (NGO) and Community Based Organisations (CBOs) were involved in the project implementation. Community Driven Development Approach (CDDA) as well as Participatory Rural Appraisal (PRA) were used to engage the community members through Bottom-to-top approach.

There seems to exist dearth of knowledge on the effects of Delta State NEWMAP Climate change adaptation project on its beneficiaries despite huge amount of fund spent in the implementation of the project in the area. Thus, this study was undertaken to assess the effects of NEWMAP on the output and income of farmers who participated actively in the implementation of climate change adaptation project under Nigeria Erosion and Watershed Management Project in Delta State, Nigeria.

The broad objective of this study was to examine the effects of NEWMAP on the output and income of farmers' beneficiaries of climate change adaptation project in Delta State, Nigeria. The specific objectives were to:

(i) determine the level of participation of the respondents in the Project's activities; and

(ii) examine the difference in farm output (major crops) and income of beneficiaries before and after participating in the project.

Two null hypotheses tested in this study include:

$H_0$1: There is no significant difference in output of the respondents before and after participating in the

implementation of NEWMAP Climatic Change Adaptation Project (CCAP).

H_02: There is no significant difference in income of the respondents before and after participating in the implementation of NEWMAP Climatic Change Adaptation Project (CCAP).

METHODOLOGY

This study was carried out in Delta State located in South-South geopolitical zone of Nigeria. A multistage sampling procedure was employed to select 240 farmers that is 120 per community. In each community, six (6) quarters (villages) were selected. Twenty (20) farmers who participated in the project activities from April 2020 to April 2022 were randomly selected to make a total of 120 farmers per community. Descriptive and inferential statistics such as percentages, frequency counts and mean scores

were used to analyse the primary data collected with the aid of questionnaire and interview schedule. The null hypotheses were tested at 5% level of significance using Z-test.

RESULTS AND DISCUSSION

Participation of respondents in implementation of CCAP activities

Result of participation of respondents in CCAP activities are shown in Table 1.

Result show that respondents participated in the following project activities: Consultation meetings ($\bar{X}$=3.16), demo-plots establishment and management ($\bar{X}$=3.33), capacity building trainings ($\bar{X}$=2.93), green field days ($\bar{X}$=3.15), brown field days ($\bar{X}$=3.45), harvesting and marketing of farm produce ($\bar{X}$=2.87) and routine field visit schedules ($\bar{X}$=2.59) among others.

Table 1: Level of Participation of Farmers in the Implementation of Climate Change Adaptation Project (CCAP) in Delta State, Nigeria.

S/N	Level of Participation	Ukwu-nzu ($\bar{X}$)	Remarks	Obomkpa ($\bar{X}$)	Remark	Mean ($\bar{X}$)	Remarks
(i)	Consultation meetings	3.10 HP		3.22 HP		3.16	HP
(ii)	Demo-plots Establishment and management	3.25 HP		3.41 HP		3.33	HP
(iii)	Capacity building trainings	2.91 HP		2.94 HP		2.93	HP
(iv)	Green field days	3.08 HP		3.21 HP		3.15	HP
(v)	Brown field days	3.40 HP		3.50 HP		3.45	HP
(vi)	Bole hole drilling	1.17 LP		1.92 LP		1.55	LP
(vii)	Installation of solar facilities	1.32 LP		1.50 LP		1.41	LP
(viii)	Reticulation of water	1.72 LP		1.60 LP		1.66	LP
(ix)	Installation of drip irrigation facilities	1.48 LP		1.51 LP		1.49	LP
(x)	Harvesting and marketing of produce	2.91 HP		2.83 HP		2.87	HP
(xi)	Routine field visit schedules	2.61 HP		2.56 HP		2.59	HP
	Mean ($\bar{X}$)	**2.45**		**2.56**			

Source: Computed from Field Data, 2022
Keys: HP=High participation=above 2.05
LP=Low participation=below 2.05

Farm Output of Beneficiaries before and after Implementation of Project

The farm output (crops) of the beneficiaries was obtained and compared. The result is presented in Table 3: The result showed

that the mean yield before and after the project were 8.396, 13.521, 9.625 and 13.387; 15.479, 11.365 for maize, cassava and yam respectively. The result above indicated a gradual shift in yield after implementation of the project.

Table 2: Farm Output of the Respondents before and after Implementation of Project

Crops	MT/Ha	Before After	Before After	Average Mean ($\bar{X}$)
Maize	1.0-5.0	28 23.3 20 16.7	36 30.00 31 25.83	
	6.0-10.0	47 39.2 53 44.2	46 38.33 47 39.17	
	11.0-15.0	45 37.5 47 39.2	38 31.67 42 35.00	Before After
Mean ($\bar{X}$)		**8.708 9.158**	**8.083 8.458**	**8.396 13.387**
Cassava	1.0-5.0	32 26.67 15 12.50	22 18.33 20 16.67	
	6.0-10.0	43 35.83 41 34.17	51 42.50 46 38.33	
	11.0-15.0	38 31.67 54 45.00	39 32.50 39 32.50	
	Above 15.0	7 5.83 10 8.33	8 6.67 15 12.50	

Mean ($\bar{X}$)		**8.833 10.458**	**9.375 10.042**		**13.521 15.479**
Yam	1.0-5.0	65 54.17 25.20.83	47 39.17 20 16.66		
	6.0-10.0	36 30.00 79 65.83	48 40.00 64 53.33		
	11.15.0	19 15.83 16 13.33	25 20.83 36 30.00		
Mean ($\bar{X}$)		**6.083 7.625**	**7.083 7.475**		**9.625 11.365**

Source: Computed from Field Survey Data, 2022

The result in Table 3 shows that 56.25%, 40.41% and 3.33% were in lowest, middle and highest income range before the project. After the project, 9.58%, 41.25% and 49.16% were in the lowest, middle and highest income range. This indicates a gradual shift in income earning potentials of the respondents as majority (56.25%) who were in the lowest class before the project were transited to the highest class after the project (49.16%).

Table 3: Annual Income of Respondents before and after Implementation of Project

Income Range before (₦)	F %	Income Range after (₦)	F %
100, 000 - 200,000	75 31.25	100, 000 – 200,000	6 2.50
201, 000 - 400,000	60 25.00	201, 000 - 400,000	17 7.08
401,000 - 600,000	53 22.08	401,000 - 600,000	20 8.33
601,000-800,00	44 18.33	601,000-800,00	79 32.92
801,000 - 1,000,000	5 2.08	801,000 - 1,000,000	65 27.08
Above 1,000,000	3 1.25	Above 1,000,000	53 22.08
	240 100		240 100

Source: Field Survey Data, 2022

The result showed that the calculated test result (2.160) was greater than the test value tabulated (2.096) at p ≤ 0.05, we reject the null hypothesis and accept the alternative.

Table 4: Test of significant difference in the mean farm output of respondents before and after implementation of Project.

Variables	Mean	Standard deviation	Standard Error Mean	T-value
Mean output of respondents after implementation of CCAP	10, 417.21	73,106.22	16, 771.72	
Mean output of respondents before implementation of CCAP	18,567.50	39,238.79	9,001.99	
Difference	8, 150.29	33,867.43	7,769.73	2.096**

Source: Computed by the Author from Field Survey Data, 2022.
*** Significant of at ≤ 0.05
Tabulated value (2-tails) at 5%=2.160

The result showed there was significant difference (Z=2.002) in the mean income of respondents before and after participation at P<0.05.

Table 5: Test of significant difference in the mean annual income of respondents before and after implementation of Project.

Variables	Mean	Standard deviation	Standard Error Mean	T-value
Mean annual income of respondents after implementation of CCAP	261,689.30	274, 345.65	16,395.29	
Mean annual income of respondents before implementation of CCAP	240,135.36	123,948.48	3,703.67	
Difference	**21,553.94**	**150, 397.17**	**12, 691.62**	**2.002****

Source: Computed by the Author from Field Survey Data, 2022.
*** Significant of at ≤ 0.05

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RURAL HOUSEHOLDS' PERCEPTION OF AFRICAN YAM BEAN UTILISATION IN EKITI STATE, NIGERIA

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ABSTRACT
The study assessed the rural household's perception towards of the African Yam Bean (*Sphenostylis stenocarpa*) utilisation in Ekiti state, Nigeria. Specific objectives include describe socioeconomic characteristics rural household in the study area; utilisation among rural households; examination of the cultivation and utilisation of African yam bean in the study area; and constraints to African yam bean cultivation and utilisation in the study area. Multistage sampling procedure was used to select one hundred and twenty respondents. Data collected using structured interview schedule were analysed using descriptive statistical techniques. The results revealed majority (90%) had high perception towards African yam bean utilisation, however, majority are no more cultivating it. Prolong cooking time, odor during cooking and hardness of the seed coat were the major constraints to its utilisation. It was concluded that rural households have high perception towards utilisation of African yam bean though the utilisation status is declining. Extension personnel should create awareness on the nutritional and health benefits of the crop to alleviate poverty among rural dwellers.
Keywords: African yam bean, Awareness, Perception, Household, Utilisation

INTRODUCTION

African Yam Bean (AYB) (*Sphenostylis stenocarpa*) like other tuberous legumes (e.g*., Pachyrhizus spp.*) belongs to the Fabaceae family (George, Obilana, and Oyeyinka 2020). It is an under-exploited annual leguminous plant grown extensively in all parts of Africa except in North Africa (Oagile 2005; Enujiugha *et al.* 2012 and Uchegbu 2015). It is a vigorously climbing herbaceous vine whose height can reach beyond 3.0 meters depending on the height of the stakes and cultivar used (Adewale and Odoh 2013; Bolaji,(2021)). Seeds are consumed in various forms; it can be processed to cookies and snacks (Idowu, 2014) Igbabul, *et al.*, 2015), yoghurt (Amakoromo, *et al.* 2012), composited with rice as meal (Iwe *et al*. 2016) and the flour is also used to enrich fufu from cassava (Aniedu and Aniedu 2014). . The seed is rich in both essential and non-essential amino acids including lysine, methionine, histidine, arginine, aspartic acid, glycine, alanine, valine, and phenylalanine at levels higher than most mainstream legumes such as soybean, pigeon pea, cowpea, and bambara groundnut (Norman and Cunningham 2006).

Despite the nutritional value and other importance of AYB, its cultivation and utilisation are still low. Critically, the extent of utilisation of the crop in rural and urban setting of Nigeria is unknown. This has necessitated the present investigation. Therefore, the study seeks to assess the perception of rural household of African Yam Bean cultivation and utilisation. The specific objectives are to: describe socioeconomic characteristics of rural household in the study area; examine reasons for utilisation of African yam bean in the study area; and examine the constraints to African yam bean cultivation and utilisation in the study area.

METHODOLOGY

The study was conducted in Ikole-Ekiti Local Government Area, Ekiti State, Nigeria in year 2021. Two stage sampling techniques was used to select the respondents for this study. The first stage involved the purposive selection of six rural communities in Ikole Ekiti local government area. The second stage involved the random selection of 20 rural households from each of the rural communities, making a total of 120 respondents. Data were collected with an interview schedule. Data were analysed using descriptive statistical such as frequency, percentage, mean, standard deviation. Focus Group Discussion was carried out in 3 rural communities in the study area to identify constraints to utilisation of African yam bean.

RESULTS AND DISCUSSION
Socioeconomic characteristics

In Table 1, the mean age of the respondents was 55±10.2 years which implies that majority of the respondents were in their productive age. The finding is in line with Iwuchukwu, et.al, (2017) report that age is considered as an important variable in agriculture because of its influence on farmers' productivity, attitude, skill, aspiration and adoption of technologies. Majority (76.7%) of the respondents were male, which indicate that men in rural households dominate the cultivation of African yam bean. Most (80.8%) of the respondents were married. This might be as a result of the respect accorded married people in our society and it is generally believed that women usually help men in farming activities. Furthermore, respondents have an average household size of 6 persons. Majority (85%) of the respondents had one form of

education or the other. This high level of literacy is expected to influence the respondent`s perception on the utilisation of African yam bean. Literacy also enhances capacity of farmers to be responsive to the dissemination of information and acceptance of innovations.

Table 1: Distribution of respondent's socioeconomic characteristics

Variables	Frequency	Percentage	Mean/STD
Age(years)			
≤ 25	1	0.8	
26-50	40	33.3	55(15.8)
≤51	79	65.8	
Sex			
Male	92	76.7	
Female	28	23.3	
Household size			
≤ 5	48	40.0	
6-10	70	58.3	
≥11	2	1.7	
Level of education			
Never attended school	17	14.2	
Primary School	70	58.3	6(2.1)
Secondary school	20	16.7	
Tertiary education	11	9.2	
Adult education	2	1.7	

African yam bean utilisation by preference

The results in Table 5 shows that majority (80.8%) of rural household did not utilise African yam bean as green manure This implies that African yam bean was not recognized as green manure for utilisation in the study area. The result in Table 5 also above average (52.5%) of the rural household moderately utilised AYB as cover crop. Furthermore, African yam bean was highly utilised as natural fertilizers by 59.2% of the rural household. This implies that rural household utilised African yam bean as natural fertilizers which helps to fix nitrogen in the soil. All the rural household interviewed (100%) did not utilise it as ornamental crop. African yam bean was highly utilised as medicine by 98.3% of the rural household. This is an indication that AYB are used for consumption, building up soil fertility and medicinal purposes. This finding corroborates the findings of Gbenga-Fabusiwa 2021 who find out that AYB plants products are very rich in protein, minerals and antioxidants with low glycemic index. Furthermore

Table 3: Distribution of respondent according to African yam bean utilisation by preference

Utilisation of African yam bean by preference	Not utilised Frequency F (%)	Moderately utilised Frequency (%)	Highly Utilised Frequency (%)
Food	0(0.0)	6(5.0)	114(95.0)
Green manure	97(80.8)	19(15.)	4(3.3)
Cover crop	(24(20)	63(52.5)	33(27.5)
Natural fertilizer	34(28.3)	15(12.5)	71(59.2)
Ornament for decoration	9120(100)	0(0.0)	0(0.0)
Medicine	0(0.0)	2(1.7))	118(98.3)

Source: Field survey, 2021

Perception of Rural Household towards African Yam Bean cultivation and utilisation

The result in Table 5 shows that the mean (3.42) was used to determine the respondent's perception. Therefore, value greater than or equal to 3.42 is high and any mean less than 3.42 is low. The results were discussed based on descending order of ranking. Rural households had high perception of AYB health benefit (mean=4.98) which implies that the rural household knows that the crop has health benefit. The rural households also had high perception that AYB is good for elderly person because of its medicinal value (mean=4.95). Furthermore, the rural households had high perception that AYB fills stomach when eaten and sustain hunger (mean=4.90). The rural household also had high perception that AYB prolong cooking time discourage people from buying it (mean=4.82) which implies that they had high perception on prolong cooking of African yam bean which discourage people from buying it. Interestingly, the rural households had high

perception that the production of the crop is dwindling (mean=4.52) which implies that they believed AYB production dwindling. The respondents added that the price of AYB depends on season of its cultivation. They had high perception that AYB is not readily available in major market in recent time (mean=3.78) which implies that the rural household believed that the beans are now scare in major market. However, the rural households also had low perception that the crop is a poor man`s food (mean=2.55) which implies that they had high perception on AYB that it is a not poor man`s food, they added that a crop that is capable of providing the required essential nutrient to the body for poor and rich people. The rural households had low perception that AYB are not as sweet as other bean so it does command higher market value (mean=2.20) which implies that AYB is sweet compared to other bean family. Moreover, majority (67.1%) had high perception of AYB utilisation while 32.9% had low perception

Table 4: Distribution of Respondents According to Their Perception towards African Yam Bean

Perception statement	Mean	Rating
The crop has health benefit	4.98	High
It is good for elderly person because it contains medicinal value	4.95	High
The crop fills and sustains hunger	4.90	High
The crop is environmentally friendly	4.87	High
Prolong cooking time discourage people from buying it.	4.82	High
Prolong cooking time discourage people from utilising it.	4.79	High
The production of the crop is dwindling	4.52	High
The crop is readily available in local market	4.46	High
Prolong cooking time discourage people from planting it.	4.04	High
African yam bean is not readily available in major market	3.78	High
The seed of the crop is cheap to buy	3.40	low
The bean are not sweet as other beans so does not command attraction from people	2.79	low
African yam bean is a poor man`s food	2.55	low
The bean are not sweet as other beans so does not command higher market value	2.20	low

Grand mean 3.42

Constraints to African yam bean utilisation

A respondent from Odo-Oro reported: *'The hardness of the seed coat which leads to prolong cooking is the most prominent limitation to the* utilis*ation of this crop"*. This corroborates with the findings of Adewale and Odoh (2013). This implies that processing the seed of AYB to meal requires long cooking time because of the hard seed coat. This problem has restricted the use among the consuming populace and households. . It seems this is one of the major reasons why the utilisation status is declining.

Suggestion was made from the participant that soaking of the bean for a while prior to cooking can reduce prolong cooking time. A respondent from Oke- Ayedun said that *"Unpleasant odour during cooking and the mouth odour after eating is also a constraint to the* utilis*ation of African yam bean which cause them to neglect the* utilis*ation of the bean and that if its being cooked in a household the odour will be perceived in the next household"*. To some people the odour which emanates during cooking is unappealing to some people, to such people, consumption of African yam bean may not be a primary option and such individuals would prefer another legume as substitute.

CONCLUSION AND RECOMMENDATIONS

Rural households in the study area have a have high perception towards the utilisation of African yam bean. Despite majority of the household were utilising AYB for different purposes in the past, but utilisation has decline greatly in recent time probably because of some of its unappealing constraints such as the hardness of the seed coat which leads to prolong cooking and odour which emanates during cooking. Adequate research efforts should be put in place towards breeding for a soft coat variety of the crop that will be easy to cook and reduction in cooking time. Extension system should also create awareness not only on the nutritional and health benefits of the crop but also the nitrogen fixing capacity of the crop for soil nutrient improvement.

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FARMING HOUSEHOLDS' VULNERABILITY TO LIVELIHOOD INSECURITY IN URBAN AND RURAL AREAS OF EKITI STATE

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ABSTRACT

The Agricultural sector faces many constraints resulting to farmers' vulnerability to livelihood insecurity. The study investigated farming households' vulnerability to livelihood insecurity in urban and rural areas of Ekiti, using Ado and Ido/Osi farming households as case study. A total of 201 and 135 farming households were randomly selected from Ado and Ido/Osi giving a total of 336 respondents. Primary data of livelihood vulnerability index were collected with the aid of questionnaire. Data were described using mean and standard deviation. Based on the mean score of livelihood insecurity, drought ($\bar{x}$=2.35; 2.13) an indicator under climate change was ranked first in both urban and rural areas. Under biological hazards, cattle attack ($\bar{x}$=2.13) was ranked first in urban, and kidnapping ($\bar{x}$=2.68) was ranked first in rural area. The study concluded that livelihood of both urban and rural areas is exposed to various insecurities. This ranges from climate change, biological hazards, socio-infrastructure, economic and political insecurity, with higher impact in the rural areas. Therefore, collective efforts which comprise of individual, community, government and different stakeholders need to be geared up to brace all forms of insecurity affecting livelihood of both urban and rural farming household.

INTRODUCTION

Agricultural sector interacts with the environment, have direct reliance on natural resources for production, fundamental to livelihood of over 2.5billion people worldwide and its significance for development require urgent action to build more resilient agricultural systems (Food and Agriculture Organisation, FAO, 2021). Nigeria is majorly an agrarian country with 70% of the population employed in the agricultural sector (Muhammad, Salau and Olawusi, 2015), diversifying into production, manufacturing, sales, services and enterprise (Bamigboye, Adeniji, Ogunjimi and Adara, 2021). With the increasing population trend of 206.1 million people in 2020 (World Bank, 2021) expected to reach 400million by 2050, there is need to increase agricultural productivity through improved technologies and innovations to ensure food security and nutrition (Food and Agriculture Organisation, FAO, 2022).There is need for expansion of agricultural land, more production gain for current resources to tackle increased food demand as a result of rapid increasing populations (Fitton, et al., 2019).

Vulnerability has many dimensions (Sujakhu, et al., 2018) with multiple measures to its concept. Birkmann and Wisner (2006) defined vulnerability as an individual or group diminished capacity to cope with, resist and recover from the impact of a natural or man-made hazard. Vulnerability as defined by Turner, et al., (2003) is the degree to which a system, sub-system, its component is likely to experience harm due to exposure to a hazard (partubation/stress/stressor). Vulnerability according to this study is the inability of a person or group of persons to build resilience to any form of insecurity challenging their livelihood.

Despite the contribution of agricultural sector to Nigerian economy, it still faces poor land tenure system, climate change, high production cost, poor distribution of inputs due to inadequate transportation, limited capital, high pre and post-harvest losses, poor access to market (FAO,2021) making farmers vulnerable to livelihood insecurity of farmers. Sujakhu, et al., (2018) assessed livelihood vulnerability, however, classified into four categories- very highly vulnerable, highly vulnerable, moderately vulnerable and least vulnerable. This study identified main factors that defined the vulnerability of households and communities to include exposure to climate change variability, biological hazards, socio-infrastructural, economic and political.

METHODOLOGY

Ado and Ido/Osi farming households were purposively selected as Urban and rural areas of Ekiti State. Ado Ekiti was purposively selected as the urban area is the capital of Ekiti State, a one town Local Government has many farming households (Ekiti State Government, 2021) such as Igirigiri, Ago Aduloju, Igbo Aso, Aso Ayegunle, Oke Osun, Emirin, Temidire, Ureje, etc. Farming households in Ido-Osi Local Government Area was purposely selected as the rural area has a

government-owned farm settlement in Orin-Ekiti and close to Ero Dam. A total of 201 and 135 farming households were randomly selected from Ado and Ido/Osi giving a total of 336 respondents. Primary data were collected with the aid of questionnaire from household heads. The livelihood vulnerability index in this study was highly vulnerable, moderately vulnerable and invulnerable.

RESULT AND DISCUSSIONS
Characteristics of farming household head

In summarizing the socioeconomic characteristics of the farming household, findings revealed that the mean age of household head in urban and rural areas were 47 and 57years respectively. The average year of schooling of respondent is higher in urban (11years) than rural areas (7years). Conversely, Farmers in rural areas had a higher year of experience and household size (25years and 7persons) than farmers in urban (17years and 4persons). And farmers in rural areas cultivate on more expanse of land with average farm size of 4hectares than farmers in urban ($\overline{x}$=2hectares).

Table 1: Farming household Characteristics

Characteristics	Mean ± SD	~	Mean ± SD	~
	Ado - sampled urban LGA		Ido/Osi - sampled rural LGA	
Age (years)	47.20±14.01	47 years	57.15±11.29	57 years
Schooling (years)	10.77±4.80	11 years	6.89±4.58	7 years
Farming Experience (years)	16.58±13.03	17 years	24.96±11.27	25 years
Household size (NOP)	4.11±2.83	4 persons	6.75±3.04	7 persons
Farm size (ha)	1.74±1.37	2 hectares	4.12±4.09	4 hectares

Ha-hectare, LGA- Local Government Area, NOP- Number of Persons, SD-Standard Deviation

Ranking of livelihood insecurity
Based on the mean score of livelihood insecurity, drought ($\overline{x}$=2.35; 2.13) an indicator under climate change was ranked first in both urban and rural areas. Under biological hazards, cattle attack ($\overline{x}$=2.13) was ranked first in urban, and kidnapping ($\overline{x}$=2.68) was ranked first in rural area. High cost of transportation ($\overline{x}$=2.26; 2.13), an indicator under socio-infrastructural was ranked first. Under

economic insecurity, high price ($\overline{x}$=2.54) was ranked first in urban while high wages ($\overline{x}$=2.29) was ranked first in rural areas. Insufficient legal protection ($\overline{x}$=2.41; 2.44), an indicator under political insecurity were both ranked first in the sampled urban and rural areas. Grippingly, farming households in rural areas perceived vulnerability to kidnapping and cattle attack were significantly higher than farming households in urban areas.

Table 2: Ranking of Livelihood Insecurity

	Ado LGA (sampled urban)			Ido/Osi LGA (sampled rural)		
Livelihood insecurity	Mean ± SD	Mean Error	Rank	Mean ± SD	Mean Error	Rank
Climate change						
Drought	2.35±0.848	0.060	1ˢᵗ	2.13±0.853	0.073	1ˢᵗ
Flood	1.82±0.807	0.057	2ⁿᵈ	1.65±0.813	0.070	2ⁿᵈ
Fire outbreak	1.35±0.590	0.042	4ᵗʰ	1.19±0.444	0.038	3ʳᵈ
Poor soil fertility	1.44±0.654	0.046	3ʳᵈ	1.01±0.121	0.010	4ᵗʰ
Biological hazards (Human/animal crisis)						
Pest and Diseases	2.10±0.809	0.057	2ⁿᵈ	2.08±0.890	0.077	3ʳᵈ
Kidnapping	1.72±0.826	0.058	4ᵗʰ	2.68±0.468	0.040	1ˢᵗ
Cattle attack	2.13±0.904	0.064	1ˢᵗ	2.64±0.541	0.047	2ⁿᵈ
Theft	1.94±0.835	0.059	3ʳᵈ	1.19±0.444	0.038	5ᵗʰ
Sickness	1.64±0.737	0.052	5ᵗʰ	1.03±0.170	0.015	6ᵗʰ
Farmers clash	1.37±0.578	0.041	6ᵗʰ	1.34±0.613	0.053	4ᵗʰ
Socio-infrastructural						
Land shortage	1.69±0.827	0.058	3ʳᵈ	1.17±0.433	0.037	3ʳᵈ
Lack of mechanization	2.05±0.882	0.062	2ⁿᵈ	1.84±0.883	0.076	2ⁿᵈ
High cost of transportation	2.26±0.869	0.061	1ˢᵗ	2.13±0.876	0.075	1ˢᵗ
Economic						
High price	2.54±0.685	0.048	1ˢᵗ	2.11±0.895	0.077	2ⁿᵈ
Lack of savings	2.33±0.807	0.057	3ʳᵈ	2.10±0.969	0.083	3ʳᵈ
High wages	2.46±0.781	0.055	2ⁿᵈ	2.29±0.781	0.067	1ˢᵗ

	Ado LGA (sampled urban)			Ido/Osi LGA (sampled rural)		
Livelihood insecurity	Mean ± SD	Mean Error	Rank	Mean ± SD	Mean Error	Rank
Political						
Insufficient legal protection	2.41±0.795	0.056	1st	2.44±0.826	0.071	1st
Corruption	2.18±0.794	0.056	3rd	2.28±0.843	0.073	2nd
Inconsistent government policy	2.35±0.793	0.056	2nd	2.20±0.827	0.071	3rd

CONCLUSION AND RECOMMENDATION

This study investigated the vulnerability of farming household to livelihood insecurity in urban and rural areas. Findings from this study reveal that farming households in rural areas cultivate more expanse of land than urban areas. However, livelihood of both areas is exposed to various insecurity ranging from climate change, biological hazards, socio-infrastructure, economic and political insecurity, with higher impact in the rural areas. Therefore, collective efforts which comprise of individual, community, government and different stakeholders need to be geared up to brace all forms of insecurity affecting livelihood of both urban and rural farming household.

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ASSESSMENT OF FARMERS' PERCEPTION OF PRO-VITAMIN A CASSAVA IN ODEDA LOCAL GOVERNMENT, OGUN STATE, NIGERIA

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ABSTRACT

The study assesses Farmers' perception of pro-vitamin A cassava in Odeda Local Government, Ogun State. A simple random sampling technique was used to select 130 cassava farmers out of the 256 Cassava farmers who had adopted Pro-vitamin A Cassava for planting in the study area as registered by OGADEP. Primary data was collected on the socioeconomic characteristic, knowledge, perceptions and challenges faced by cassava farmers in the adoption of pro-vitamin A cassava. Data were analysed using descriptive statistics, Pearson Product Moment Correlation (PPMC) and chi-square. Results showed that the mean age of the respondents was 50 years. Majority (80.0%) of the cassava farmers were females and married with a mean household size of 7 persons. Above average (67%) of the farmers had primary education and the major source of information was Extension agents (66.9%). Most (63.1%) of the respondents had average knowledge of pro-vitamin A cassava while 36.9% had high knowledge. The majority (64.6%) of the respondents had an unfavourable perception of pro-vitamin A cassava. The challenges faced by the respondents were inadequate knowledge about other products that can be made from yellow root cassava (93.9%), appearance and colour of yellow root cassava products and market availability for yellow root cassava products (71.8%). PPMC revealed a positive and significant relationship (r=0.206, p < 0.05) between farmers' years of experience and farmers' perception of pro-vitamin A cassava. The study concluded that despite the knowledge of all respondents being above average, their perception was unfavourable. Thus, pointing to the risk of discontinuity in the adoption of pro-vitamin A cassava considering their knowledge of its attributes. The study recommends the need for empowerment in the adoption of pro-vitamin A cassava and the creation of a link between cassava farmers and the target market for pro-vitamin A cassava.

Keywords: Cassava, perception, pro-vitamin A, processing, marketing

INTRODUCTION

The consumption and wide use of cassava (Manihot esculenta Crantz) in sub-Saharan African countries have made it gain a reputable stance in its use to limit rural poverty (Agbareyo, Benjamin and Okeke-Sam, 2015). Since its introduction according to Odedina and Adebayo, (2012) cassava has been considered a suitable substitute for other unaffordable calorie-rich products, such as gari, Fufu, Lafun, starch, chips, High-Quality Cassava Flour (HQCF), and others depending on the processing method and geographical distribution. Considering the risks behind the high consumption of cassava products, Olufola (2018) in his Technical Report, explained the dangers behind cyanogenic glycosides content of cassava which when excessively consumed would result in defective eyesight.

The prevalence of vitamin A deficiency in rural areas is of concern to developing countries. This has led to the development of an improved cultivar of cassava called pro-vitamin A cassava to tackle the risks of eye defect, sicknesses, and death caused by this nutrient deficiency as pointed out by Ilona et al. (2017). He further revealed that pro-vitamin A cassava is popularly called "yellow cassava" due to its colour, it is a product of bio-fortification and serves as an alternative source of vitamin A. The study assessed Farmers' perception of pro vitamin a cassava in Odeda Local Government, Ogun State, Nigeria

The specific objectives were to:

1. describes the socioeconomic characteristic of pro-vitamin A cassava farmers.

2. assess respondents' knowledge of the attributes of pro-vitamin A cassava.

3. describe respondents' perceptions of pro-vitamin A cassava.

4. identify the challenges faced by respondents on the adoption of pro-vitamin A cassava.

METHODOLOGY

The study was carried out in Odeda Local Government Area of Ogun State. This local government in Ogun State was purposively selected being the first location for the introduction of pro-vitamin A cassava. The lands are majorly used for agricultural practices. The farmers in this area were also beneficiaries of the pro-vitamin A campaign on Awareness along with the distribution of the cassava stem named "Home Pack". A simple random sampling technique was employed in this study to select a representative sample size of 130 respondents out of the 256 farmers that had adopted Pro-vitamin A Cassava for planting. Primary data was collected using a structured questionnaire. Farmers' knowledge on pro-vitamin A cassava was measured on a two point rating scale

of Agree=2 and Disagree=1. A mean score was generated which was used to Categorize respondents' knowledge into average and high knowledge. Farmers' perceptions on pro-vitamin A cassava were measured on a 5-point Likert type scale of SA=5, A=4, U=3, D=2, SD=1. Twelve statements were generated and scored with the minimum, the average and maximum score of 12, 36, and 60 respectively. A mean score that is greater than 36 means Favourable perception, while respondent with less than 12 has unfavourable perception. Data collected was analysed using descriptive statistics such as frequency count, percentage and mean.

RESULTS AND DISCUSSION
Socioeconomic characteristics
Results on table 1 revealed that majority (80.0%) of the farmers were females. This shows the active role of women in cassava production and

agrees with Ilona *et al*, 2017 who affirmed that women accounted for 75% of the one million adopters of pro-vitamin A cassava. The mean age of respondents was 50years. Majority (80.8%) were married with an average household size of 7 persons. Majority (73%) of the farmers had primary education while few (27%) had only secondary education. The farm size of respondents reveals the majority having less than 2 acres (12 plots). This is a vital aspect of production size.

More so, most of the farmers were well experienced with 42.3% having the range of 46-60 years of farming experience. Thus, this points to the fact that the predominant activities in the study area are farming. Majority (66.9%) of the respondents got information from the Extension agent this calls attention to the role of extension agents in information dissemination as well as the trainers of farmers.

Table 1: Socioeconomic characteristics of respondents (n=130)

Socioeconomic characteristics	Frequency	Percentage (%)	Mean
Sex			-
Male	26	20.0	
Female	104	80.0	
Age			
21-40	34	26.2	40 years
41-60	59	45.4	
>60	37	28.5	
Marital status			-
Married	105	80.8	
Widowed	25	19.2	
Household size			7 persons
3-5	44	33.8	
6-8	66	50.8	
>9	20	15.4	
Education level			
Primary	52	40.0	
Secondary	35	27.0	
No formal education	31	23.8	
Vocational	12	9.2	
Farming experience			30 years
1-15	51	39.2	
16-30	22	16.9	
31-45	1	0.8	
>45	56	42.38	
Farm size(hectares)			
1-4	74	56.9	4hectares
5-8	55	42.3	
9-12	1	0.8	
Sources of information			-
OGADEP	12	9.2	
Extension agent	87	66.9	
Family relations	31	23.8	

Knowledge of the nutritional benefits of pro-vitamin A cassava

Results of respondents' knowledge of the attributes of pro-vitamin A cassava indicates that all (100%) respondents knew of the early maturity,

high root yield, yielding characteristics, drought-tolerant nature of pro-vitamin A cassava and that is not susceptible to diseases. This agreed with Esuma *et al*, (2019)'s position who revealed that majority (72.9%) in their research attribute early maturity as a good attribute of pro-vitamin A among cassava farmers. In opposition to the flour quality of pro-vitamin A cassava, about (50.8%) of the respondents disagreed with reasons attached to the type of processing enterprise each farmer was into as well as taste preference and extended shelf-life giving its inability to stay for long after harvesting at maturity as the justification for their response.

The categorization of respondents based on respondents of knowledge of the attributes of pro-vitamin A cassava (Figure 1) revealed that all respondents to be over the average score of the categorization. However, further categorization revealed that more (63.1%) of the respondents had average knowledge of pro-vitamin A cassava while 36.9% had high knowledge. This implies that all respondents had enough knowledge of the attributes of pro-vitamin A cassava which could have aided its adoption as well as continuity in adoption. This is however in contrast to Esuma's *et al* (2019) report on Uganda, which discussed the need for campaigns to educate respondents of the vitamin A nutritional attribute of Pro-vitamin A cassava.
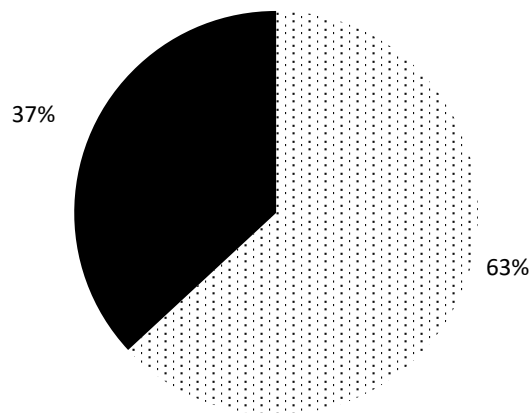
Figure 1: Pie chart showing categorization of respondent's perception

Average knowledge(63.1%)   High knowledge (36.9%)

Perception of respondents of pro-vitamin A cassava

Categorisation of farmers (Figure 2) significantly pointed out that the Majority (64.6%) of the respondents had an unfavourable perception of pro-vitamin A cassava. Meanwhile, the minority took the place of neutral, which is showing a state of indecision, as others (26.9%) had favourable perception of the richness of vitamin A in pro-vitamin A cassava and that the content has health benefit as it helps to prevent blindness in children and infection in reproductive women. Benchoff *et al*, (2018) stated that the yellow colour of the products may have had a bias effect on the perception of novelty by consumers since bio-fortified products that are new are also yellow.
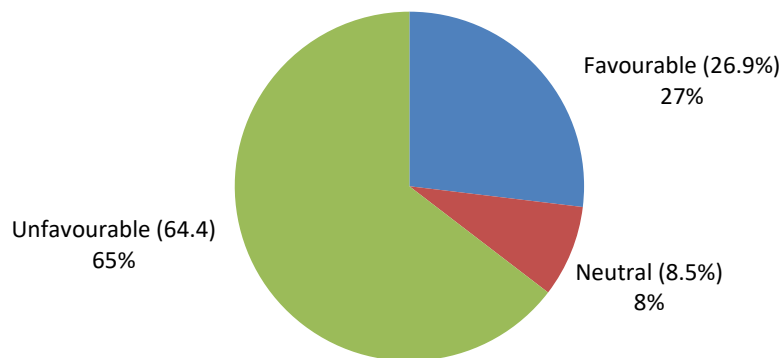
Fig 2: Categorisation of respondents' perceptions

Challenges faced by respondents on the adoption of pro-vitamin A cassava

The various challenges experienced by farmers as reveals in Table 2 indicate that non-acceptance of yellow root cassava products by the consumers with a mean of 4.93 was rank first as a major challenge as it negatively affects the sales and income that were expected from sales, this was closely followed by unavailable market for yellow root cassava products with mean of 4.71 while the least challenges is that the planting of Pro-vitamin A cassava stem is labour-intensive with a mean of 1.41.

Table 2: Challenges faced by respondents

S/N	Challenges	Yes F (%)	No F (%)	mean
1	Pro-vitamin A cassava only produces low- or poor-quality products	98 (73.5)	32 (26.5)	4.08
2	Inadequate information on the potentials of yellow root cassava	110 (84.6)	20 (15.4)	3.85
3	Non-acceptance of yellow root cassava products by the consumers	130 (100)	0 (0.0)	4.93
5	The appearance of yellow root cassava products makes it unattractive to the consumers	96 (73.8)	34 (26.2)	3.97
6	The unavailable market for yellow root cassava products	124 (95.4)	6 (4.6)	4.71
7	The planting of Pro-vitamin A cassava stem is labour-intensive	0 (0.0)	130 (100)	1.41
8	Inadequate knowledge about other products that can be made from yellow root cassava	8 (6.1)	122 (93.9)	1.62
9	Transportation of yellow cassava products to market	0 (0.0)	130 (100)	1.79
10	Poor awareness of pro-vitamin a cassava on media	77 (59.2)	53 (40.8)	4.59

CONCLUSION AND RECOMMENDATION

The study concluded that despite the knowledge of all respondents being above average, their perception was unfavourable. Thus, pointing to the risk of discontinuity in the adoption of pro-vitamin A cassava considering their knowledge of its attributes. The study recommends the creation of a link between cassava farmers and the target market for pro-vitamin A cassava. and active involvement of health clinics, Hospitals, and Non-Governmental Organisations that in the campaign towards health improvement as well as fighting to limit vitamin A deficiency.

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FARMERS' PERCEIVED EFFECTIVENESS OF COMMUNAL CONFLICT MANAGEMENT AND RESOLUTION APPROACHES IN BENUE AND NASARAWA STATES, NORTH-CENTRAL NIGERIA

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ABSTRACT

The study examined farmers' perceived effectiveness of communal conflict management and resolution approaches in North-central, Nigeria. A multi stage sampling technique was used to obtain a sample size of 391 farmers. Information was elicited using questionnaires and interview schedule and analysed using both descriptive statistics (mean score and ranking) and inferential statistics (Multivariate Analysis of Variance). Findings reveal that majority of farmers in the study area perceived community-based approaches ($\bar{x}$=2.58) as the most effective methods of conflict resolution in the study area. Furthermore, results show that conflict management and resolution methods such as intervention by traditional institutions (p=0.0000), use of court of law (p=0.0254), adopting peaceful settlements (p=0.0004), intervention by extension workers (p=0.0700), permanent ejection from community (p=0.0041), use of mediation (P=0.0708), education of farmers (p=0.0043) and use of negotiation (p=0.0169) had relationship with perceived effect of communal conflicts on agricultural extension service delivery. The study recommended the integration of useful aspects of traditional institutions with the modern management strategies and the adoption of peace education programmes by government that would provide lasting solutions to avoidable conflicts within farming communities in Nigeria.

Keywords: Communal Conflicts, Extension Services, Farmers

INTRODUCTION

One of the major constraints affecting agricultural development and food security in sub-Saharan Africa is that of communal conflicts. These conflicts disrupt food production through physical destruction and plundering of crops and livestock, harvest and food reserves and infrastructure as well as interrupt distribution of agricultural produce delivery of essential services and humanitarian relief to Internally Displaced Persons (IDPs). National Working Group on Armed Violence and Action on Armed Violence (2013) reported that more than 15,700 people have been killed in communal conflicts in Nigeria and hundreds of thousands displaced since the country transited from military to civilian rule in 1999.

History has shown that the various approaches used by successive governments have not yielded the desired results in resolving the conflicts. Unfortunately, these conflicts not only continue to persist but are on the rise and have become a nationwide phenomenon (Adzenga *et.al.,* 2021). There is a compelling need identify effective strategies for finding solutions to such conflicts. This is particularly true if any reasonable success is to be achieved in the agricultural sector that is currently undergoing changing production patterns as a result of market and population-driven intensification (Adisa, 2011). It is against this backdrop that the study examined the extent to which farmers perceive the effectiveness of communal conflict management and resolution approaches in Benue and Nasarawa States, North-Central, Nigeria. Specifically, this study seeks to:

i. determine the effectiveness of conflict management and resolution approaches by the respondents in the study area.
ii. determine the perceived effect of communal conflicts on the delivery of agricultural extension services by field extension workers of ADPs to farmers in the study area.

The study's hypothesis was stated that there is no significant relationship between perceived effectiveness of conflict resolution methods and perceived effect of communal conflicts on agricultural extension service delivery.

METHODOLOGY

North Central Zone occupies total land area of 296,898 km^2 representing about 32% of the land area of the country. It is located between latitudes 6^0 30' to 11° 20' North and longitudes 2° 30' to 10^0 30' East. More than 77% of the people in the region are mostly engaged in one form of agricultural activity or the other. The vegetation, soil and weather patterns are favorable to produce a wide spectrum of agricultural food, industrial and cash crops of various types such as rice, yam, cassava, soybeans, millet, cowpea and maize (Adzenga, 2019).

Purposive sampling was adopted to select two (2) States (Benue and Nasarawa) from the seven (7) States in North-central Nigeria where communal conflicts occur frequently. The population of the study comprised all farm families in Benue and Nasarawa States, Nigeria. All the agricultural zones in the two (2) States were considered for the study. Seven (7) LGAs that have

recorded high incidence of communal conflicts over the years were purposively selected, that is, four (4) out of 23 LGAs from Benue State and three (3) out of 13 LGAs from Nasarawa State, respectively. Eleven (11) extension blocks with high prevalence of communal conflicts were purposively selected from the LGAs eight (8) extension blocks from Benue State and three (3) extension blocks from Nasarawa State. Twenty-four (24) extension cells that have experienced recurrent communal conflicts were randomly selected (15 extension cells from Benue State and nine (9) extension cells from Nasarawa State). From the list of farm families from each of the cells, 391 farmers (277 farmers from Benue State and 114 farmers from Nasarawa State) were selected through proportionate selection using the Taro Yamane formula for determination of sample size.

Primary data were collected with the use of structured questionnaire and interview schedule and analysed using both descriptive statistics (Mean score and ranking) and inferential statistics (Multivariate Analysis of Variance).

RESULTS AND DISCUSSION
Farmers' perception on communal conflicts

Table 1 revealed farmers perception on effects of communal conflicts on extension services delivery in the study area. The result pointed to the fact that majority of the respondents in the study area perceived communal conflicts to have high effects on accessibility of extension services ($\bar{x}$=2.50). This was closely followed by timeliness of extension services ($\bar{x}$=2.49), efficiency of extension services ($\bar{x}$=2.49), targeting of extension services ($\bar{x}$=2.48), effectiveness of extension services ($\bar{x}$=2.41), relevance of extension services ($\bar{x}$=2.36) and content accuracy of extension services ($\bar{x}$=2.27). This result is consistent with the findings of Adisa (2011) and Adelakun et al. (2015) that incessant resource-based conflicts have continued to undermine the impact of agricultural extension service delivery in Nigeria resulting in severe effect on availability to extension services, adoption of improved technology and continued use of adopted technology.

Table 1. Perceived effects of communal conflicts on extension services delivery (n=391)

Factors	High	Moderate	Low	Sum	Mean ($\bar{x}$)	Rank
Accessibility of Extension Services	216(65.34)	155(29.64)	20(5.02)	978	2.50	1st
Timeliness of Extension Services	216(55.24)	152(38.87)	23(5.88)	975	2.49	2nd
Efficiency of Extension Services	206(52.69)	169(43.22)	16(4.09)	941	2.49	2nd
Targeting of Extension Services	193(49.36)	171(43.73)	27(6.91)	948	2.48	4th
Effectiveness of Extension Services	184(47.06)	182(46.55)	25(6.39)	972	2.41	5th
Relevance of Extension Services	170(43.48)	191(48.85)	30(7.67)	922	2.36	6th
Content Accuracy of Extension-Services	136(34.78)	226(57.80)	29(7.42)	889	2.27	7th

Source: Field survey, *2017*
Figures in parenthesis are percentages: High Effect=3, Moderate Effect=2, Low Effect=1
Decision rule: Mean scores ≥ 2=Perceived as high effects of communal conflicts on extension services delivery
Mean scores < 2=Perceived as low effects of communal conflicts on extension services delivery

Relationship between perceived effectiveness of conflict management and resolution approaches and perceived effect of communal conflicts on agricultural extension services delivery

It was hypothesized that there is no significant relationship between perceived effectiveness of conflict resolution methods and perceived effect of communal conflicts on agricultural extension service delivery.

Table 2 showed that conflict management and resolution methods such as intervention by traditional institutions (p=0.0000), use of court of law (p=0.0254), adopting peaceful settlements (p=0.0004), intervention by extension workers (p=0.0700), permanent ejection from community (p=0.0041), use of mediation (P=0.0708), education of farmers (p=0.0043) and use of negotiation (p=0.0169) had a significant relationship with perceived effect of communal

conflicts on agricultural extension service delivery. This result is consistent with the findings of National Agricultural Extension and Research Liaison Services (NAERLS) and Federal Department of Agricultural Extension (FDAE) (2018) that a combination of approaches, implementation of anti-grazing law, establishment of ranches, improving security and strict compliance with existing laws, formation of farmers/grazers conflict resolution committees and enlightenment of stakeholders would mitigate communal conflicts in Nigeria.

From the findings, the null hypothesis which states that there is no significant relationship between perceived effectiveness of conflict resolution methods and perceived effect of communal conflicts on agricultural extension services delivery is therefore rejected and the alternative hypothesis was accepted.

Table 2. Relationship between perceived effectiveness of conflict management and resolution methods and perceived effect of communal conflicts on agricultural extension services delivery

Variables	Statistics	F	P
Intervention by traditional institutions	0.9375	4.29	0.0000***
Use of court of law	0.9161	1.77	0.0254*
Adopting peaceful settlements (Dialogue)	0.8817	2.56	0.0004*
Intervention by law enforcement agencies	0.9314	1.43	0.1117
Intervention by extension workers	0.9262	1.54	0.0700*
Intervention by land commission agents	0.9547	0.93	0.5478
Adopting open confrontation	0.9365	1.32	0.1697
Adopting tolerance by both parties	0.9384	1.27	0.1970
Permanent ejection from community	0.9000	2.13	0.0041*
Payment of compensation to victims	0.9537	0.95	0.5227
Use of mediation	0.9264	1.54	0.0708***
Education of farmers	0.9004	2.12	0.0043*
Use of Negotiation	0.9123	1.85	0.0169**
Intervention by government agencies	0.9809	0.77	0.6471

Source: Field survey data, 2017 ***, **, * and significant at 1%, 5%, 10% respectively
Statistics: Wilks' Lambda

CONCLUSION AND RECOMMENDATIONS

The findings reveal that most of the farmers in the study area perceived community-based and other conflict resolution mechanisms as highly effective methods of conflict resolution and had a significant relationship with perceived effect of communal conflicts on agricultural extension service delivery. Also, the farmers perceived occurrence of communal conflicts to have high effect on extension services delivery in terms of timeliness, effectiveness, targeting, efficiency, relevance and content accuracy of extension services in the study area. It is therefore recommended that Government should set up or strengthened conflict resolution, reconciliation and peace building mechanisms in communities that are mostly affected by communal conflicts in Nigeria.

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ATTITUDE OF BENEFICIARIES TOWARDS CONDITIONALCASH TRANSFER PROGRAM IN KAJOLA LOCAL GOVERNMENT AREA OF OYO STATE

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ABSTRACT

Conditional Cash Transfers (CCTs) are considered to be one of the ways of addressing poverty but with corruption, illiteracy and wrong perception of the potential benefit of the cash transfer, the conditional cash transfer stipend is believed to be insufficient or of no use to poverty reduction in Nigeria. This study analysed attitude of beneficiaries towards conditional cash transfer program in Kajola local government area of Oyo State. A multistage sampling procedure was used to sample one hundred and fifteen beneficiaries. Structured questionnaire and interview schedule were used to elicit responses from respondents. Data were analysed using descriptive and inferential statistics at p=0.05. Mean age of the respondents was 43 years with standard deviation of 12 years, most of the respondents (59.1%) were female, married (66.9%), 58.3% had primary education, household size of 1 to 5 (67.0%) and cash received bi-monthly 10,000 (55.7%). The benefits accrued from CCT were enhancement of utility availability (such as electricity, water etc) and improvement of family psycho-social well-being ($\overline{x}$=1.89), reduction of household poverty ($\overline{x}$=1.71) and improved savings ($\overline{x}$=1.35). The constraints encountered by the respondents were cash disbursement challenges ($\overline{x}$=2.52), poor extension service ($\overline{x}$=2.29) and poor awareness and enlightenment of the program ($\overline{x}$=2.06). Beneficiaries' attitude towards conditional cash transfer was favorable (53.9%). However, constraint faced by respondents (r=0.162, p<0.05) does not drive the respondents' attitude towards conditional cash transfer. Conditional Cash Transfer program should invest in measures to check disbursement challenges and improve on capacity building of the beneficiaries in the study area.

Keywords: Conditional cash transfer; beneficiaries; attitude; skills acquisition.

INTRODUCTION

Poverty "is one of the defining challenges of the 21st Century facing the world" (Gweshengwe and Hassan, 2020). Nigeria emerged 157th out of 187 countries captured in Human Development Report with Human Development Index (HDI) of 0.532 indicating a low level of life expectancy, education and income (UNDP, 2018). There is no doubt that Nigeria is trapped in a web of poverty, which affects its performance in the development arena. Social Safety Net Programmes (SSNPs) are a set of public measures taken by the government to protect the vulnerable section of the society from diverse types of economic and social hardships. There have been attempts at poverty alleviation with different programmes. However, most of these programmes have not yielded the much-desired result. The realisation of not too impressive impact of existing programmes on poverty led to the emergence of Conditional Cash Transfer (CCT) also known as Household Uplifting Programme (HUP) that beneficiaries are expected to participate in. The programme is focused on responding to deficiencies in capacity and lack of investment in human capital, especially amongst our poorest citizens. The Conditional Cash Transfer is about transferring N5,000 monthly to the poor and vulnerable persons in Nigeria. The money is paid every two months, which totals N10,000 for each beneficiary. They are also trained on life skills, savings and business development (Adeaga *et al.*, 2020). The use of cash transfer is still not very popular in some of the developing countries of the World. With bureaucracy, corruption, illiteracy and wrong perception of the potential benefit of the cash transfer, the conditional cash transfer stipend is believed to be of a very meager or of no use to poverty reduction in Nigeria, hence, this study. The general objective of this study is to analyse the attitude of beneficiaries towards conditional cash transfer program in Kajola Local Government Area of Oyo State. The specific objectives are to: identify the socioeconomic characteristics of the respondents; ascertain benefits derived from CCT by the beneficiaries; identify constraints faced as regards CCT by beneficiaries in the study area.

METHODOLOGY

This study was conducted in Kajola Local Government Area of Oyo State. The population of the study were all beneficiaries of CCT/HUP in Kajola Local Government Area of Oyo State. A multi-stage sampling procedure was adopted to sample the respondents for this study. The local government has 11wards but has 29 wards according to Oyo state cash transfer unit classification. First stage involved random selection of twenty percent of the wards to give six wards which are Ayetorooke, Gbelekaleilero, Ogan/bode, Ijio,ashin and pamo okeho, Kajola ilero and Olele and gbonje. Second stage involved random selection of one community from each ward to give six communities which are Kowosi, Idi-ayin, Kisanija, Alubo, Ilabe and Idi-igba

respectively. Third stage involved purposive sampling of 100 percent of the beneficiaries from the list of beneficiaries in the six communities selected. This gave 22, 16, 20 17, 19 and 21 beneficiaries respectively with respondents totalling 115. Data was collected using carefully developed questionnaire and structured interview schedule. Data collected was analysed using descriptive statistics and inferential statistics to analyse the hypothesis.

RESULTS AND DISCUSSION
Socioeconomic characteristics

Age distributions of respondents as presented in Table1 shows that more than half (60.8%) of the respondents were within the age range of 29- 50 years with mean age of 42.9years. Most (59.1%) of the respondents were female, 47.8, 66.9%, 15.7%, 11.7%, and 6.1% were married, widowed, single and divorced respectively. More than half (58.3%) of the respondents had primary education which points out that most of them are a bit literate. 67.0% of the respondents had household sizes of between 1 -5 persons with mean household size of 5 persons. 55.7% of the respondents received ten thousand naira bimonthly while 44.3% received twenty thousand naira bimonthly and 60.0% of the respondents see CCT as a successful program.

Table 1: Distribution of respondents based on socioeconomic characteristics of the respondents

Variables	Frequency	Percentage	Mean	Standard Deviation
Age				
18 – 28	13	11.3		
29 – 39	35	30.3	42.97	12.38
40 – 50	35	30.5		
51 – 60	23	20.0		
61 – 75	9	7.9		
Sex				
Male	47	40.9		
Female	68	59.1		
Marital status				
Single	13	11.3		
Married	77	66.9		
Divorced	7	6.1		
Widowed	18	15.7		
Educational status				
No formal education	23	20.0		
Primary	67	58.3		
Secondary	24	20.9		
Tertiary	1	0.8		
Household size				
1 – 5	77	67.0	4.89	1.872
>12	38	33.0		
Cash received bi-monthly				
10,000(base)	64	55.7		
20,000 (top-up)	51	44.3	7,213.39	2494
Do you see CCT as a successful program				
Yes	69	60.0		
No	46	40.0		

Source: Field survey, 2021

Benefit derived from conditional cash transfer by beneficiary

The benefits accrued from CCT were highlighted in this study. Data in Table 2 indicates that CCT enhanced utility availability with weighted mean score (WMS) of ($\overline{x}$=1.96) and CCT improved the family psycho-social wellbeing with mean of ($\overline{x}$=1.89) ranked first and second among the benefits derived from CCT. This is an indication that the bi-monthly payment to the beneficiaries will be able to pay some utility bills and maintain good wellbeing. CCT reduced household poverty ($\overline{x}$=1.71), improved savings ($\overline{x}$=1.35), improved housing condition ($\overline{x}$=1.27), increased household food security ($\overline{x}$=1.26) were ranked third, fourth, fifth and sixth, respectively. Thus, suggesting that the stipend disbursed have been able to reduce household poverty, improve savings, housing condition and food security. However, CCT improved access to health care

($\overline{x}$=1.12), improved access to education ($\overline{x}$=1.07) were the least ranked benefits. This shows that even though there is little improvement, the payment disbursed to the beneficiary is not sufficient enough in improving their healthcare and access to education.

Table 2: Distribution of respondents based on benefit derived from CCT

Items	Not a benefit	Low benefit	High benefit	WMS	Rank
Enhanced utility availability (such as electricity, water etc)	21.7	56.5	21.8	1.96	1st
Improved family psycho-social well being	34.8	40.9	24.3	1.89	2nd
Reduced household poverty	48.7	31.3	20.0	1.71	3rd
Improved savings	66.1	32.2	1.7	1.35	4th
Improved housing condition	77.4	17.4	5.2	1.27	5th
Increased household food security	80.0	13.0	7.0	1.26	6th
Increased enterprise activities	79.1	19.1	1.7	1.22	7th
Increased household income and purchasing power	90.4	7.0	2.6	1.12	8th
Improved access to health care	91.3	7.0	1.7	1.10	9th
Improved access to education/school environment	93.9	4.3	1.2	1.07	10th

 Source: Field survey, 2021

Constraints faced as regard cash transfer

The respondents' constraints to cash transfer were explored, the results in Table3 shows constraint items according to their severity by the respondents. The constraints that were mostly encountered by the respondents were those that border on cash disbursement challenges ($\overline{x}$=2.52), poor extension service ($\overline{x}$=2.29), poor awareness and enlightenment of the program ($\overline{x}$=2.06). This implies that cash disbursement problem and poor extension service, poor awareness and enlightenment of the program constitute the major constraints to beneficiaries of conditional cash transfer.

Table 3: Distribution of respondents based on constraints faced as regard CCT

Variables	Severe constraint	Mild constraint	Not a constraint	Weighted means score	Rank
Cash disbursement challenges	53.0	46.1	0.9	2.52	1st
Poor extension service	31.3	66.1	2.6	2.29	2nd
Poor awareness and enlightenment of the programme	11.3	80.9	7.8	2.06	3rd
Corruption of field staff	11.3	3.9	14.8	1.97	4th
Poor coordination and supervision of the program	9.6	68.7	21.7	1.88	5th
Illiteracy	13.9	56.5	29.6	1.84	6th
Political interference	9.6	49.6	40.9	1.69	7th

Source: Field survey, 2021

Categorisation of respondents' attitude towards CCT

Result in Table 5 reveals that 53.9% of the respondents had favourable attitude and 46.1% of the respondents had unfavourable attitude. The result of this finding shows that the respondents' attitude towards CCT is favourable. This may be because of the benefits they derive in CCT programme.

Table 5: Distribution of respondents by level of attitude towards CCT

General level of attitude	Frequency	Percentage
Unfavourable attitude	53	46.1
Favourable attitude	58	53.9

Field survey 2021

Test of relationship between constraints and attitude of respondents towards CCT

Correlation analysis on table 6 shows no significant relationship between constraints and attitude of respondents towards CCT. This implies that respondents' attitude towards CCT is not due to the constraints faced.

Table 6: Correlation analysis between constraints faced and attitude of respondent towards CCT PPMC

Variable	r – value	p – value	Remark
Constraint	0.162	0.084	Not significant

Source: Data analysis, 2021

CONCLUSION AND RECOMMENDATION

Based on the findings the constraints faced as regard CCT were those that border on cash disbursement problem, poor extension service, poor awareness and enlightenment of the program. Beneficiaries' attitude towards CCT was favourable in the study area. However, constraint faced by respondents does not drive the respondents' attitude towards conditional cash transfer in the study area. The study recommends that conditional cash transfer programme should invest in measures to check disbursement challenges and improve on capacity building of the beneficiaries.

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AWARENESS AND CHALLENGES OF PLATFORM COOPERATIVE AMONG MEMBERS OF LAGOS STATE UNIVERSITY OF SCIENCE AND TECHNOLOGY COMMUNITY

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ABSTRACT

Despite the promotion of cooperative to raise the livelihood of Nigerians, poverty and income inequality have remained high. The world is also witnessing rising digitalised economy and the conventional cooperative cannot be enough in these regards. It is therefore necessary to study platform cooperative (PC) that is done on the web. There is ample literature on cooperative, but it is lean for PC globally. The study investigated the awareness and challenges of PC. Convenience sampling procedure was used to select 150 respondents but 138 were successful for analysis. Data were collected using questionnaire on awareness and possible operational challenges of PC. Frequency table and percentage were used for analysis. Results showed that 44.5% respondents were male, 96.4% had higher formal education and 48.2% belonged to cooperative societies. 56.20% were aware while 43.80% were not aware of PC. 60.58% mentioned that they could join while 39.42% said they couldn't join PC. 84.67%, 83.94%, 80.29%, 78.83%, 74.45% and 67.15% mentioned lack of trust, internet fraud, poor electricity infrastructure, poor internet access, illiteracy and inefficient regulation, respectively, as possible challenges that will confront PC. Since majority were aware of PC and could join it, the cooperative model should be embraced by all stakeholders. Government should promote strong regulations to boost the trust of the people and assure security against fraud for internet-based business.

Keywords: Platform, Cooperative, Web, Challenges, Awareness

INTRODUCTION

Platform cooperative (PC), a form of business carried out on the web in which exchange processes are consummated and buyers and sellers pay for using the medium and also have the opportunity of sharing from its financial surplus upon subscription (Ogunyemi, et al, 2021). PC is similar to conventional cooperatives, the only difference is that it is done through the internet while the latter is done through physical contacts, both promoting the economic fortune of participants (Marathe, 2017). The ownership, operation and benefits of PC are for those using its services with the principles of one man one vote and non-discrimination in line with how Rochdale Pioneers started cooperatives in 1844 as mentioned by Mayo (2015).

Notwithstanding the promotion of all forms of conventional cooperatives to raise the livelihood of Nigerians, income inequality has continued to increase. Average income is low, and poverty is very high in Nigeria with 40.1% of her citizens living below 137,430 naira (US$381.75) per year, country's line of poverty, which translates to US$1 per day (NBS, 2019; World Bank, 2020). The ugly situation demands for additional effort like promotion of PC, the concept that was birthed by Scholz (2014). Scholz (2014) stated that PC as a form of cooperative would engender income and wealth distribution in favour of more inhabitants of the world as against any other forms of business that are done through the internet in which the promoters and shareholders take all the profits. Consequently, PC deserves to be given attention in the country to improve the income and wealth of Nigerians.

Apart from the early reports of Scholz (2014), Borkin (2019) and, Zhu and Marjanovic (2021) and the pioneering work of Ogunyemi et al. (2021) in Nigeria; literature on PC has remained slim according to Zhu and Marjanovic (2021) and Philipp et al., (2021). Ogunyemi et al. (2021) reported PC as cooperative model that is feasible and financially viable in Nigeria among agripreneurs. However, many studies, including Khalfan and Akbar (2006), Al-Alawi and Kuzic (2008), Agwu (2014) and Oluwagbemi (2016), have been done on the challenges of e-business generally but not directly on PC which is operated online as an e-business.

Due to the foregoing, it is necessary to examine the possible challenges that PC will face if promoted in the socioeconomic and business terrain of Nigeria. The study therefore aimed at analysing the limiting factors, otherwise called challenges, of promoting and running PC in Nigeria as well as the awareness of the cooperative model in the study area. The study adds to the lean literature on PC and exposes intending PC promoters and cooperative policy makers to the potential and active challenges that can discourage PC implementation and progress in the country. The study is equally important due to the veritable capacity of PC in reducing income inequality and boosting buyers and sellers' income through the web business.

The underpinning motivation for this study, however, emanated from the 30th annual national congress of the Rural Sociological Association of Nigeria, when the feasibility of PC was presented. The audience underscored the necessity for a study on the challenges PC for

potential operators, participants and policy inputs in Nigeria. Also, the increasing digital economy in the global terrain adds impetus to the study. PC operation in Nigeria will increase the share of the country in the world digital business, thus bringing Nigeria from her lagging position in digital application as reported by (Oluwole, 2021).

Also, the growing number of internet users in Nigeria through different channels such as mobile phones and computers adds to the spur of studying PC in the country. Internet users are increasing despite information communication technology and internet infrastructural challenges. Internet users rose from 126,078,999 in December 2019 to 154,301,195 in December 2020 (NCC, 2022). There is growing usage of the internet facilities as market where buyers and sellers consummate exchange on different commodities and services in all localities in Nigeria especially in the cities. PC will take advantage of these business opportunities and offer the advantages of bringing buyers and sellers together whereby they also share from the profit of the business platform as members. The adoption of PC will therefore add to

income and wealth generation for wider economic agents.

METHODOLOGY

The study adopted convenience sampling procedure and administered 150 questionnaires within the campus of the Lagos State University of Science and Technology, Ikorodu, Lagos State. 138 questionnaires were successful for analysis. Only the respondents that were of legal contractual age of 18 years minimum were used. Descriptive statistics: cross classification table, frequency distribution and percentage were used for analysis.

Awareness has three levels (Gafoor, 2012); one of which is adopted for the study in line with Elia (2017) and is operationalised as:
Awareness=Respondent knowledge of Platform Cooperative (Aware=Yes and Not Aware=No)
Challenge is measured in line with Ogunyemi and Orowole (2020) as: Challenge=Any factor or condition that can inhibit or limit the operation of Platform cooperative (If respondent agrees=Yes and if respondent does not agree=No)

Table 1: Frequency distribution of respondents' gender, formal education, membership of conventional cooperative and awareness of online cooperative

Gender	Formal Education	Membership of conventional cooperative Awareness of online cooperative								
		Yes			No			Total		
		Yes	No	Total	Yes	No	Total	Yes	No	Total
Male	Primary	1	0	1	0	0	0	1	0	1
	Secondary	0	0	0	0	1	1	0	1	1
	National Diploma	4	0	4	8	16	24	12	16	28
	HND/B.Sc	5	5	10	6	3	9	11	8	19
	PGD/MSc	3	5	8	1	1	2	4	6	10
	PhD	1	1	2	0	0	0	1	1	2
	Total [A] (%)	14	11	25 (18.25)	15	21	36 (26.28)	29 (21.17)	32 (23.36)	61 (44.53)
Female	Primary	0	0	0	0	0	0	0	0	0
	Secondary	1	0	1	0	0	0	1	0	1
	National Diploma	4	2	6	13	6	19	17	8	25
	HND/B.Sc	17	6	23	8	5	13	25	11	36
	PGD/MSc	4	7	11	1	2	3	5	9	14
	PhD	0	0	0	0	0	0	0	0	0
	Total [B] (%)	26	15	41 (32.12)	22	13	35 (25.55)	48 (35.03)	28 (20.44)	76 (55.48)
	Overall Total [A+B] (%)	40	26	66 (48.17)	37	34	71 (51.83)	77 (56.20)	60 (43.80)	137 (100.00)

Table 2: Respondents' age, awareness of online cooperative and their decision to join online cooperative

Age (Years)	Awareness of Platform Cooperative Decision to Join Platform Cooperative								
	Yes			No			Total		
	Yes	No	Total	Yes	No	Total	Yes	No	Total (%)
≤ 20*	7	3	10	6	8	14	13	11	24 (17.52)
21 - 40	36	16	52	20	13	33	56	29	85 (62.04)
41 - 60	6	7	13	7	6	13	13	13	26 (18.98)
≥ 61*	1	1	2	0	0	0	1	1	2 (1.46)
Total (%)	50 (36.50)	27 (19.71)	77 (56.20)	33 (24.09)	27 (19.71)	60 (43.80)	83 (60.58)	54 (39.42)	137 (100.00)

* Minimum age=18 years; Maximum age=64 years

RESULTS AND DISCUSSION

Gender, formal education, membership of conventional cooperative and awareness of online cooperative among the respondents

Table 1 shows the distribution of respondents along gender, formal education, membership of conventional cooperative and decision to join platform cooperative. Male respondents were 61 (44.53%) while the females constituted 55.48% as shown in the last column of table 1. Also, 1 male had primary education, 1 had secondary education while 57 had National Diploma and above as their highest levels of formal education. For the females, none had primary school and PhD as highest level of formal education while 1, 25, 36 and 14 respondents had National Diploma, Bachelors, Masters and PhD degrees as their highest levels of formal education. Therefore, 96.35% of all the respondents had higher formal education. Among the males, 25 (18.25%) and 36 (26.28%) were members and non-members of conventional cooperative while for the females 32.12% and 25.55% were members and non-members of conventional cooperative respectively. This means that 48.17% and 51.83% of all the respondents belonged and did not belong to conventional cooperative respectively unlike in Ogunyemi et al. (2021) where majority belonged to other forms of conventional cooperative. However, the results implies that the respondents have the capacity to contribute to the information on challenges of platform cooperative. Moreover, table 1 shows that females (35.03%) were more aware of platform cooperative than the male (21.17%). 28 (20.44%) of the females and 32 (23.36%) of the males were not aware of platform cooperative. The number of females with higher level of education that were aware of platform cooperative is more than that of the number of males with the same level of higher education. This implies that platform cooperative has the potential to gain more awareness in the study area as 77 (56.20%) were aware of it.

Age, awareness of PC and decision to join online cooperative

As shown in Table 2, majority of the respondents falls within the age range of 18 to 40 years which is 79.56%. This implies that they were mostly youths. 56.20% of the respondents were aware of PC and 43.80% were not aware of it. From the table 2, 60.58% of the respondents indicated in the affirmative that they could join online cooperative while 39.42% mentioned that they could not join it. Of the 77 respondents from the 137 total respondents, that were aware, 50 respondents representing 36.50% mentioned that they could join online cooperative and 27 (19.71%) said they could not. However, 33 (24.09%) of the entire respondents that were not aware of the PC model mentioned that they could join platform cooperative. This is an indication that there is high membership potential for platform cooperative. These results are in line with Ogunyemi, et al. (2021).

Challenges of operating online cooperative

From Table 3, majority of the respondents mentioned that the listed challenges can slow down the operation of online cooperative. 84.67%, 83.94%, 80.29%, 78.83%, 74.45% and 67.15% mentioned lack of trust (supporting Agwu, 2014) and Oluwagbemi, 2016), internet fraud, poor electricity infrastructure, poor internet access, illiteracy and inefficient regulation (in line with Al-Alawi and Kuzic, 2008, and Agwu, 2014), respectively. Other challenges also mentioned were low level of innovation and adoption of new technologies, poor planning, poor managerial skills (Al-Alawi and Kuzic, 2008) and low level of familiarity among platform cooperative participants. These findings support Khalfan and Akbar (2006).

Table 3: Respondents' consideration for challenges of online cooperative

SN	Challenge	Yes		No	
		Freq	%	Freq	%
1	Lack of trust to participate in online business due to fraud	116	84.67	21	15.33
2	Low and poor internet access in some localities will not allow some people to participate	116	84.67	21	15.33
3	Online fraud	115	83.94	22	16.66
4	Poor electricity infrastructural supply that will slow down participation as co-operators will be having downtown when they cannot charge their gadgets	110	80.29	27	19.71
5	Poor internet infrastructure relating to transmitting hardware medium	108	78.83	29	21.17
6	Illiteracy rate will hinder its growth at it will require abilities to read and write	102	74.45	35	25.55
7	Adults that are experienced in cooperative business may not participate due to their low level of digital literacy	99	72.26	38	27.74
8	Regulatory inefficiency will slow down the growth	92	67.15	45	32.85

SN	Challenge	Yes		No	
		Freq	%	Freq	%
9	Low income of an average Nigeria which may make online participation costly for him	82	59.85	55	40.15
10	High cost of logistics for delivery of goods which depends more of motorbikes	81	59.12	56	40.88
11	Competition with conventional cooperative system can hinder the growth of platform cooperative	81	59.12	56	40.88

CONCLUSION AND RECOMMENDATIONS

Platform cooperative (PC), cooperative on the internet web, will boost Nigerians participation in the digital economy towards the promotion of people's livelihood through resource mobilisation for production and consumption. PC will boost participants' income and wealth. The study shows that majority of the respondents were female. Most of the respondents had formal higher education, aware of the existence of PC and mentioned that they could join PC. PC is bound to be faced with challenges as an online business model. It will face lack of trust, poor internet access, fraud and, poor electricity and internet infrastructure, high cost of logistics in relation to goods and services delivery, competition with conventional cooperative and inefficiency of regulators supporting the model. Therefore, government standards regulators should ensure that standards are upheld in the deployment of internet infrastructure. Government should promote cyber security and regulatory framework to reduce internet business fraud and boost the trust of people in using the internet for business transaction. Digital literacy needs to be promoted as well to enhance the operation of PC. Non-governmental organisation, cooperative participants and regulators should embrace PC to broaden the horizon of cooperative and for Nigeria to take advantage of the rising digital economy.

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WOMEN'S PARTICIPATION IN AGRO-BASED INCOME GENERATING ACTIVITIES IN IKORODU LOCAL GOVERNMENT AREA OF LAGOS STATE, NIGERIA

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ABSTRACT

This study was carried out to determine women's participation in agro-based income generating activities in Ikorodu local government area, Lagos state. A two-stage sampling procedure was used to select 120 women participants for the study. Data were collected on the respondents' personal characteristics, extent and reasons for participation in agro-based activities and problems affecting the respondent's participation using a structured questionnaire. Data were analysed using frequency counts, percentages, mean, standard deviation and Pearson Product Moment Correlation Coefficient (PPMC). Descriptive statistics showed that 40.6% of the respondents were within the age bracket of 40-49 years old. A major proportion (85.0%) had formal education and 86.7% were married. Respondents highly participated in marketing of farm produce ($\bar{x}$=3.94) and poultry ($\bar{x}$=3.93). They participated in agro-based activities because of personal interest ($\bar{x}$=4.66) and to improve their living standard ($\bar{x}$=4.61). From the Problem Confrontation Index, it was found that unpredicted weather was ranked first (PCI=281) and expensive farm inputs was ranked second (PCI=267). PPMC results reveals that educational qualification (r=0.382; p<0.05) and source of income (r=0.293; p<0.05) had positive significant relationship with extent of participation. Sequel to these finding, it is therefore recommended women should be introduced to climate smart agriculture, so as to cope with the problem of unpredicted weather.

Keywords: Women, Income generating activities, Agro-based enterprise

INTRODUCTION

Even though agriculture has been recognized as an engine of growth and poverty reduction in Africa, the agricultural sector in sub-Saharan African (SSA) countries, Nigeria inclusive, is underperforming because women who represent an essential resource in agriculture and the rural economy through their roles as farmers, laborers and entrepreneurs face limitation that diminish their productivity (Daman, 2011). They are involved in various agro-based activities such as household crop production, animal production, food processing, storage, transport, marketing and so on. Moreso, African women provide about 60-80% of food for family consumption and that the economic growth and development of many nations is attributable to female entrepreneurs (Iyiola and Azuh, 2014). Hence, no meaningful household food security can occur without women. The rural economy in Lagos is dominated by women through their participation in various agro-based activities. (Adeyokun, 2010).

Most of the livelihood activities which women engaged in are not defined as economically active employment in national account systems yet are crucial to the wellbeing of household members (FAO, 2010). Furthermore, most women work are undervalued because it is typically under remunerated and often confined to the domestic or household chores (Fontana and Paciello, 2010). The attention given to the participation of agro-based activities among women in the study area has been peripheral therefore, this study was set to analyse women's participation in agro-based income generation in Ikorodu Local Government area of Lagos state. Hence, the study described the socioeconomic characteristics, evaluated the extent of women's participation, identified the reasons for participating and described the problems affecting women in their participation in agro-based activities. It was hypothesized that there is no significant relationship between selected socioeconomic characteristics and the extent of participation in agro-based activities.

METHODOLOGY

The study was carried out in Ikorodu Local Government Area, Lagos State, Nigeria. A two-stage sampling technique was used to select sample for the study. The first stage involved a purposive selection of six (6) communities out of all the communities in Ikorodu LGA, Lagos State. The second stage involved systematic selection of 20 women participating in Agro-based income generation activities from the Six (6) selected communities arriving at a sample size of 120 Respondents.

The extent of participation amongst women in the study area was measured on a four-point Likert-type scale of 0, 1, 2 and 3 for not at all, often, occasionally and always respectively. The reasons for participating in agro-based income generating was measured by rating their responses using a five-point Likert scale with the scoring order 5, 4, 3, 2 and 1 as strongly agree, agree, undecided, disagree and strongly disagree respectively. The Problems Confrontation Index (PCI) was used to analyse the problems according to their severity. The respondents were given four alternative responses for each of the selected problems. These scores are "High"=3, "Medium"=2, "Low"=1, and "Not at all"=0. The

data was analysed using descriptive statistical tools such as frequency, percentages, mean and standard deviation while Pearson Product Moment Correlation (PPMC) was used for inferential statistics.

RESULTS AND DISCUSSION
Socioeconomic characteristics
The result in Table 1 shows that the mean age of respondents was 47.63 years and majority were married (86.7%). The mean age of the respondents is an indicator that they are young,

agile and fit. This finding gives credibility to the findings of Abera *et al.,* (2021) that reported the mean age of women to be 45.55 years. Substantial part (85.0%) of the respondents had one form of formal education This implies that a high percentage of the respondents were literate. The respondents have an average monthly income of ₦88887.93. The mean year of engaging in agro-based activities is 15.27 years. This finding is similar to Shaik *et al.,* (2021) who reported that women are engaged in income generating activities for a long period of time.

Table 1: Socioeconomic Characteristics of the respondents (n=120)

Variables	Frequency	Percentage	Mean	S.D
Age			47.63	9.69
<30	1	0.8		
30 – 39	21	17.4		
40 – 49	49	40.6		
50 – 59	34	28.4		
>60	15	12.4		
Marital Status				
Married	104	86.7		
Single	6	5.0		
Widowed	6	5.0		
Divorced/Separated	4	3.3		
Educational Qualification				
Non formal	18	15.0		
Primary education	34	28.3		
Secondary education	26	21.7		
Tertiary education	42	35.0		
Monthly Income (₦)			88,887.93	954,144.36
< 100,000	93	77.5		
100,000 – 200,000	19	15.8		
200,001 – 300,000	5	4.2		
>300,000	3	2.5		
Years of engagement			15.27	9.38
< 10	32	26.5		
10 – 19	48	40.0		
20 – 29	23	19.2		
>30	15	12.5		

Source: Field Survey, 2022

Extent of women's participation in agro-based income generation
The result in Table 2 reveals that marketing of farm produce ($\bar{x}$=3.94) ranked the highest among the respondents participating in agro-based income generating activities. This is followed by poultry ($\bar{x}$=3.93) and food processing activities ($\bar{x}$=3.92).

Household crop production ($\bar{x}$=2.51) was ranked last. This implies that marketing of farm produce is the activity that the respondents are mostly involved in. This may be because marketing helps to sell their farm produce and therefore help to generate income among women in the study area.

Table 2: Extent of women's participation in agro-based income generation (n=120)

Activities	Regularly	Occasionally	Often	Not at all	Mean	Rank
Marketing of farm produce	116	3	0	1	3.94	1st
Poultry	118	0	0	2	3.93	2nd
Food processing activities	116	2	0	2	3.92	3rd
Post-Harvest activities	103	17	0	0	3.86	4th
Storage activities	108	5	0	7	3.72	5th
Fishery	89	2	0	29	3.02	6th
Transporting activities	57	34	3	26	2.80	7th
Livestock rearing	68	18	0	34	2.72	8th
Household crop production	73	3	0	44	2.51	9th

Source: Field Survey Data, 2022

Reasons for participating in income generating activities

the study area majorly participated in income generating activities as a result of their personal interest ($\bar{x}$=4.66, in order to improve their standard of living ($\bar{x}$=4.61) followed by to become financially independent ($\bar{x}$=4.59). However, to be a role model ($\bar{x}$=3.38) and as a result of peer influence ($\bar{x}$=2.90) were the least important reasons. This finding agreed with the findings of Abera *et al*. (2021) which indicated that women in Kedida participated in agro-based activity in order to become financially independent, and to improve their standard of living.

Table 3: Reasons for participating in income generating activities (n=120)

Reasons	SA	A	U	D	SD	Mean
Personal interest	95	17	3	2	3	4.66
To improve my standard of living	80	33	7	0	0	4.61
To become financially independent	77	35	8	0	0	4.59
To have savings	73	45	2	0	0	4.58
To earn a living	75	34	4	7	0	4.48
To provide for the family	66	38	16	0	0	4.42
Help the economy	68	26	15	9	2	4.24
To increase self-esteem	52	42	18	8	0	4.15
Not to become lazy and a busybody	63	21	11	24	1	4.01
Customs: very normal for women in the area	37	53	15	11	4	3.90
To get recognition	40	23	36	17	4	3.65
To be a role model	22	43	23	23	9	3.38

Source: Field Survey Data, 2022

Major problems facing women in their participation in agro-based activities

Analysis from the table 4 reveals that Unpredicted weather (PCI=281), Shortage of farm inputs (PCI=267) and Lack of extension service (PCI=261) were ranked 1st, 2nd and 3rd respectively. This reflects that the most severe problem confronted by respondent is unpredicted weather.

Table 4.8: Major problems facing women in their participation in agro-based activities

Problems	Extent of problem confrontation				PCI	Rank
	High (3)	Medium (2)	Low (1)	Not at all (0)		Order
Shortage of land	68	5	8	39	222	8th
Unpredicted weather	76	16	21	7	281	1st
Lack of credit/money	42	5	33	40	169	9th
Lack of market access	68	11	23	18	249	6th
Shortage of farm inputs	74	12	21	13	267	2nd
Poor soil fertility	75	7	15	23	254	4th
Lack of extension service	85	0	6	29	261	3rd
Lack of access to improved technology	77	10	2	31	253	5th
Transportation problem	65	17	14	24	243	7th
Non-cooperation from husband	8	0	14	98	38	10th

Source: Field Survey Data, 2022

The result in Table 5 reveals that educational qualification (r=0.382; p<0.05) and source of income (r=0.293; p<0.05) had positive significant relationship with extent of participation while years of engagement in agro-based activities (r=- 0.503; p<0.05) and access to credit (r=-0.286; p<0.05) had negative significant relationship. This means that the higher their educational qualification, the more their participation in agro based activities, and so is

their source of income. The reverse is the case however, for access to credit and years of engagement in agro-based activities. In line with this finding is that of Anwarul (2008) who found that women's level of education and source of income had positive and significant correlation with their perception of participating in income generation activities.

Table 5: Results of PPMC analysis of selected socioeconomic characteristics and the extent participation in agro-based generating income activities

Variables	The correlation coefficient (r)	p-value	Decision
Age	-0.036	0.693	Not significant
Marital Status	0.122	0.186	Not significant
Religion	0.049	0.594	Not significant
Educational qualification	0.382[*]	0.000	Significant
Household size	-0.141	0.126	Not significant
Engagement in agro-based activities	-0.503[**]	0.000	Significant
Source of income	0.293[**]	0.001	Significant
Access to credit	-0.286[**]	0.002	Significant
Membership of farmer's association	-0.167	0.068	Not significant

Source: Field Survey Data, 2022

CONCLUSION AND RECOMMENDATION

It can be concluded from the study that marketing of farm produce and poultry had high participation among the respondents. The most important reasons emanating from this study why women participate in income generating activities are due to personal interest and to raise their standard of living. The problem affecting women's participation in this study area were high in unpredicted weather, shortage of inputs and lack of extension service. As such it is recommended that women should be introduced to climate smart agriculture so as to cope with the problem of unpredicted weather. There should also be collaboration of private extension service with public extension service to reduce the reliance of public extension service. Support should be given by relevant agencies and ministries to women in the rural areas to boost their contributions to the economic welfare of their households.

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FAMERS' PERCEPTION ON BENEFITS OF POST-HARVEST MANAGEMENT PRACTICES OF YAM IN KOGI STATE OF NIGERIA

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ABSTRACT

The study determines the perception of farmers on the benefits of post-harvest management practices of yam in Kogi State of Nigeria. Sample size of 160 farmers were selected using multi-stage sampling procedure. Structured questionnaire complimented with interview scheduled were used for data collection. Data were analysed using frequency, count, percentage and mean. The result revealed that all (100%) of the farmers were aware of all the methods of post-harvest management in yam. Farmers agreed that post-harvest management meet farmers nutrition requirement ($\overline{X}$=4.31), post-harvest management is good for meeting farmers need in time of food scarcity ($\overline{X}$=3.96) and post-harvest management are not too difficult to finance ($\overline{X}$=3.89). While shortage of fund (98.1%), high cost of post-harvest material (94.4%) and transportation challenge (93.8%) were the major challenges faced in practicing the post-harvest management. It is recommended that research institutes such as Nigerian Stored Products Research Institute (NSPRI) should come up post-harvest equipment at friendly cost to farmers. Also, that fund should be made available by governments and non-governmental organisation for farmers to purchase post-harvest tools and equipment.

Keywords: Post-harvest management, Farmers, Post-harvest equipment

INTRODUCTION

Post-harvest can be defined as stage of crop production immediately after harvesting. It involves stages such as drying, shelling, cleaning, sorting and packing (Vellema, 2008). Post-harvest management practices are methods used in adding value agricultural produce after harvesting in order to preserve, conserve, quality control processing, packaging, storage, distribution, marketing, and utilisation to meet the food and nutritional requirements for the populace. The roles of post-harvest management among rural farming populace includes reduction in losses, value addition, opening a market opportunity, job creation and sources of materials to other sectors. Nigeria fertile land paves way for most crops to thrive well (Pelemo *et al.,* 2020). Agricultural sector has enhanced economic development of the country by absorbing more labour force engaged in full or part-time farming. This has resulted to increase in food production and also promote better standard of living of rural populace. However, despite the increase in crop production, the management practices in tubers and cereals are poor due to inadequate knowledge of growers on the practices. About 50% of agricultural produce waste away due to poor management practices (Saran *et al.,* 2012). This often forces farmers to sell most of their produce immediately after harvest. Post-harvest management practices are poorly utilised due to inadequate knowledge on the benefits embedded in post-management practices. It is expected that right knowledge on post-harvest management will reduce losses, poverty and livelihood status. The objectives of the study are to; determine the level of awareness on post-harvest management of yam; determine farmers' perception on post-harvest management and examines challenges associated with post-harvest management in the study area.

METHODOLOGY

This research was carried out in Kogi State. The State is located in the Guinea savannah ecological zone of Nigeria. The State is located between latitude 6^0 33' and 8^0 44'N and longitude 5^0 22' and 7^0 49'E. Kogi State has a total population of 3,278,487 in (NPC, 2006) and with growth rate of 3.2%, the State has estimated population of 4,636,071 in 2017. The State has land area of about 30,354.74 square kilometers (Kogi State Ministry of Information Working Document, 2016). The major food crops grown in the State are yam, cassava, maize, sorghum, rice, millet, cowpea, pigeon pea, groundnut, bambaranut, cocoyam, sweet potato, beniseed, melon, banana, plantain and cotton. Multi-stage sampling technique was used for this study. The first stage involved random selection of three (3) Agricultural zones out of four (4) Agricultural zones in the State. The second stage involved the selection of one (1) Local Government Area (LGA) from each of the zones making a total number of three (3) LGAs. The third stage involved random selection of four (4) communities each from the selected LGAs making a total of twelve (12) villages. The fourth stage involved the random selection 10% of the farmers from the sampling frame which gave a total of one hundred and sixty respondents (160). Primary data was used for this study. Data were collected by the researcher assisted by trained enumerators using well-structured questionnaires. Objectives of the study were achieved using descriptive statistics

such as frequency distribution, percentage and mean.

Analytical Techniques

Perception of farmers on the benefits of post-harvest management: This was using measured using 5-point Likert scale, and was allotted as follows: Strongly agree 5, Agree 4, undecided 3, disagreed 2, slightly disagree 1. A mean score of 3.0 shall be obtained by adding 1+2+3+4+5=15 and dividing by 5. The decision rule was any mean scores > 3.0, indicates agreed, while scores < 3.0 is termed disagreed

RESULTS AND CONCLUSION

Level of awareness on post-harvest management in yam

Results in Table 1 indicated all (100.0%) of the farmers in were aware of all the methods of post-harvest management in yam. This finding implies high degree of level awareness of post-harvest management of yam which could also implies high level of utilisation. This results implied that majority of the yam farmers were aware of post-harvest management of yam in the study area.

Table 1: Distribution of the farmers according to level of awareness on post-harvest management in yam (n=160)

Post-harvest management	Aware	
	Frequency	Percentage
Packing materials		
Traditional basket	160	100.0
Use of headpan	160	100.0
Use of sack bag	160	100.0
Storage methods		
Use of barn	160	100.0
Under a shade	160	100.0
Use of pit dug on ground	160	100.0
Use of ventilated store shed	160	100.0
Use of grass silo	160	100.0
Use of bare floor	160	100.0
Transportation		
Use of motorcycle	160	100.0
Use of truck/lorries	160	100.0
Use of bicycle	160	100.0
Preservation methods (ash and chalk)	160	100.0
Processing		
Pounding	160	100.0
Yam floor	160	100.0
Roasted	160	100.0
Slicing/chips	160	100.0
Pest controls		
Use of insecticide e.g., termidor	160	100.0
Use of chemicals that kill rats/indocile	160	100.0
Diseases controls		
Regular cleaning of warehouse	160	100.0
Use of disinfectant	160	100.0

Sources: Field survey, 2018

Farmers' perception on the benefits of post-harvest management in yam

Results in Table 2 revealed the results of perception of farmers on the benefits of post-harvest management in yam. The results showed that respondents agreed that post-harvest management meet farmers nutrition requirements ($\bar{X}$=4.32), followed by post-harvest management is good for meeting farmers need in time of food scarcity ($\bar{X}$=3.95). This implies that post-harvest management has ability of supplying food and essential minerals and vitamins to rural farming populace in the study area. This finding concurs with Elemosho et al. (2017), who reported that farming populace in River State, Nigeria benefited from increase in food production through adoption of post-harvest management. Also, farmers agreed that post-harvest management are not too difficult to finance ($\bar{X}$=3.89), post-harvest management increase farmers standard of living ($\bar{X}$=3.81) and post-harvest management improve farmers produce shelf life ($\bar{X}$=3.73).

Table 2: Farmers' perception on the benefits of post-harvest management in yam (n=160)

Perception Statements	SUM	Mean($\bar{x}$)	R	D
Post-harvest management is good for meeting farmers need in time of food scarcity	633	3.96	2nd	A
Post-harvest management are not too difficult to finance	622	3.89	3rd	A
Post-harvest management meet farmers daily food needs	593	3.71	6th	A
Post-harvest management meet farmers nutrition requirement	689	4.31	1st	A
Post-harvest management increase farmers standard of living	610	3.81	4th	A
Post-harvest management improve farmers produce shelf life	597	3.73	5th	A
Post-harvest management are compatible with farmer indigenous food preservation	582	3.64	8th	A
Post-harvest management improved farmers income	571	3.57	10th	A

Sources: Field survey, 2018
Note:SA=Strongly agree, A=Agree, UN=Undecided, DA=Disagree, SD=Strongly disagree
R=Ranking, D=Decision

Challenges associated with post-harvest management of yam

Table 3 showed that shortage of funds (98.1%) was the most challenges to post-harvest management of yam in the study area. Shortage of fund or lack of access to capital is a major problem facing Nigeria farmers. This was followed by high cost of post-harvest materials (94.4%). Transportation challenges (93.8%) ranked 3rd. The least ranked challenges in the study area were loss market value (56.3%) and disease attack (53.8%).

Table 3: Distribution according to challenges to with post-harvest management practices in yam (n=160)

Variables	Frequency	Percentage	Ranking
Inadequate credit facilities	142	88.8	5th
Shortage of funds	157	98.1	1st
Inadequate trainings on post-harvest	131	81.9	6th
High cost of post-harvest materials	151	94.4	2nd
Loss in market value	90	56.3	10th
Insect attacks	109	68.1	9th
Inadequate market information	119	74.4	8th
Disease attack	86	53.8	11th
Transportation challenge	150	93.8	3rd
Inadequate technical knowledge	123	76.8	7th
Inadequate infrastructure	148	92.5	4th

Sources: Field survey, 2018

CONCLUSION AND RECOMMENDATIONS

It can be concluded that many respondents were aware of post-harvest management in yam. Also, respondents agreed that post-harvest management meet farmers' nutrition requirements and post-harvest management is good for meeting farmers need in time of food scarcity. The major challenges to post-harvest management were shortage of funds and high cost of post-harvest materials. It is recommended that fund should be made available by governments and non-governmental organisation for farmers' to purchase post-harvest tools and equipment. Also, research institutes such as Nigerian Stored Products Research Institute (NSPRI) should come up post-harvest equipment at friendly cost to farmers.

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EFFECT OF COVID-19 PANDEMIC ON THE LIVELIHOOD STATUS OF RURAL HOUSEHOLDS IN OKEHI LOCAL GOVERNMENT AREA OF STATE, NIGERIA

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ABSTRACT
The study examines the effects of Covid-19 pandemic on the livelihood status of rural households in Okehi Local Government Area of State, Nigeria. Three-stage sampling procedure was used in selecting 125 rural households. Structured questionnaire complimented with interview scheduled were used for data collection. Data were collected on the socioeconomic characteristics of rural households, livelihood status of rural households, effect of Covid-19 pandemic on the livelihood status of rural households and coping strategies used in cushioning the effect of Covid-19 pandemic. Data collected were means, percentages and frequency distribution. The results showed 59.2% of rural households had low livelihood status. Further findings revealed that sponsoring of wards to school (87.2%), procurements of farm inputs (73.6%) and expenditure on cultural ceremonies (72.0%) were the most affected livelihood indicators due to Covid-19 pandemic. The most coping strategies used in cushioning the effect of Covid-19 pandemic were sale of asset $(\bar{X}=3.46)$, collecting loans and credit facilities $(\bar{X}=3.28)$ and purchasing items on credit $(\bar{X}=2.89)$. It is recommended that rural households should diversify into other viable livelihood activities in order to address their low livelihood status. Procurement of inputs is most affected livelihood indicator in the study area. Therefore, it is recommended that government should partners with international bodies such as IFAD and APEALS for inputs accessibility at reduce prices to rural households.
Keywords: Covid-19; Livelihood status, Rural, Households

INTRODUCTION

Agriculture is the major source of sustenance and livelihood to greater proportion of rural farming families in Nigeria and Sub-Saharan African (Pelemo *et al.,* 2020). Rural farming populace is responsible for bulks of food produce in Nigeria. These farmers depend mostly on crude implements due to inadequate access to farm machineries, incentives and capital required for increasing productivity. Corona Virus (Covid-19) is a native of China, the outbreak of this pandemic which was reported lately in year 2019 in Wuhan region of Eastern devastated the entire globe. COVID-19 was declared a pandemic by the World Health Organisation (WHO) due to an increase in the number of confirmed cases and mortality around the world (Cucinotta and Vanelli, 2020). This disease had adverse effect of rural farmers' livelihood status due to the number of days off from farming activities. International Labour Organisation (ILO) estimates that during the first three quarters of 2020 the number of working hours worldwide declined by 17% relative to that in the last quarter of 2019; a drop equivalent to a loss of almost 500 million full-time jobs (ILO, 2020). In Nigeria, the international Food Policy Research Institute (IFPRI) estimates a 38 % drop in the Gross Domestic Product (GDP) during the five-week lockdown from late march to early April 2020, and an 18% decline in agri-food GDP. The lockdown also worsened pre-existing inequalities, particularly for people with disabilities, women and girls. The challenges affecting the agricultural sector have been exacerbated by the pandemic, causing in food price and inflation limiting household purchasing power, disrupting food distribution and supply chains, depleting food stocks, and resulting in loss of income and livelihood opportunities. The resultant effect of this was increase in the country's already vast food security crisis. Several measures and policies were implemented by the government which was aimed curtailing the spread of the pandemic**.** Measure such lockdown, social distancing and use of nose mask have proven effective in managing the pandemic. In addition, there was restriction of exit and entry into the country through air and land borders. These measures have resulted in decline of the Nigeria GDP and livelihood status of rural households in the study area. The objective of the study area to: determine the livelihood status of rural households in the study area; examines the effect of COVID-19 on rural households' livelihood status and examine the coping strategies to cushion the effect of Covid-19 pandemic.

METHODOLOGY

This study was carried out in Okehi Local Government Area of Kogi State. It is in Kogi Central Senatorial District, the LGA shares boundaries with Adavi, Lokoja, Akokoedo and Kabba-Bunu local governments. It has an area of 661 km^2 and a population of 199,999 at the 2006 census (National Population Commission (NPC), 2006). The area mostly populated by members of the Ebira ethnic group. Okehi is located between

Latitude 7^0 33' and 7^0 35'N and Longitude 6^0 10' E and 6^0 14'E of the equator. (Kogi State Ministry of Information, 2016). The major economic activities of the people in this study area include farming, fishing, crafting, trading and food processing. Three-stage sampling technique was used in selecting the respondents in the study area. The first stage was purposive selection of two (2) districts located in the LGA. The second stage involved random selection of four (4) villages from these districts making a total number of eight (8) villages. The third stage was proportional selection of 10% of sample size from the sampling frame available for this research to give a total of one hundred and twenty-five (125) rural households. Primary data was collected using a structured questionnaire, with the help of enumerators.

Method of Data Analysis

Objective I was achieved using a livelihood status index

LSI=$\frac{\text{Number of livelihood benefited by ith respondent}}{\text{Total number of livelihood benefits}}$

Y=livelihood status index (LSI)

The categorization is $\leq$ 0.25=very low livelihood; 0.26-0.49=low livelihood; 0.50-0.75=high livelihood > 0.76=high livelihood (Mohammed *et al.,* 2020)

Objectives II and III were achieved using descriptive statistics such as a mean, frequency distribution and percentages

RESULTS AND DISCUSSION

Livelihood status of farming household

Table 1 showed that 59.2% of the respondents recorded low livelihood while 32.0% had high livelihood. This finding revealed that more than half of respondents suffered from improved livelihood because of Covid-19. This could be attributed to lockdown that paralyzed economic activities in most Nigeria States thereby having severe consequences on overall livelihood of rural farming populace. This finding contradicted that of Yisa *et al.* (2022) who confirmed that greater portion of rural farmers in Benue State of Nigeria had improved livelihood.

Table 1: Distribution of respondents according to livelihood status (n=125)

Variables	Frequency	Percentage
Very high livelihood (> 0.76)	1	0.8
High livelihood (0.50-0.75)	40	32.0
Low livelihood (0.26-0.49)	74	59.2
Very low livelihood ($\leq$ 0.25)	10	8.0

Source: Field survey, 2022

Effect of Covid-19 on the livelihood status of farming households

Table 2 revealed that sponsoring ward to school (87.2%) and procurement of farm inputs (73.6%) were the most affected because of Covid-19 in the study area. This occurs because of surge in the school feels and various farm inputs used by farming families. Expenditure on cultural/ceremonies (72.0%) and hospital bills 67.2% were also affected. The menace associated with Covid-19 had greater effect on the cultural activities and prices of medications in the study area. The least affected livelihood variables in the study area were expenditure for non-food item (53.6%) and expenditure for off -farm activities (52.0%). This could be attributed to the fact that majority of the rural households produced most of the arable crops and do not have to buy agricultural produce.

Table 2: Effect of Covid-19 on the livelihood status of farming households (n=124)

Variables	Affected		Not affected	
	Freq	Percentage	Freq	Percentage
Procurement of food items	83	(66.4%)	42	(33.6%)
Expenditure for non-food item	67	(53.6)	58	(46.4%)
Increase household assets	80	(64.0%)	45	(36.0%)
Procurement of farm inputs	92	(73.6%)	33	(26.4%)
Expenditure for non-farm activities	77	(61.6%)	48	(38.4%)
Expenditure for off -farm activities	65	(52.0%)	60	(48.0%)
Livestock assets	70	(56.0)	55	(44.0%)
Expenditure on cultural/ceremonies	90	(72.0%)	35	(28.0%)
Hospital bills	84	(67.2%)	41	(32.8%)
Sponsoring ward to school	109	(87.2)	16	(12.8)

Sources: Field survey, (2022)

Coping strategies of respondents

Table 3 revealed that sales of assets, collecting loan and credit facilities, purchasing items on credit were the most used coping strategy in the study area. Children eating first, spending income and increase in output were the least used coping strategy used by the respondent. The dependence on the most used coping strategies is an indication of deficiency in the farmers ability to meet up with the monetary demand while the coping strategies with lowest use implies shortage of food or inability to meet up with the required food with farm output not increasing to with meet up with demand. This finding is in consonance with that of Seyi-Olalekan *et al.* (2011) who reported that most rural dwellers cope with shock through varieties of coping strategies such as borrowing and distress sales of assets.

Table 3: Distribution of respondents according to coping strategy use index (n=125)

Strategy	Frequently	Occasionally	Rarely	Never	CUI	Mean	Rank
Spending income	14	3	53	55	226	1.81	10th
Children eating first	4	2	24	95	165	1.32	11th
Purchasing items on credit	35	45	41	4	361	2.89	3rd
Eating less preferred food	20	48	55	2	336	2.69	4th
Skipping of meals	13	41	69	2	315	2.52	5th
Reduction of food consumption	27	37	25	26	295	2.36	6th
Sales of asset	84	27	2	12	433	3.46	1st
Increase in farm input	2	24	57	42	236	1.89	8th
Increase in farm output	2	29	42	52	231	1.85	9th
Increase in off farm activities	10	34	26	55	249	1.99	7th
Collecting loan and credit facilities	68	28	25	4	410	3.28	2nd

Source: Field survey, 2022

CONCLUSION AND RECOMMENDATIONS

It can be concluded that most of the respondents had low livelihood status. Sponsoring of wards to school, procurements of farm inputs and expenditure on cultural ceremonies were the most affected livelihood indicators due to Covid-19 pandemic. Also, sale of assets and collection of loan and credit facilities were the most coping strategies used to cushion the effect of Covid-19 pandemic. It is recommended that government should partner with international bodies such as IFAD and APEALS for inputs to be provided for farmers at reduced price. Rural households should diversify into other viable livelihood activities for improved livelihood status and to absorb sudden and unplanned shock.

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ASSESSMENT OF YOUTH'S INVOLVEMENT IN HORTICULTURAL ACTIVITIES OF NATIONAL HORTICULTURAL RESEARCH INSTITUTE (NIHORT) ADOPTED VILLAGES, OYO STATE, NIGERIA

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ABSTRACT

Unemployment rate among youths in Africa is high, thus engaging more young people in the agricultural sector is one of the approaches in addressing the menace. The study investigated involvement of youths in horticultural activities in NIHORT adopted villages. Multi-stage sampling procedure was used to select forty respondents for the study. Data on the socioeconomic characteristics of respondents, their involvement in horticultural crop production, factors enhancing youth involvement in horticulture and constraints to horticultural crop production among the youths were collected using focus group discussion and interview schedule. They were analysed using frequencies, percentages, mean, chi-square and ANOVA (P=0.005). Majority (90.0%, 77.5%, 72.5%, and 85.0%) of the respondents were married, males, below 50 years of age and were involved in farming as an occupation respectively. A higher (60.0. % and (65.0%),) percentages were involved in the production of fruits and vegetables. The major (92.5%, 90.0%), constraints to horticultural crop production are inadequate credit facilities and no agricultural insurance, lack of access to tractor and other implements. Significant difference existed in the level of involvement in horticultural activities (F=28.403; p=0.000). Generally, youth involvement was more in production of diverse fruits and vegetables but less in ornamentals and spice production. There is the need for awareness creation on the health and wealth potentials in spice and ornamental crop production among the youth to promote further involvement.

Keywords: Fruits, Spices, Ornamental plants, Youths and Involvement

INTRODUCTION

Nigeria agriculture engages 70% of the rural population (Muhammad-Lawal and Atte 2006)). Moreover, her natural endowments in production factors manifested in arable land, capital water and human resources go a long way in stimulating growth in the economy. However, the bulk of the production efforts in agriculture are still driven by aged farmers who presently make up the majority of the farming population (Adekunle *et al*, 2009).

These farmers, who are mostly illiterates, poor, risk averse, lethargic to embracing improved farming methods, operate a small-scale farming system that lacks the capacity suited for the development dynamics of modern agriculture. Their production efforts only suffice to meet the food needs of their family with little or no surplus to sell. Consequently, this has resulted in low production, implied in food insecurity, inability to meet the raw materials demand of industries and the unsteady poor contribution of the agricultural sector to the GDP of Nigeria (Sanusi, 2006).

Therefore, to facilitate sustainability in agricultural production, there is the need to ensure a replacement of the ageing population of farmers by willing young and energetic youths. Arokoyo and Auta (1999) stated that only the participation of people who are energetic, creative, inventive, productive, and devoted could bring about the expected development of agriculture in Nigeria. There is a lot of concern about engaging youth in agriculture practices, however, young people are not very much interested to continuing in agriculture because they don't see much prospect in

agriculture as an active profession in the long run**.** Most youths are engaged in 'Okada' motorcycle riding and other social menace that can bring money quickly but are not sustainable.

Horticulture which is an aspect of agriculture can gainfully engage youths productively and sustainably along the value chain if appropriately harnessed. National Horticultural Research Institute which is one of the Agricultural Research Institute in Nigeria saddled with the mandate to carry out research for development in different aspects of horticulture viz fruits, vegetables, Spices and ornamental plants. The Institute since its inception in 1975 has been engaged in productive activities in several villages throughout Nigeria most especially in its adopted villages.

The major objective of this study is to assess youth involvement in horticulture in NIHORT adopted villages. The specific objectives of the study are to:
i. Determine the personal characteristics of respondents
ii. Assess respondents' involvement in horticultural crop production
iii. Identify constraints to horticultural crop production among the youths

The hypothesis was stated that there is no significant difference in the level of involvement of youths in the different horticultural activities.

METHODOLOGY

This study was carried out in Egbeda and Ona Ara Local Government Area of Oyo State, Nigeria, with headquarters in the town of Egbeda

and Akanran respectively. Two-stage sampling techniques was used to select the respondents for the study. The first stage was purposive selection of three (3) villages (Badeku, Osegere and Awaye) in the Local Government Area. The second stage involves selection of all available respondents from the farmers group (Badeku 18, Osegere 12 and 10 from Badeku), making total of Forty (40) farmers for the study.

RESULTS AND DISCUSSIONS

Personal characteristics of respondents

Table 1 shows a larger (90.0%) percentage of respondents were married this implies that married youth are more likely to participate in agricultural activities than unmarried ones. Majority (77.5%) of the respondents were males, this implies that there were more males involved in horticulture in the study area. Chukwendu and Adekoya (1995) reported that women's lack of land ownership right has hindered long time participation in agriculture.

Table 1: Personal characteristics of respondents

Variable	Frequency	Percentage
Categorised age (Years)		
<20	2	5.0
20-29	5	12.5
30-39	12	30.0
40-49	10	25.0
50-59	6	15.0
60 and above	5	12.5
Total	40	100.0
Sex		
Male	31	77.5
Female	9	22.5
Total	40	100.0
Marital Status		
Single	2	5.0
Married	36	90.0
Widow	2	5.0
Total	40	100.0
Religion		
Christianity	17	42.5
Islam	23	57.5
Total	40	100.0
Occupation		
Farming	34	85.0
Artisan	2	5.0
Trader	4	10.0
Total	40	100.0

Field Survey, 2021

Involvement in fruit crops production

Table 2a shows that majority (70%) of the respondents are involved in plantain production while majority (95.0%) and (77.5%) of the respondents were not involved in fruit processing and marketing respectively. Value addition is key in reduction of post-harvest losses and agricultural profitability. Most farmers produce and sell at farm gate price to middlemen. However, marketability of produce by producers is essential in reducing the activities of middlemen in order to improve farmers' income. This implies that more awareness should be given to youth in the study area on how they can process and market their produce effectively.

Table 2a: Involvement in fruit crops production

SN	Fruits	Yes		No	
		Freq	%	Freq	%
1.	Citrus	15	37.5	25	62.5
2.	Plantain	28	70.0	12	30.0
3	Mango	14	35.0	26	65.2
4	Pineapple	14	35.0	26	65.2
5	Irvingia	1	2.5	39	97.5
6	Fruit processing	2	5.0	38	95.0
7	Fruit marketing	9	22.5	31	77.5

Source: Field survey, 2021

Involvement in vegetable production

Majority (60% and 60%) of respondents in that locality produces more of okra and Amaranth while some (55%) of the respondents also produce tomatoes (Table 2b). Less than quarter (22.5% and 12.0%) were involved in the production of watermelon and cucumber respectively. The implication of this could be that youth in the locality have keyed into the production pattern in the environment while other vegetables that are exotic in nature are neglected even though they are money spinners in horticulture. Not only that, but the youth may also have little or no knowledge of the production practices of such crops since they are mainly produced in the northern part of the country that has better favorable environmental conditions.

Table 2b: Involvement in vegetable production

S/N	Vegetables	Yes		No	
		Freq	%	Freq	%
1.	Okra	24	60.0	16	40
2.	Amaranth	24	60	16	40
3	Jute mallow	18	45.0	22	55.0
4	Pepper	19	47.5	21	52.5
5	Cucumber	5	12.5	35	87.5
6	Watermelon	9	22.5	31	77.5
7	Tomato	22	55.0	18	45.0
8	Vegetable processing	1	2.5	39	97.5
9	Vegetable marketing	6	15.0	34	85.0

Source: Field survey, 2021

Constraints to involvement of youth in horticulture

Table 4 shows respondents identifying a wide range of constraints they perceived to militate against their active participation in horticultural production activities. The Table revealed that inadequate credit facility (92.5%), no agricultural insurance (92.5%), lack of access to tractors and other implements (90.0%), lack of initial capital (82.5%), no incentives for farmers (77.5%), transportation problems (72.5%), and climatic change (67%) were the major constraints that have affected respondents on active participation in horticulture. This is in line with Adekunle *et al,* (2010) findings that inadequate credit facilities, lack of agricultural insurance, lack of tractors and other implants militates youth active participation in agriculture. This implies that if the above constraints are fixed there will be active participation of youth in horticultural production.

Table 4: Constraints to involvement of youth in horticulture

S/N	Constraints	Yes Freq (%)	No Freq (%)
1.	Non- lucrativeness	21 (52.5)	19 (47.5)
2.	My parents will not allow	15 (37.5)	25 (62.5)
3.	Non-lucrativeness	21 (52.5)	19 (47.5)
4.	My parents will not allow	15 (37.5)	25 (62.5)
5.	Lack of initial capital	33 (82.5)	7 (17.5)
6.	Poor return on investment	19 (47.5)	21 (52.5)
7.	Lack of basic farming knowledge	21 (52.5)	19 (47.5)
8.	People will think I am illiterate	19 (47.5)	21 (52.5)
9.	No incentives for farmers	31 (77.5)	9 (22.5)

S/N	Constraints	Yes Freq (%)	No Freq (%)
10.	No agricultural insurance	37 (92.5)	3 (7.5)
11.	Lack of access to tractor and other implement	36 (90.0)	4 (10.0)

Source: Field survey, 2021

Level of horticultural involvement

Table 6 revealed that 60.0%, 65.0%, 17.5% and 10.0% of respondents are above the mean in fruits, vegetables, spices and ornamental crop production level of horticultural involvement, while the total level of horticultural involvement above the mean is 52.5%. This implies that horticultural crop production is a bit high among the youths in the study area in both fruits and vegetables.

Table 6: Level of horticultural involvement

Variables	Below the mean	Above the mean
Fruits	40.0	60.0
Vegetables	35.0	65.5
Spices	82.5	17.5
Ornamental	90.0	10.0
Horticulture	47.5	52.5

Source: Field survey, 2021

Hypotheses testing

Significant difference existed in the level of involvement in horticultural activities (F=28.403; p=0.000).

Table 8: Analysis of Variance showing difference of Horticultural involvements in the various activities

Index	Sum of Squares	df	Mean Square	F	Sig.	Decision
Between Groups	379.968	1	379.968	28.403	.000	Significance
Within Groups	187.619	37	5.071			

Source: Computation from 2021 field survey

CONCLUSION AND RECOMMENDATION

The study concluded that larger percentages of respondents were male, married, mainly involved in plantain, okra, amaranth and tomato production while few produce water melon and cucumber. Spice and ornamental plant production was not common among the respondents, and few were involved in processing and marketing of produce. Identified constraints to horticultural crops production were inadequate credit facility, no agricultural insurance, lack of incentives for farmers and climate change. Youth in the study area need to be adequately trained on priority horticultural crops along the value chain. Tailor made intervention strategies should be put in place to address the challenges to horticultural crops production in the adopted villages. Moreover, the youth in this study area need to be educated on production of other vegetable crops, how they can be processed and marketed to get more income. Furthermore, they should be educated on the physical, economical and beautification advantages of the production of these crops.

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LIVELIHOOD SECURITY AMONG RURAL HOUSEHOLDS IN OYO STATE, NIGERIA

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ABSTRACT
This study examines the Livelihood security among rural households in Oyo state, Nigeria**.** A multi-stage sampling procedure was used to select 162 respondents for the study. Data were collected on the socioeconomic characteristics of rural household and their livelihood security. A well-structured interview schedule was used for data collection which was analysed using frequencies, percentages, mean ranking, chi-square, Pearson Product moment Correlation and Analysis of Variance at p=0.05. Majority of the household heads were male (74.7%), had no formal education (33.3%), involved in farming (86.4%), with mean age of 48.79 ± 14.29 and mean household size 7.17 ± 3.66. Therefore, 51.9% of the respondents surveyed had low livelihood security. The result also shows that, a significant relationship exists between Sex (χ^2=11.21,), educational level (χ^2=19.70), primary occupation (χ^2=15.65,), household size (r=0.15) and Livelihood security in the study area. A significant difference existed between the three local government area in terms of livelihood security (r=0.000). It can be concluded that the livelihood security of the respondents is low even though they tried to diversify into other income generating activities. Therefore, we recommended that formal education and training for the rural households should be encouraged using individual and mass communication with the aid of extension agents and radio programmes.
Keywords: Livelihood, Household, Crop farmers, educational security and Food security

INTRODUCTION

Rural households perform various activities to gain and maintain their livelihoods. The nature of these livelihood activities depends on the availability of resources (including climate), assets, education, gender, labour, skills, social capital and seasonality. Rural Nigeria is characterized by an agrarian livelihood as well as certain other primary production activities. Studies have shown that agricultural-based livelihood in rural Nigeria has a higher level of poverty and food insecurity than other occupational groups. Rural agriculture is subjected to local variations in weather conditions, and thus expected variations in income levels and thus access to food (Omonona, 2009).

Most of the rural households are involved in agricultural activities such as livestock, crop or fish production as their main source of livelihood, they also engage in other income generating activities to augment their main source of income. In other words, very few of them g*et al*l their income from only one source, hold all their wealth in the form of any single asset, or use their resources in just one activity (Barrett *et al.*, 2001). Households' livelihood security remains a pertinent issue in the economic development of low household income communities (Bhandari and Grant, 2007). It has been defined as adequate and sustainable access to the income and resources required to meet basic needs. Livelihoods are universal which makes poor and rich people both pursue livelihoods to make a living.

The building of livelihoods reflects and seeks to fulfil both material and experiential needs. Livelihoods are not simply a localised phenomenon, but connected by environmental, economic, political and cultural process to wider national, regional and global settings. The sustainability of a livelihood is ascertained by its sensitivity, facing long and short-term challenges. Although, external forces such as unexpected changes cause the households lose their assets and capabilities which results to adverse effect in pursuing their livelihood and thereby making them face greater risk and uncertainties. The major objective of the study was to examine Livelihood security among rural households in Oyo State Nigeria. The specific objectives were to:

i. Identify the socioeconomic characteristics of rural households in the study area;
ii. Determine the livelihood security of the rural households in the study area.

Based on the objectives of the study, the following hypotheses was formulated and tested in a null form.

There is no significant relationship between selected socioeconomic characteristics of the respondents and their livelihood security

There is no significant difference in the household livelihood security across the three selected Local Government Areas.

METHODOLOGY

The study was conducted in Oyo State Nigeria, and it is located in the South west geopolitical zone of Nigeria. A multi-stage sampling procedure was used to select respondents for the study. A total of 162 respondents was used for the study. The data were collected with the aid of questionnaire/ structured interview and analysed using both descriptive statistical tool and inferential

statistics. The descriptive statistics include means, frequencies counts and percentages. Inferential statistics include Chi-square, Pearson product moment correlation (PPMC) and ANOVA was used to test the stated hypotheses of the study.

RESULTS AND DISCUSSIONS
Respondent's socioeconomic characteristics

The result on Table 1 reveals that the respondents had mean age of 48.79 ± 14.29 This implies that most of the respondents are still in their active age since most people in their middle age have potentials to take up responsibilities and innovations that can contribute significantly to livelihood activities which could translate to their Livelihood security. This finding is consistent with that of Yekinni (2010) and Salimonu (2007) who reported a mean age of 43.2 and 48.1 years respectively in their studies carried out across agricultural zones of Nigeria.

The result also reveals that 54.7% were Muslims. As regards one religious' belief, there could be limiting factors in participating in livelihood activities. Since, Muslims has taboo in engaging in piggery farming activities, other religious belief are likely to have an edge over them in such regards. This could probably or consequently result to hindrance of having alternative source of income where only piggery is set out as an option of diversification. And as a result, influence their state of livelihood security.

The table shows that majority (86.4 %) of the respondents engaged in farming as their primary occupation. Hence, the respondents only source of income for sustainable livelihood security. This corroborates the findings of Ayinde (2019) that most of the respondents engaged primarily in food crop farming. Finally, the result reveals the mean household size of farmers to be 7.17 ± 3.66.

Table 1: Distribution of selected Household socioeconomic characteristics (n=162)

Variables	Frequency	Percentage	Parameter
Age (Years)			
23-26	34	21.0	48.79
37 – 50	57	35.2	SD 14.29
51- 64	48	29.6	
65- 78	17	10.5	
>79	6	3.7	
Sex			
Male	121	74.7	
Female	41	25.3	
Marital status			
Single	8	4.9	
Married	147	90.7	
Divorced	2	1.2	
Widow/Widower	5	3.1	
Religion			
Christianity	64	39.5	
Islam	93	57.4	
Traditional	5	3.1	
Household Size			
1 -3	19	11.7	
4 -6	54	33.3	7.1728
7 -9	53	32.7	SD 3.66
>9	36	22.2	
Educational level			
No Formal Education	54	33.3	
Primary Education	48	29.6	
Secondary Education	43	26.5	
Tertiary Education	17	10.5	
Primary occupation			
Farming	140	86.4	
Fishing	1	0.6	
Artisan	10	6.2	
Civil Service	5	3.1	
Others	6	3.7	

Source: Field survey, 2019

Livelihood security of the rural households

The Livelihood Security of the respondents was computed based on the four different indicators of Livelihood. The four indicators of livelihood security that was selected for this study are Food security, Economic security, Health security, educational security. These indicators were obtained and summed up together to get a Standardized score which was used to categorize Livelihood security into High and Low.

The result on Table 2 shows that majority (51.9%) of the respondents had low livelihood security which means that rural households are deficient in sustaining their income and other resources in securing their Livelihood occurrence in the study area. Also, the household access to available resources which is proportional to their Livelihood security. In addition, the low level of Livelihood security indicators is a derivative function of the state of Livelihood security

Table 2: Categorization of the respondents Livelihood Security

Category	Frequency	Percentage	Mean
Low	84	51.9	6.54
High	78	48.1	

Source: Field survey, 2019

Hypotheses Testing

Result obtained from Table 3 revealed that there was a significant relationship between sex (χ^2=11.214, p=0.001), Educational level (χ^2=19.704, p=0.000), Primary occupation (χ^2=15.656, p=0.004) and livelihood security. The

findings that sex influences the livelihood security can be explained by the fact that there are more males involved in farming in the study area. This is in line with the findings of Iheke and Nwaru (2009) who reported higher productivity of men in managing farms than in women.

Table 3: Chi-Square analysis of respondents' socioeconomic characteristics and livelihood security

Socioeconomic characteristics	χ^2	p-value	Decision
Sex	11.214	0.001	S
Marital status	4.808	0.186	NS
Religion	1.531	0.465	NS
Educational level	19.704	0.000	S
Primary Occupation	15.656	0.004	S

Source: Field survey, 2019

Test of difference between the household livelihood securities across the three selected local government areas

The Result on Table 4 shows that there was a significant difference in the Livelihood Security of households within the three Local governments in Oyo State. Result of the analysis shows the significant difference (F=156.224; P=0.000) existed because the three local government had different characteristics based on their perception and strategy. Although farming

was the predominant occupation across the selected local government area despite that they fall in the same state.

This further explained according to quantitative report that the Livelihood security of Iseyin and Olorunsogo differs, also the Livelihood security of Olorunsogo and Ibarapa-East differs while there is no significant difference in the Livelihood security of household in Iseyin and Ibarapa-East.

Table 4: Analysis of Variance of Difference in the Livelihood security of household across the three local government areas

	Sum of Squares	df	Mean of Square	F	Sig	Decision
Between Groups	372.489	2	186.244	1 56.224	0.000	S
Within Groups	526.697	159	3.313			
Total	899.185	161				

Source: Field survey, 2019.

CONCLUSION AND RECOMMENDATION

Based on the findings of the study, socioeconomic variable such as age has no significant implication on the Livelihood security. This is because farming is predominantly carried out by middle aged people within the range of 37-

50 years, who are energetic and therefore more willing to participate in Livelihood activities than the elderly persons.

Livelihood security is concluded to be low because these indicators contribute enormously to the decrease in the rural household ability to

sustain their income, assets and social well-being. Even though the rural households tried diversifying, they find it difficult to afford or get good income from their other source of income.

Therefore, we recommended that formal education and training for the rural households should be encouraged using individual and mass communication with the aid of extension agents and radio programs.

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MEDIA USE FOR MALARIA INFORMATION DISSEMINATION TO RURAL DWELLERS IN IBARAPA EAST LOCAL GOVERNMENT AREA OYO STATE

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ABSTRACT
Media plays crucial role in disseminating health information and increasing awareness about health education however, information or communication channels used in Nigeria is deteriorating. Hence, the need to assess the media use for malaria information dissemination among rural dwellers in Ibarapa East Local Government Area of Oyo State, Nigeria. A multistage sampling procedure was used to select 125 rural dwellers, data on sources of malaria information, level of media use, preferred media, benefit of media and challenges of media use for malaria information respectively collected via questionnaire were analysed using both descriptive (tables, graphs) and inferential statistical (Chi-square, PPMC) tools. Result shows that mean age, household size and monthly income of the respondents were 41 years, 6 persons and of N38, 000 respectively. Majority (52.4%) were female, Christians (59.5%) and educated (88.1%). A high percentage (78.6%) of the respondents sourced their malaria information through radio while 89.7% preferred receiving malaria information through radio. Respondents benefited from enhanced knowledge on malaria prevention and control (89.7%). While they were faced with challenges of network failure (85.7%), no power supply (85.7%) and inadequate fund (85.7%) in using media to access malaria information respectively. The study concluded that majority of the respondent highly utilised media for malaria information in the study area. It is therefore recommended that there is need to encourage the use of modern infrastructural facilities among rural people to receive and utilise health information aside the use of radio.
Keywords: Media use, Malaria information, Preferred media, Rural dwellers, Oyo State

INTRODUCTION

Communication plays a significant role in promoting health, it's an integral aspect of interventions that strive to address individual, community and social factors and can have a significant impact on many levels of health intervention implementation (Okpobo and Aniwada, 2017). Multi-dimensional approaches have been employed to promote the use and uptake of malaria prevention and treatment. In Nigeria, mass media campaigns have been used for sensitization, the print and electronic media have been prominently used in behavioural change communications in many developing countries (Olajide, 2021). Since healthy citizens mean wealthy nation, and these rural dwellers provide most of the food and raw materials consumed by the country. Their general welfare such as rural health, education through communication and other social aspects are not taken into consideration during policy formulation and implementation. It is against this background that the research work determined the media use for accessing malaria information among the rural dwellers of Ibarapa East Local Government Area of Oyo State. The specific objectives of the study were to describe the socioeconomic characteristics, identify the sources of malaria information, ascertain the level of use of media for accessing malaria information, identify the preferred media for malaria information dissemination, access the benefits of media and ascertain the challenges to use of media for malaria information dissemination.

METHODOLOGY

The study was conducted in Ibarapa East Local Government Area of Oyo State. Ibarapa east covers an area of 832km, and has its headquarters located in Eruwa. It has a population of 118,226. It has an annual rainfall of about 900mm – 111200mm per annum. The major occupation in the study area is farming. Multistage sampling procedure was used to select 125 rural dwellers as sample size for the study. At stage 1, five wards were selected randomly from the 10 wards in the study. Stage 2 involves random selection of twenty-five (25) rural households each from the five wards to make up a total number of 125 rural households sampled for the study. Data were obtained using well-structured questionnaire with the aid of interview guide. Both descriptive statistics such as frequency, tables, percentage, and mean, and inferential statistical tools such as Chi-square and Pearson Product Moment Correlation (PPMC) were used to achieve the objectives.

RESULTS AND DISCUSSION
Socioeconomic characteristics

The distribution from the table 1 below shows majority of the respondents (39.7%) fall within the age range 34-50 years. The mean age was 48±17 years which suggest that most of the respondents were in their active and reproductive years. Majority of the respondents (52.4%) were female. Majority (65.1%) were married while (18.3%) of the respondents were single. The result in the table below shows that larger percentage (39.7%) of the respondents attended tertiary

education showing a level of literacy in the study area. The distribution reveals that majority (40.5%) of respondents had household size between the range of 5-6.

Table 1: Socioeconomic characteristics of the respondents

Variables	Frequency	Percentage
Age		
17-33	26	20.6
34-50	50	39.7
51-67	29	23.0
68-89	21	16.7
Marital status		
Single	23	18.3
Married	82	65.1
Separated	6	4.8
Divorced	3	2.4
Widow	8	6.3
Widower	4	3.2
Religion		
Christianity	75	59.5
Islam	49	38.9
Traditional	2	1.6
Educational level		
No formal education	15	11.9
Adult education	7	5.6
Primary education	21	16.7
Secondary education	33	26.2
Tertiary education	50	39.7
Household size		
Less than 3	11	8.7
3-4	49	38.7
5-6	51	40.5
7-8	12	9.5
9-10	3	2.4
Primary occupation		
Farmer	27	21.4
Teacher	39	31.0
Trader	27	21.4
Casual worker	16	12.7
Marketer	6	4.8
Student	11	8.7
Secondary occupation		
Civil servant	11	8.7
Self-employment	46	36.5
Farmer	36	28.6
Trader	16	12.7
Teacher	17	14.4
Average monthly income		
Less than 10,000	14	11.1
10,000-20,000	35	27.8
20,001-30,000	41	32.5
Above 40,000	36	28.6

Source: Field survey, 2022

Source of malaria information

Table 2 below describes larger percentage of the respondents in the study area (78.6%) states radio as their source of malaria information. Also (67.5%) responded they get malaria information from their friends and family, few (23.0%) of the respondents stated they receive malaria information from newspapers. The result implies that the main source through which the rural dwellers receive malaria information is through radio.

Table 2: Source of malaria information

Source	F (Yes)
Radio	99(78.6)
Television	56(44.4)
Internet	45(35.7)
Mobile phone	73(57.9)
Newspapers	29(23.0)
Friends and family	85(67.5)
Posters	38(30.2)
Health workers	42(33.3)

Source: Field survey, 2022

Level of use of media

Table 3 shows that more than half (74.6%) respond radio use always to receive malaria information, while (65.1%) of the respondents through friends and family. Also, more than quarter (32.5%) of the respondents reveals that they never used newspapers for malaria information. The result denotes that the main and fastest medium for malaria information among the rural dwellers in the study area was through the radio.

Table 3: Categorization of level of use of media

Usage level	Frequency	Percentage	Minimum	Maximum	Mean	SD
Low (2-14.8)	52	41.3	2	24	14.9	4.7
High (14.9-24)	74	58.7				
Total	126	100.0				

Source: Field survey, 2022

Preferred mode for malaria information

In Table 4, Majority (89.7%) preferred receiving malaria information through radio, while (86.5%) of the respondents prefers reception of malaria information through phone, voice and text communication. Furthermore (85.7%) of the respondents stated they prefer getting malaria information from friends, family, and health workers.

Table 4: Preferred mode for malaria information

Mode	Preferred	Not preferred
Video	89(70.6)	37(29.4)
Newspapers	58(46.0)	68(54.0)
Internet	71(56.3)	55(43.7)
Phone, voice and text communication	109(86.5)	17(13.5)
Radio	113(89.7)	13(10.3)
Posters	76(60.3)	50(39.7)
Friends, family and health workers	108(85.7)	18(14.3)

Source: Field survey 2022

Benefits of media for accessing malaria information

Table 5 majority of the respondents of about (89.7%) responded that media for accessing malaria information enhances knowledge on malaria prevention and control to a large extent, followed by (71.4%) which stated it improve modern health information system to a large extent. Furthermore (68.3%) of the respondents also stated it makes them understand messages better to a large extent.

Table 5: Benefit of media in accessing malaria information

Benefits	To a large extent	To a lesser extent	Rarely	Not at all
Understanding messages better	86 (68.3)	33 (26.7)	6 (4.8)	1 (0.8)
Making information easily accessible	80 (63.5)	42 (32.5)	4 (3.2)	1 (0.8)
Reduces family income on health matters	38 (30.2)	42 (33.3)	30 (23.8)	16 (12.7)
Improved health lifestyle	78 (61.9)	38 (30.2)	8 (6.3)	2 (1.6)
Enhances effective working capacity	75 (59.5)	39 (31.0)	9 (7.1)	3 (2.4)
Enhances patient safety and reduces stress	61 (48.2)	52 (41.3)	11 (8.7)	2 (1.6)
Enhances knowledge on malaria prevention and control	113 (89.7)	9 (7.1)	3 (2.4)	1 (0.8)
Improved delivery and effectiveness of malaria information	62 (49.2)	57 (45.2)	3 (2.4)	4 (3.2)
Creates dialogue between patients and health workers	80 (63.5)	33 (26.2)	8 (6.3)	5 (4.0)
Improved modern health information system	90 (71.4)	27 (21.4)	4 (3.2)	5 (4.0)

Source: Field survey, 2022

Challenges to accessing malaria information

Table 6 below shows the constraints to accessing malaria information in the study area, Majority (85.7%) stated that network failure, no power supply and inadequate fund are serious challenges. This implies that majority of the people may not have access to good electricity and good network. Also (65.1) stated language barrier as a serious challenge in the study area.

Table 6: Challenges to accessing malaria information

Challenges	Serious challenge	Mild challenge	Not a challenge
Lack of understanding	57 (45.2)	54 (42.9)	15 (11.9)
No power supply	108 (85.7)	12 (9.5)	6 (4.8)
Network failure	108 (85.7)	13 (10.3)	5 (4.0)
Inadequate fund	108 (85.7)	14 (11.1)	4 (3.2)
Illiteracy	67 (53.2)	36 (28.6)	23 (18.3)
Reliability of information	63 (50.0)	51 (40.5)	12 (9.5)
Inappropriate timing of message	68 (54.0)	50 (39.7)	8 (6.3)
Language barrier	82 (65.1)	32 (24.4)	12 (9.5)

Source: Field survey, 2022

Test of hypotheses

Table 7 reveals revealed there exist a significant relationship between the age (r=0.187, p=0.036), monthly income (r=8.555, p=0.036) and level of use of media (r=0.061, p=0.500). There exists a significant relationship between the preferred media and the level of use of media (r=0.722, p=0.000).

Table 7: Pearson Product Moment Correlation analysis result for test of relationship between the selected socioeconomic characteristics and level of use of media

Variables	r-value	p-value	Decision
Age	0.187	0.036	S
Household size	0.061	0.500	NS
Monthly income	8.555	0.036	S
Preferred media vs level of use of media	0.722	0.000	S

Source: Field survey, 2022

CONCLUSION AND RECOMMENDATIONS

The research work was able to identify the source of malaria information and the level of use of media by the respondents in the study area, their preferred mode for receiving malaria information. The study therefore concluded that that majority of the respondents had high usage of media in the study area. There is need for more sensitization for the rural communities on the importance of education in the study area to reduce illiteracy.

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RURAL WOMEN'S CHARACTERISTICS CONTRIBUTING TO HOUSEHOLD WELLBEING IN OLORUNSOGO LOCAL GOVERNMENT AREA OYO STATE, NIGERIA

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ABSTRACT
The study investigated the rural women's characteristics that enhanced the household wellbeing in Olorunsogo Local Government Areas of Oyo State. Multistage sampling procedure was used to select 120 respondents for the study using interview schedule. Data on respondents' socioeconomic characteristics, livelihood activities, living conditions, constraints to wellbeing, coping strategies employed, and dimensions of household wellbeing were collected and analysed using descriptive and inferential (PPMC). The result shows that the respondents mean age, household size and monthly income were 39.9 years and #24,699.15 respectively. The dimensions of household wellbeing were possessions of mobile phone (97.5%) and aluminium windows (97.5%) which was high for 67.5%. The respondents' main livelihood activities were Trading (WMS=2.53) and rearing of livestock (WMS=1.81) with 50% living condition's level. The main respondents' constraint to household wellbeing was low income (WMS=1.95) and was high for 56.7%; while the main coping strategy employed was to take less preferred and less expensive food (WMS=1.95) and was low for 55% of the respondents. Significant relationship existed between respondents age (r=0.836), monthly income level (r=0.403) and the respondents wellbeing. The high constraints of the respondents do not influence the respondents' wellbeing negatively due to the average living condition. Hence respondents should be encouraged to diversify their income sources for enhanced living condition to maintain the wellbeing status.
Keywords: Living condition, Coping strategies, Rural women, Household wellbeing, Rural livelihood activities.

INTRODUCTION

Women had been known for championing the course of food production across the value chain in developed and developing nations especially with the motive of meeting the household wellbeing needs (Adeniyi and Yekinni, 2020 and Amayo, Akidi, Esuruku and Kaptui, 2021). Adeniyi and Adebayo, 2021). According to FAO (2022) and Adeniyi and Adebayo, 2021, women play vital role in sustaining nutrition and food security at the household level, they have been said to be responsible for about half of the global food production in form of food crops (Cassava, maize, vegetables among others) and domestic animals (Poultry, sheep and goat) especially for their own household; while most of them are in control of the health wellbeing, education and nutrition security of members of the rural family. Women livelihood diversification has also been a surviving technique for women in rural community as it enhances and stabilizes their income (Adeniyi, 2020).

However, the activeness of women in pursuing their household wellbeing depends on the endowment and enablement of the available resources at their disposal. That is, their capability endowment though being constraints in their efforts to enhance their household wellbeing as greater number of them lack access and control over productive resources (Adeniyi, 2020). To this end they devise several coping techniques in other to stabilize and enhance the wellbeing status of the rural household. Hence, the need to study the Rural women' characteristics contributing to the household wellbeing in Olorunsogo Local Government Area Oyo state, Nigeria. The study ascertained the respondents' socioeconomic characteristics, examined the livelihood activities, identified the coping strategies employed, examined the constraints to household wellbeing and assessed the level of household wellbeing among the rural women in the study area. It was hypothesised that there is no significant relationship between the selected socioeconomic characteristics and the household wellbeing.

METHODOLOGY

The study area was carried out in Olorunsogo local government area in Oyo state with the latitude 8044'57" N, longitude 40 7'52" E. The primary data for the study was collected using a well-structured interview schedule. At the first stage, simple random sampling of 40% of the 10 wards in the LGAs was made the selected wards were Aboke; Onigbeti 1 (Iyamopo); Opa/Ogunniyi and Waro/Apata-Alaje. The second stage involved the proportionate selection of 40% of women from different household in the selected wards giving the sample size of 120 respondents. Descriptive distribution and inferential statistic (PPMC) were used to analyse the data. The respondents' dimension of wellbeing was measured by the material resources possessed. An index of wellbeing was calculated and was used to

categorise the respondents using the 'greater than and lower than the mean' criterion. The respondents living conditions was captured with the scale of always (3), sometimes (2), rarely (1) and not at all (0). The weighted mean score was used to rank each of the conditions in descending order. An index of living condition was calculated and was used to categorise the respondents into high and low categories using the 'greater than and lower than the mean' criterion. The respondents coping strategies was measure with the scale of always (3), sometimes (2), rarely (1) and not at all (0). The weighted mean score was used to rank each of the coping strategies in descending order. An index of coping strategies was calculated and was used to categorise the respondents into high and low categories using the 'greater than and lower than the mean' criterion. Constraints faced by the respondents in contributing to household wellbeing were measured with the scale of very

severe (3), severe (2), mild constraint (1) and not a constraint (0). The weighted mean score was used to rank each of the constraint in descending order. An index of constraint was calculated and was used to categorise the respondents into high and low categories using the 'greater than and lower than the mean' criterion. Socioeconomic variables were measured accordingly.

RESULT AND DISCUSSION
Socioeconomic characteristics
The result in Table 1 shows that the respondents mean age, numbers of year spent in school, household size and monthly income were 39.9 and 7.6 persons and #24,699.15 respectively. This implies that respondents' educational years and monthly income may have an influence on the contribution of the respondents to household wellbeing (FAO, 2022).

Table 1: Distribution of Respondents according to socioeconomic characteristics

Socioeconomic characteristics	Percentage	Mean
Age		
20-29	15.0	
30-39	36.6	
40-49	30.0	39.9 years
50-59	13.3	
Above 60	4.9	
Income level		
1000-20000	58.9	
21000-40000	25.8	
41000-60000	12.4	#24,699.15
Above 60000	3.3	
Total	100.0	

Source: Field survey, 2021

Distribution of respondents according to living conditions
Result in Table 2 shows that 61.7% of the respondent uses water closet and few (4.2%) uses bucket latrine, while most of the respondents indicated well (95.0%) and public borehole

(80.8%) as their sources of water. This implies that clean source of toilet and water were available for the respondents, which may prevent them from polluting the environment, free of water borne diseases and enhance the household wellbeing (FAO, 2022 and Adeniyi, 2020).

Table 2: Distribution of Respondents' living conditions

Living conditions	Percentage
Type of toilet	
Use of pit latrine	34.2
Use of bucket latrine	4.2
Use of water closet	61.7
Source of water	
Public pipe borne water	27.5
Public borehole water	80.8
Private borehole water	40.0
Well	95.0
Stream	19.2

Source: Field survey, 2021   * Multiple response

Distribution of respondents according to dimension of household wellbeing

The results in Table 3 shows that owning a mobile phone (97.5%) and dwelling in the house with an aluminium window (97.5%) ranked first among the dimension of household well-being.

Table 3: Distribution of Respondents according to Dimension of household wellbeing

Dimension of Household wellbeing	Percentage
Own a mobile phone	97.5
Dwelling has an aluminium window	97.5
Have a toilet in the residence	93.3
Good source of water	91.7
Level of household wellbeing	
Low household wellbeing	32.5
High household wellbeing	67.5

Source: Field survey, 2021

Livelihood activities engaged in by rural women

Result in Table 4 shows that trading (2.53) and raising of livestock (1.81) were the 1st and 2nd livelihood activities engaged in by the respondents with teaching (0.44) being the least activities engaged in.

Table 4: Distribution of Respondents Livelihood Activities Engaged by Rural Women

Livelihood Activities	WMS	Rank
Trading	2.53	1st
Raising livestock	1.81	2nd
Crop production	1.53	3rd
Making of yam flour	1.51	4th
Selling of charcoal	1.13	5th
Teacher	0.44	12th

Source: Field survey, 2021

Coping strategies employed by the rural women

Result in Table 5 shows that the main coping strategies employed by the respondents was to rely on less preferred and less expensive food (1.95), this was closely followed by limiting the ration at mealtime (WMS of 1.51) with the least strategy employed being sending household members out for begging for food. This implies that respondents were able to mitigate the constraints to the wellbeing of their households.

Table 5: Distribution of respondents according to the coping strategies employed

Coping strategies	WMS	Rank
Rely on less preferred and less expensive food	1.95	1st
Reduce the size of meal	1.51	2nd
Purchase food on credit	1.43	3rd
Restrict consumption by adults in other for small children to eat	1.42	4th
Reduce number of meals eaten in a day	1.40	5th
Send household members to beg for food	0.08	12th
Level of coping strategies	**Frequency**	**%**
Low coping strategies	60	50
High coping strategies	60	50

Source: Field survey, 2021

Constraints faced by rural women in contributing to household wellbeing

Findings from Table 6 shows that the most severe constraints to the household wellbeing was low income from livelihood activities (2.31) this was closely followed by insufficient capital (2.30) and was high for 57.6%. This shows that low income was the main constraints to respondents' wellbeing as it was an hinderance for effective contribution to the wellbeing of their household (Duntoye and Mbaegbu, 2022).

Table 6: Distribution of respondents according to constrains faced by rural women in contributing to household wellbeing

Constraints	WMS	Rank
Low income	2.31	1st
Insufficient capital	2.30	2nd
Joblessness	1.81	3rd
Poor health care facilities	1.78	4th
Being a Divorcee	0.15	9th
Level of constraint	**Frequency**	**%**
Low constraint	51.96	43.3
High constraint	68.04	56.7

Source: Field survey, 2021

Relationship between respondents' socioeconomic characteristics and household wellbeing

The result in Table 5 shows a significant relationship between respondents' age (r=0.836), monthly income level (r=0.403), household size (0.263) and the respondents wellbeing. The result indicates that the age and income of the respondents translated to their wellbeing

Table 5. Relationship between respondents' socioeconomic characteristics and household wellbeing

Variables	r-value
Age	0.836*
Monthly income	0.493*

Source: Field Survey, 2012   *p ≤0.05 level

CONCLUSION

The study concluded that livelihoods of rural women characteristics like age and income level significantly engineered the wellbeing status with moderate living condition. However, the coping strategies employed by the respondents was able to put a check on the constraints to their wellbeing, while the constraints to the wellbeing inform their living condition. The study recommends that respondents should pull their resources together or visit the Bank of Agriculture for loan to expand their economic opportunities to overcome the main constraints faced towards the household well-being.

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EFFECTS OF COVID-19 LOCKDOWN ON STUDENTS' LEARNING ATTITUDE IN IFEDORE LOCAL GOVERNMENT AREA, ONDO STATE, NIGERIA

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ABSTRACT

School closures arising from COVID-19 lockdown was one of the measures to contain the spread of COVID-19 pandemic in the country. While schools in urban areas switched to virtual learning, those in the rural areas could not. As quality education is the bedrock of rural development and food security, the study therefore examined the effects of COVID-19 lockdown on students' learning attitude. The study randomly sampled 100 high school students in public secondary schools. Data was collected through structured questionnaire and analysed through descriptive and inferential statistics. The results showed that 58.7% of the students had very good knowledge of COVID-19, 32.6% had good knowledge and 8.7% had poor knowledge. There was a significant difference between students' attitude to learning before ($\bar{x}=1.90$) and after ($\bar{x}=2.11$) COVID-19 lockdown. The resilience in high school students to learning despite the disruption occasioned by COVID-19 pandemic should be leveraged as opportunity in them to serve as agents of social change in the rural areas.

Keywords: COVID-19 lockdown, Food security, High school students, Learning attitude

INTRODUCTION

With its population and geographical spread, response to infectious diseases in Nigeria has always posed a public health challenge. Prominently, Nigeria has battled with five major emerging and re-emerging infectious diseases outbreaks, namely, Lassa fever, Monkey Pox, Ebola Virus Disease, Yellow Fever, and Poliomyelitis (Olumade, *et al.*, 2020). Also, just like other countries of the world, Nigeria had her feel of the current and global Coronavirus Disease (COVID-19). The World Health Organisation (WHO) first declared COVID-19 a world health emergency in January 2020. Since then, the epidemic has disrupted virtually all spheres of human endeavours including the educational sector. In an attempt to contain the spread of the virus, schools were shut to an estimated 1.5 billion children from pre-primary to higher education as at mid-April 2020 in 195 countries (UNESCO, 2020),

In Ondo state, secondary schools were shut down for the whole of the second term during the 2019/2020 academic session. Although some of the students were engaged in virtual learning, the majority and especially those in the rural areas were not privileged of this opportunity due to issues around access and affordability. The situation gave rise to some of the students experimenting with some money-making ventures. Now that schools have been reopened, it is imperative to examine students' attitude towards learning. There is no gainsaying the fact that students' attitude to learning will pay off not only on their growth and development but on that of their parents. A well-educated child in a community can be a change agent for creating awareness and adoption of proven agricultural technologies. It is therefore expedient through this study to examine the effect of COVID-19 lockdown on students' attitude to learning in Ondo state. The study proceeded with the following objectives: (i) ascertained students' knowledge of COVID-19 and (ii) determined students' attitude to learning before and after COVID-19 lockdown. The study hypothesized that, there was no significant difference between students' attitude to learning before and after COVID-19 lockdown.

METHODOLOGY

Using multi-stage sampling procedure, Ifedore Local Government Area (LGA) was purposively selected from among the rural LGAs in Ondo state. In the second stage, five major towns were randomly selected from identified ten major towns in the LGA. Thirdly, one senior secondary school was randomly selected from each of the five major towns. The five schools and number of students sampled were: Anglican Grammar School, Igbara Oke (17), The Apostolic High School, Ilara Mokin (29), Ayo Grammar School, Ipogun (15), Anglican Grammar School, Ero (21) and Jooro High School, Ibule-Soro (18). Thus, a total number of one hundred (100) students constituted the sample size for this study. Meanwhile, ninety-two (92) questionnaires were found suitable for use and data was analysed using SPSS version 23. Knowledge test comprising of twenty different questions was used to ascertained students' knowledge of COVID-19. Correct answer attracts 1 while incorrect answer attracts 0. Students' attitude to learning was measured using a four-point rating scale of very often (4), often (3), sometimes (2) and never (1). The mid-point of 2.5 was used to categorise the students into favourable attitude to learning and unfavourable attitude to learning. The hypothesis was analysed using independent t-test.

RESULTS AND DISCUSSION

Categorization of students' knowledge on COVID-19

The results in Table 1 shows that 58.7% of the students had very good knowledge, 32.6% had good knowledge and 8.7% had poor knowledge of COVID-19. The good proportion of the students having very good knowledge of the virus indicates that the awareness campaigns of the virus have been very effective even at rural areas. The findings correlate with Umar *et al.*, (2022) in which 90% of Baptist High School, Lafia, Nigeria had adequate knowledge of COVID-19. This good knowledge among the students is expected to translate to better practices against the spread of the virus among the students. Also, the students are expected to use this knowledge to serve as change agent by sensitizing and educating their parents and others about the disease.

Table 1: Categorization of students' knowledge on COVID-19

Remarks	Scores	F	Percent
Poor	<10	8	8.7
Good	11 - 14	30	32.6
Very Good	>15	54	58.7

Source: Field survey, 2021

Students' attitude to learning before and after COVID-19 lockdown

Results in Table 2 show that lateness to school by the students was more before ($\bar{x}$=3.48) COVID-19 lockdown than after ($\bar{x}$=3.20). Similarly, absenteeism to school was higher before ($\bar{x}$=3.51) than after ($\bar{x}$=3.20) the lockdown. Also, students made less visit to Library before ($\bar{x}$=2.26) than after ($\bar{x}$=2.47) COVID-19 lockdown. The situation of students being unhappy whenever a teacher missed his class increased after ($\bar{x}$=2.40) than before ($\bar{x}$=2.30) the lockdown. Overall, the students had favourable attitude to leaning after ($\bar{x}$=41.1) COVID-19 lockdown than before ($\bar{x}$=36.1).

Table 2: Attitudes of students towards learning before and after COVID-19 lockdown

S/No.	Attitudinal statements	Before ($\bar{x}$)	After ($\bar{x}$)
1.	I usually come late to school	3.48	3.20
2.	I am occasionally absent from school	3.51	3.20
3.	I regularly visit the library to read my books	2.26	2.47
4.	I am being unhappy whenever a teacher misses his class	2.30	2.40
5.	I always ensure that extracurricular activities do not affect my study times	1.83	2.23
6.	I now spend less time with my friends to give room for studies	1.89	2.32
	Grand Mean	**36.1**	**41.1**

Source: Field survey, 2021

Hypothesis testing

H₀1: There is no significant difference between students' attitude to learning before and after COVID-19 lockdown.

Results in Table 3 show that there is a significant difference between students' attitude to learning before and after COVID-19 lockdown. The students' attitude to learning after COVID-19 lockdown (2.11) was better than before the lockdown (1.90). It was possible that the students showed renewed interests in learning after the lockdown to cover the lost ground or to catch up with their mates who had opportunities for virtual learning during the period. This agrees with Mirahmadizadeh *et al.*, (2020) that found that students were enthusiastic to learning despite schools' closure because of COVID-19 pandemic. Thus, COVID-19 lockdown could not be considered as a new factor for widening existing educational gap between the urban and rural areas.

Table 3: T-test result of students' attitude to learning before and after covid-19 lockdown.

Variables	r- value	Mean	p-value	Decision
Attitude to learning before COVID-19 lockdown vs	0.107	1.90	0.01	Significant
Attitude to learning after COVID-19 lockdown		2.11		

P<0.05

Source: Field survey, 2021

CONCLUSION AND RECOMMENDATION

While COVID-19 brought about disruption to all spheres of lives including education. High school students were able to withstand shocks occasioned by the lockdown due to good knowledge of the virus. Similarly, the lockdown could not be considered as an additional factor for the existing educational gap between the rural and urban areas as the attitude of the students to learning was favourable after the lockdown. The students have therefore been able to demonstrate the ability to withstand and recover better despite the effects of the lockdown on their learning attitude. With the shortage of health personnel in creating and promoting awareness in the rural areas, relevant government ministries and agencies should consider the use of high school students as change agents in rural areas.

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THE ROLE OF HOME GARDENING INVOLVEMENT TO THE WELFARE OF RURAL HOUSEHOLDS IN EGBEDA LOCAL GOVERNMENT, OYO STATE

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ABSTRACT

The study investigated the contributions of involvement in home gardening to the welfare of rural households in Egbeda Local Government Areas of Oyo State. Multistage sampling procedure was used to select 120 respondents for the study using interview schedule. Data on respondents' social-economic characteristics, involvement in home gardening, benefits derived from home gardening and welfare status were collected and analysed using descriptive and inferential statistical (PPMC) at $\alpha_{0.05}$. Result shows that the respondents' mean age, household size and monthly income were 43.0±13.0 years, 5.0±3.0 persons and N145,000 respectively. The most involved home gardening was cultivation of Corchorus ($\bar{x}$ =1.57) which was high for 55.6%. The most benefits derived from home gardening was easy source of fresh food ($\bar{x}$ =1.66); and was high for (62.4%) of the respondents. The welfare status of the respondents was better off for 55.6%; with the most consumed food item being Rice ($\bar{x}$ =3.36) while the respondents' highest expenditure mean was on Food items (#95,000). A significant relationship existed between respondents' age (r=0.357), household size (r=0.207), involvement in home gardening (r=0.299), benefits derived (r=0.205) and respondents' welfare status. The study concluded that the respondents had better welfare status based on their involvement in home gardening. Hence, the home gardening should be encouraged for better household nutrition.

Keywords: Home gardening, welfare status, backyard farming, nutrition security

INTRODUCTION

Backyard farming has been one of the routes to sustainable food availability and accessibility for households in urban and rural communities. Home gardening could be described as ability of an individual to cultivate crops and rears animal with the motive of making food available for the households. It has always been practiced within the vicinity of farmers dwelling place (Rick, 2022). The act could be described as a conscious effort made by an individual to grow and harvest fruits (Orange, Guava, Mangoes, Cashew, Pear, African cherry, Pawpaw among others), food crops (Yam, Cassava, Maize, Cocoyam, Potatoes) and vegetables (Tomatoes, Pumpkin, Okra, Amaranthus, Bitter leaf, Garden egg, Cucumber, Chocorus among others) even on available and accessible small area of land. Studies have shown that backyard farming is been carried out at the individual comfort zone especially in developing nation using uncompleted building, small portion of land at the backyard or compound, use of broken domestic containers, flower vase among others (Crow, 2021). However, researchers and some concerned Non-Governmental Organization (NGOs) like the Food and Agricultural Organization of the United Nations (FAO), have observed the need for farmers and households to practice a kind of garden where both crops and livestock (Domestic fowl, Duck, Geese, Goat, Sheep among others) are kept in a properly managed manner to ensure year-round access to farm produce with minimal resource input for the household welfare (FAO, 2017 and Adeosun, Nnaji and Onyekigwe, 2020).

This study examined the contribution of the respondents' involvement in home gardening on the welfare of households at Egbeda local government of Oyo State. This study assessed the respondents' socioeconomic characteristics, ascertained the level of involvement in home gardening, identified the benefits derived and examined the respondents' welfare status. The study hypothesised that there is no significant relationship between the respondents' welfare status and the selected socioeconomic characteristics, and the level of involvement in home gardening.

METHODOLOGY

The study was carried out in Egbeda Local Government Area of Oyo State, Nigeria with latitude 70 21' - 80N and longitude 40 02'- 40 28'E and covers the land area of 191 sq. Km. The area is predominantly occupied by farmers who practice either on subsistence or commercial basis. The local government area has 11 wards with the notable rural villages being Erunmu, Alugbo, Osegere, Owo Baale, Kasumu/Ajia, Adeyadi, Ayede, Fayo, Koloko and Olorisa Oko among others. The research was carried out using a multistage sampling procedure to select 120 respondents from the study population of households practicing home gardening in Egbeda Local Government. The first stage was purposive selection of six (50%) wards (Kasumu/Ajia, Adeyadi, Erunmu, Osegere, Ayede and Olorisa Oko) that predominantly engaged in home gardening. In the second stage, list of households in the selected wards was generated and 25% of households who engaged in home gardening across

the selected wards was randomly selected to give a sample size of 120 respondents. Descriptive and inferential statistics was used to analyse the data collected. Dependent variable was operationalized by finding the number of times respondents consumed a specific food items on monthly basis and the amount they spend on food and non-food items. Household monthly food items consumed was captured using the scale of (1-2 times (1), 3-4 times (2), 5-6 times (3), 7-8 times (4), 9-10 times (5), 11 times and above (6)). The mean of each item was found and was used to rank the monthly food item consumed in descending order, while the monthly expenditure was measured in naira. Thereafter, the scores from monthly food items consumed and the monthly expenditure on items was standardized and was used to categorise the respondents as having better or poor welfare status using above and below the mean criterion. The respondents' involvement in home gardening was measured on a 3-point scale of highly involved (2), involved (1) and not involved (0). Index of involvement was captured and was used to categorise the respondents into low and high level of involvement in home gardening respectively based on the index mean of 16.7. The benefits

derived from involvement in home gardening was measured with the scale of high benefits (2), moderate benefits (1), and not a benefit (0). The mean was used to rank the benefits derived in descending order, while the index of the benefit derived was used to categorise the respondents into high level and low level of benefits using above and below the mean criterion. The respondents' socioeconomic characteristics like age, religion, household size, social association belonged among others was measured accordingly.

RESULTS AND DISCUSSION
Socioeconomic characteristics

Result of age in Table 1 shows that 35.9% of the respondents were aged between 35-47 years with the mean age being 43±13 years. The result in Table 1 further shows that most of the respondents involved in home gardening were married (79.5%) with mean household size and monthly salary being 5±3 persons and N145,000 respectively. The involvement of women in home gardening may be an indication that women are more concerned with household food security (Adeosun, Nnaji and Onyekigwe, 2020).

Table 1: Socioeconomic characteristics of the respondents

Variables	Percentage	Mean	SD
Age		43 years	13 years
22-34	29.1		
35-47	35.9		
48-60	25.6		
61-73	6.8		
74-87	2.6		
Marital status			
Single	18.8		
Married	79.5		
Widow	1.7		
Household size		5 persons	3 persons
1-3	24.8		
4-6	60.7		
7-9	10.3		
10-12	2.6		
13-17	1.7		
Monthly income		#145,000	#140,000
2,000-142,000	65.8		
142,001-287,001	18.8		
287,002-429,002	6.8		
429,003-571,003	7.7		
571,004-700,000	0.9		

Source: Field survey, 2021

Involvement in home gardening

The result of respondents' involvement in home gardening (Table 2) reveals that the mostly cultivated crop were Corchorus (*ewedu*) (1.57) and tomato (1.41) with least cultivated crops being eggplants (0.66) respectively, as the involvement

was high for 56.6%. This implies that backyard farmers focused more on vegetables which might be the most convenient crops to grow for the daily need of their household (Adeosun, Nnaji and Onyekigwe, 2020).

Table 2: Level of involvement in home gardening

Crop Type	Botanical Name	Mean
Jut leaf (*ewedu*)	*Corchorus olitorius*	1.57
Tomato	*Lycopersicon esculentum*	1.41
Bitter leaf	*Vernonia amygdalina*	1.29
Celosia (*soko*)	*Celossia Argentina*	1.29
Onions	*Allium sepa*	1.26
Carrot	*Daucus carot*	1.24
Eggplants	*Solanm melonge*	0.66
Level of Involvement		**%**
Low involvement		44.4
High involvement		55.6

Source: Field survey, 2021

Benefits derived from involvement in home gardening

The result in Table 3 shows that the most benefit derived by the respondents in their involvement in home gardening was the easy access to fresh foods (1.66) which was closely followed by better nutrition opportunity (1.61) and the benefits were high for 62.4% of them. This implies that there are good number of reasons that could actively keep them in backyard farming especially on nutrition security (Crow, 2021 and Rick, 2022).

Table 3: Benefits derived from involvement in Home Gardening

Benefits Derived	Mean
Easy source to fresh food	1.66
Better Nutrition	1.61
Better care for children	1.59
Incentive opportunity	1.12
Level of benefit derived	**%**
Low benefit	36.6
High benefit	62.4

Source: Field survey, 2022

Welfare status of respondents
Monthly household Food items consumption

Result of food items consumed by the respondents as presented in Table 4 shows that the most consumed food items were rice (3.36), meat (3.16) and plantain (2.87) with the least monthly consumed food item been cocoyam (1.52).

Table 4a: Monthly household food items consumption

Food items	Mean
Rice	3.36
Meat	3.16
Plantain	2.87
Bread	2.86
Egg	2.84
Vegetables	2.81
Beans	2.60
Fufu	1.71
Cocoyam	1.52

Monthly household expenditure on items

Result on monthly expenditure (Table 4b) shows that the item with the highest expenses was food (N95,000) which was followed by school fees payment (N93,000). This implies that feeding takes the lion share of the monthly household expenses and further suggests that accommodation is cheaper in rural communities.

Table 4b: Selected Household monthly expenditure

Expenditure on Items	Percentage	Mean	SD
Food items		95,000	90,000
2,000-92,000	55.6		
92,001-182,001	26.5		
182002-272,002	15.4		
≥272,003	2.5		
Education (School fees and other levies)		93,000	90,000
3,000-93,000	57.3		
93,001-183,001	25.6		
183,002-273,002	12.0		
≥273,003	5.0		

Welfare status Level	Percent
Poor welfare status	44.4
Better welfare status	55.6

Source: Field survey, 2022

Welfare status of respondents
Relationship between respondents' selected variables and welfare status
        Result on Table 5 shows that a significant relationship existed between respondents' marital status (χ^2=11.321), age (r=0.357), household size (r=0.205), benefits derived from home gardening, involvement in home gardening (r=-0.299) and respondents' welfare status in the study area.

Table 5. Relationship between respondents' selected variables and welfare status

Variables	r-value	
Age	0.357*	
Household size	0.205*	
Involvement index	0.299*	
Benefits index	0.205*	
Variables	**χ^2 –value**	**df**
Marital status	11.321*	2

  Source: Field Survey, 2012   ***P ≤0.05 level**

CONCLUSION AND RECOMMENDATIONS
        The study concludes that age, household size, marital status, benefits derived and involvement in home gardening do inform the welfare. The involvement in backyard farming gives the respondents direct access to fresh food that promote food security while food items and education forms the bulk of the household expenditure. The study recommends that home gardening practices should be encouraged in homes for better household nutrition and should be orientated towards wealth creation.

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