UNIVERSITY OF PORT HARCOURT

THE STOMACH AND NEIGHBOURS HAVE DEAF EARS TO ECONOMIC AND TECHNICAL LANGUAGES OF FOOD INSECURITY

A VALEDICTORY LECTURE

By

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PROGRAMME

1. GUESTS ARE SEATED

2. INTRODUCTION

3. THE VICE-CHANCELLOR'S OPENING REMARKS

4. CITATION

5. THE VALEDICTORY LECTURE

The lecturer shall remain standing during the citation. She shall step on the rostrum, and deliver her Valedictory Lecture. After the lecture, she shall step towards the Vice-Chancellor, and deliver a copy of the Valedictory Lecture and return to her seat. The Vice-Chancellor shall present the document to the Registrar.

6. CLOSING REMARKS BY THE VICE-CHANCELLOR

7. VOTE OF THANKS

8. DEPARTURE

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- Heads of Departments,
- Distinguished Professors and Scholars,
- Distinguished Political Office Holders here present,
- Staff and Students, University of Port Harcourt and other Universities,
- Distinguished Guests,
- Ladies and Gentlemen!

DEDICATION

I dedicate this Valedictory Lecture to:

- The Almighty, Omnipresent and Omniscient God.
- My Parents, Late Ven. S. Y. Chukuigwe (Rtd) and Rtd Matron I. C. Chukuigwe.
- My Ever Cherished Late Husband, Sir N. N. Akaninwor.
- My Loving Children: Buduka, Chinwe, Habinuchi, Manuchimso, Akpenuchi, their Spouses and my Grandchildren, Maxwell, Marvel, Charlene, Manfred & Charlotte.

ACKNOWLEDGEMENTS

My Vice Chancellor Sir, I crave your indulgence to acknowledge those who played useful and encouraging roles in my life.

I reverence the Almighty God, my Saviour, Redeemer and All Sufficient Creator of the Universe who found me worthy to be part of this world, nurtured me, upheld me in His Righteous Right Hand and led me into University of Port Harcourt in the year 1981 to serve at the lowest Academic Status, Graduate Assistant, led me through these 44 years and honored me to retire as a Professor, the highest Academic status. May His name be glorified above all gods and all Glory ascribed unto Him alone for no man can share His Glory. I remain humble to Him and pledge to worship and service with my entire family, for we have vowed to serve God all the days of our lives.

My acknowledgement goes to my parents, late Ven. S. Y. Chukuigwe (Rtd) and Rtd Matron I. C. Chukuigwe who made sure I was educated even when education of the Girl Child was not a priority. I am thankful to my Aunt, Dame Chief E. Igwe and her late husband Sir. I. Igwe who also nurtured me to what I was prior to my marriage while living with them. They are all my Role Models.

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My thanks go to my lovely Children, Buduka, Chinwe, Habinuchi, Manuchimso and Akpenuchi who have always been and still my succour in times of tribulations as I was bearing and nurturing them alongside my studies and duty calls, a task that was not very easy for all of us from all ramifications.

Let me use this God given opportunity to sincerely thank my Academic Mentors: Emeritus Prof. Bene Willey Abbey, late Prof. E. O. Anosike, late Prof. E. O. Ayalogu, late Prof. G. I. Ekeke, Prof. A. I. Spift, Emeritus Prof. S. C. Achinewhu, Emeritus Prof. O. A. Nduka and all Deans of Faculty of Science I worked with (past & present), to mention but a few. I also thank all other academic colleagues of mine including non-academic staff of the Department of Biochemistry & Faculty of Science, University of Port Harcourt.

Let me pay tribute to late Prof. N. Briggs (who delivered all my five children and my one time Vice Chancellor), Prof. T. Vincent, Late Prof. S. N. Okiwelu, Prof. M. N. Oti, Prof. Amajor, Late Prof. F. A. Onofeghara, Prof. Roseline Konya, Prof. B. C. Didia, Prof. B. E. Okoli, late Prof R. Green-Osaoghulu, my Secondary School Teachers and Mentors, late Prof. J. Georgewill, Mrs Ngo Ogan, late Mrs. Chinyere Wokeidu and late Oha Assor etc. who I admired and still admire their prowess in Academic Excellence at my early stage of life and vowed to follow their footsteps, a decision which has brought me this far.

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Faculty, where I served and had all their Professors pass through me. Thank you for allowing and enjoying my Academic Prowess/Leadership.

It is worthy of note that many who passed through me as part of their Mentors, either academically or administratively are now Doctors, Professors and well established Persons. To mention but a few, Prof A. A. Uwakwe, Prof. M. O. Wegwu, Prof. C. C. Monago-Ighorodje, Prof. E. B. Essien, Prof. C. U. Ogunka-Nnoka, Prof. L. C. Chuku, late Prof. F. C. Anacletus, Prof. D. E. Peters, Prof. J. C. Ikewuchi, Prof. C. C. Ikewuchi, Prof. S. I. Omeodu and all other academic Lecturers in the Department of Biochemistry University of Port Harcourt. Also, Prof. Ojimba, Prof. Offor, Prof. Ogundu, Prof. Anyanwu, late Associate Prof. Nwankwo, Prof. Ann Asouzu, Prof. R. Azunwena, Prof. A, Kalio, Prof. Ukah, Prof. Udulbiam, Associate Prof. Nyems-Natribo, Associate Prof. Emeha, Associate Prof. Igwere Agbara, Drs. Amaechi, Sonye, Chuku, Odinga and a host of others.

Special thanks go to my siblings late Smyles Chukiugwe, late Ada Chukuigwe, Prof E. Chukuigwe, Ven (Engr.) A. O. Chukuigwe (Rtd), late Engr. Nnadi Chukuigwe, late Meziem Chukuigwe, Sir Adindu Chukuigwe, Mrs. Carol Madume, Mrs. Nkechi Imenwo, late Mr. Ezemonye Chukuigwe, Mr Guy Chukuigwe, Madam Ngozi Chukuigwe, Mr. Chijioke Chukuigwe, Mr. Nkem Chukuigwe and their individual families as well as my Auntie Eunice Igwe's Children Agundu, Nwanyinma, Dandy, Eze and Nyelekachi. They all gave me good support through their good wishes and prayers.

My thanks go to all my friends and well-wishers, Academic and Non-academic staff as well as Students of University of Port Harcourt, University of Benin, Rivers State University,

Kenule Beeson Ken Saro-Wiwa Polytechnic Bori, University of Uyo, University of Abuja, University of Calabar, Cross Rivers State University of Technology, Calabar and Ignatius Ajuru University of Education, Rivers State for all the opportunities they gave me to serve in one capacity or the other.

Let me at this point thank His Excellency Chief Barrister Nyesom Wike DSSR, former Governor of Rivers State and now Minister of Federal Capital Territory for finding me worthy at different categories of appointments as well as all his Political Associates/Stakeholders that I worked with, both at State and Federal levels in the likes of Hon. O. K. Chinda, Hon. Blessing Amadi and Hon. C. Ariolu to mention but a few. I'm particularly grateful for my recent appointment as a member of the recently constituted RSIEC Board.

Mention must be made of my Spiritual Fathers in the Dioceses of Niger Delta North, Ikwere, Ahoada, Etche, Ogoni and Evo led by Archbishop Dr. I. C. O. Kattey JP DSSR (Rtd), ArchBishop B. Enyinda DSSR and particularly my own Diocesan Bishop Rt. Rev. Wisdom Ihunwo DSSR, Bishop Diocese of Niger Delta North. May God see them through and water their lives and those of their family members as they have watered mine and those of my family members.

To the entire Isokpo and Rumueme Communities, I send my acknowledgement for giving birth to and marrying a Hardworking, God Fearing, Academic Per Excellence and Worthy "GIRL CHILD" of my Generation respectively. I humbly pass this acknowledgement through the Traditional Rulers of both Communities. I appreciate and love all of you.

I must thank all my Project Students (Undergraduate & Post-Graduate) in all the Universities I served as Full Time, Adjunct, Visiting Lecturer and External Examiner. I must acknowledge all Non-academic Staff of all the Universities I have listed that touched my life or were touched by my own life. I am sending this message through my sister, Mrs. Owhondah-Wopara (Rtd) and the Registrar, Mrs Gloria Chindah. I thank Dr. Samson Eruke Okoro of the Department of Biochemistry, University of Port Harcourt for typing and putting this work together; My God will bless you and all yours.

Finally, as I bow out of University of Port Harcourt today after my Dedicated Service and Meritorious Tutelage to Humanity, I say Shalom to All and Sundry. Please, find time to meet me in my Poultry and Fish Farms, as well as, other businesses as I remain not 'TIRED' but 'RETIRED'. God bless you all.

1.0 INTRODUCTION

1.1 Preamble

Imagine the danger of living in a world where people face each day with no food, no water, and the uncertainty of where their next meal will come from!

Now, Imagine a world faced with full-blown food scarcity due to factors such as Population Growth, Unpredictable Weather, and Resource Depletion!

Imagine having a world without hunger, through Smart Farming, Innovative Solutions and Collaborative Efforts possible!

The fact remains that the resultant Insecurity, Socio-Economic, and Health challenges associated with a population faced with critical Food and Nutrition crisis are quite unimaginable!

Nutrition is an area in Biochemistry, otherwise known as Chemistry of life and includes study of Health and Chemical Processes. The human body runs like a well-oiled machine due to the thousands of chemical processes that are occurring inside it every second of each day. It's important to support these processes fully by providing the body with a wide variety of nutrients. Foods provide the nutrients needed by the body to grow, repair, regulate, and maintain itself for longevity.

1.2 Food Security

Food Security exists when all people, at all times, meet their Dietary Needs and Food Preferences for an active and healthy life." (World Food Summit, 1996). It is a critical component of global health and well-being. Lack of Food Security has both immediate and long-term effects on individuals, communities, and nations.

According to the World Bank Group (2025) and Food and Agriculture Organization (2008), four dimensions of Food Security must be fulfilled simultaneously, for its objectives to be realized. The four main dimensions of food security are:

i. **Physical Availability of Food:** Food availability addresses constant availability of food produced both locally and imported, determined by the level of food production, stock levels and net trade.

ii. **Accessibility:** The food can reach the Consumer via transportation/infrastructure and the Consumer has enough money for purchase. To such physical and economic accessibility is added Socio-Cultural access to ensure that the food is culturally acceptable and that Social Protection nets exist to help the less priviledged.

iii. **Food Utilization:** Utilization is commonly understood as the way the body makes the most use of various nutrients in the food. Sufficient energy and other nutrient intake by individuals result in good care and

feeding practices through food preparation, diversity of the diet and intra-household distribution of food. These combine with good biological utilization of food consumed and determine the Nutritional Status of individuals; in other words, the individual must be able to eat adequate amounts both in quantity and quality in order to have a healthy life. Food and water must be safe and clean, and thus adequate sanitation must be involved at all levels; a person must also be physically healthy to be able to digest, absorb and utilize the food consumed.

iv. **Stability of the other three Dimensions over time:** Please note that when your food intake is adequate today, you may be considered to be food insecure if you have inadequate access to food on a periodic basis, causing a deviation on your Nutritional Status. Adverse Weather Conditions, Political Instability, or Economic Factors (unemployment, rising food prices) may have an impact on your Food Security status. This fourth aspect deals with the ability of the Nations/Communities/Households/Persons to withstand shocks from the Food Chain System caused by Natural Disasters (Climate, Earth Quakes) or are Man-Made (Wars and Economic Crises).

Quite recent developments emphasize the importance of Sustainability, which may be considered as the long-term time (fifth) dimension to Food Security. Sustainability involves indicators at a Supra-National/Regional level of Ecology, Biodiversity and Climate Change, as well as Socio-Cultural

and Economic Factors (Berry *et al*., 2015). These will affect the Food Security of future generations.

1.2.1 Key Factors Affecting Food Security

The 10 key factors affecting Food Security include population growth, poverty, global climate change, political instability, food waste, natural disasters, food production, food distribution networks, gender inequality, and malnutrition. Each of these factors has a significant impact on the availability of food and the overall food security of a country.

i. **Population Growth**

Population growth has had a major impact on Food Security. A larger population puts increased strain on the resources of a country, which makes food production and distribution more difficult. Additionally, population growth can lead to increased poverty and inequality among communities, as well as more pressure on water and land resources.

ii. Poverty

Poverty has a very direct and lasting impact on Food Security; very low food security occurs when individuals have limited or uncertain access to adequate food, resulting in health implications such as chronic under-nutrition and other issues. Unfortunately, this is very common in lower-income households, who cannot afford sufficient amounts of nutritious food, nor may they be able to purchase higher-quality items that are essential for living a healthy lifestyle.

iii. Global Climate Change

Global Climate Change is taking a devastating toll on Food Security as weather patterns, harvests, and access to water and fertile land are all being affected. As temperatures continue to

rise, more extreme weather patterns become increasingly likely with profound implications on food production.

iv. Political Instability

Political Instability can have a profound impact on Food Security, threatening the Food Supply Chain and severely limiting food access to vulnerable populations. According to a report from the Food and Agriculture Organization, food-insecure households are particularly at risk of food insecurity during times of political unrest.

v. Food Waste

Food Waste is a major factor in determining Food Security, as wasted food resources are not available for use. As the population continues to grow, so does the amount of food that is wasted, which can have a major impact on food security.

vi. Natural Disasters

Food Insecurity resulting from natural disasters is a global challenge, with food systems being significantly impacted by extreme events like hurricanes, droughts, and floods. In the wake of disasters, food availability can be drastically reduced due to crop failures and disruptions to food production and distribution systems. Food insecurity can worsen as infrastructure relevant to food access (such as grocery stores and markets) is damaged or destroyed.

vii. Food Production

Food production is a key factor when it comes to food security, as it is necessary to ensure there is enough food to meet the needs of the population. Production of food is affected by a variety of factors, including agricultural practices, technology, climate, and access to resources. To increase food production and improve food security, it is important to invest in

Sustainable Agriculture, Food Security Technology, and Research and Development.

viii. Food Distribution Networks

Food Distribution Networks are invaluable tools for providing physical and economic access to food across the globe; without them, more people would be left without sustenance. Many forces have dramatic effects on these networks, from population growth to political unrest. While infrastructure and technology play important roles in creating efficient distribution, investment in human capital is just quite important.

ix. Gender Inequality

Gender inequality is a major factor when it comes to food security, as men and women have different access to food and resources. Women are often the primary caregivers in households and are responsible for the majority of food production.

x. Malnutrition

Malnutrition is a major factor in food insecurity, as poor diets can lead to health issues and decreased productivity. Malnutrition is caused by poverty, lack of access to food, and uneven access to resources.

1.2.2 Food Security Pathways

Food Security is best considered as a causal, linked pathway from production to consumption, through distribution to processing, recognized in a number of domains (Berry *et al*., 2015).

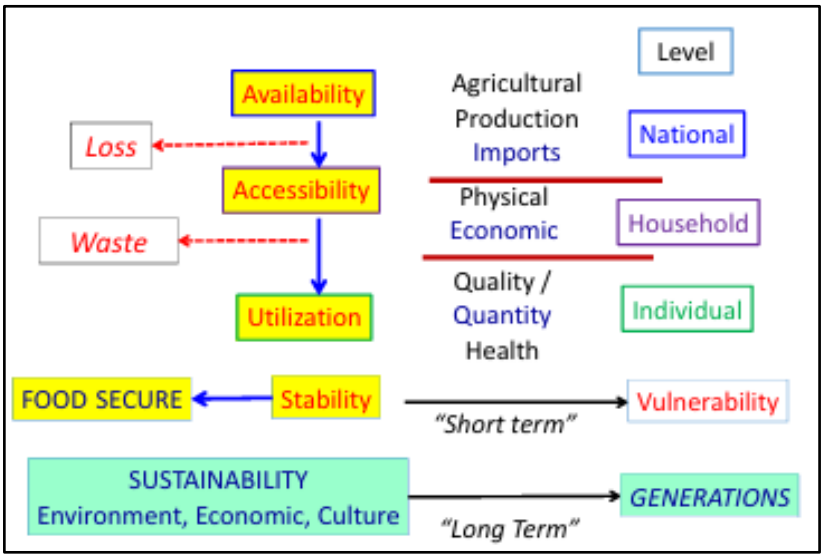

Figure 1. The pathway of the dimension of Food Security (Berry *et al*., 2015).

Analogy using a pathway to describe the relations among four dimensions of food security was used by The State of Food Insecurity in the World 2013 (FAO, WFP and IFAD, 2013), to show the links from food production (availability) to household (accessibility) to individual (utilization). Accessibility involes physical (transport, infrastructure) and economic means (food purchasing power). It also involves Socio-Cultural access and preferences and its health effects, as well as, the importance of social protection (HLPE, 2012). Stability thus emphasizes the importance of bringing in time dimension (short term) to Food Security. Apart from one-way pathways, Food Security may also be considered circular, as there is a feedback loop from utilization to availability since human capital depends on optimal nutritional state for the

workforce in agriculture and in all sectors of production (Berry *et al.,* 2015); these concepts are summarized in Fig. 1. An important point from this figure is the effect of food losses (from agriculture, post-harvest and distribution) and food waste (from processing and consumption) on food stability in households and communities. Worldwide, these may amount to one-third of the food available and is an obvious target for improving food security (HLPE, 2014). Reducing these amounts is a major challenge for securing world food availability in the future. Also, a systemic view obesity may be considered a type of food waste.

1.2.3 Food Security and Sustainability

The notion of sustainable diets link sustainability with food security to ensure holistic sustainable food systems. Sustainable diets are defined as those that "are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources" (FAO, 2012). While "a sustainable food system "is a food system that ensures Food Security and Nutrition (FSN) for all in such a way that the economic, social and environmental bases to generate FSN for future generations are not compromised" (HLPE, 2014, 2017). It has been internationally agreed that climate change is a threat to the sustainability of food security.

1.3 Food Insecurity

Food Insecurity (FINS), on the other hand is defined as a situation where people lack consistent access to enough food for a healthy and active life. It a critical global issue which occurs whenever the availability of nutritionally adequate and

safe foods, or the ability to acquire acceptable foods in socially acceptable ways, is limited or uncertain" (Expert Panel, 1990). FINS is a situation where individuals lack reliable access to sufficient, safe, and nutritious food, leading to poor health and development. It can manifest in various ways, from mild uncertainty about food availability to severe situations where people go without food for days. Millions of people worldwide experience food insecurity, with the situation particularly dire in developing countries and regions affected by conflict or climate change. FINS will occur when there are problems at any one level in the food production-consumption pathway.

According to the National Research Council (2006), Food Insecurity is experienced when there is:

(1) uncertainty about future food availability and access;

(2) insufficiency in the amount and kind of food required for a healthy lifestyle; or

(3) the need to use socially unacceptable ways to acquire food.

Apart from the most common constraint - lack of economic resources, food insecurity can also be experienced when food is available and accessible but cannot be utilized because of physical or other constraints, such as limited physical functioning of the elderly or disabled (National Research Council, 2006).

However, with the emphasis on health equity, focus should be given to the people under the most disadvantaged conditions. They are under various natural and man-made stresses such as floods, droughts, conflicts and wars. They also have urgent demand for better coping strategies for food insecurity. Paradoxically, the groups of subjects most food insecure, such as migrants, displaced persons and homeless, are not usually included in surveys of food security, which consequently underestimate the problem.

Food Insecurity, a critical global issue, occurs when individuals lack reliable access to sufficient, safe, and nutritious food, leading to poor health and development. It can manifest in various ways, from mild uncertainty about food availability to severe situations where people go without food for days.

Many factors cause food crises and hunger. Nevertheless, the leading causes are poverty, war, economic fluctuations, natural disasters, as well as the ongoing pandemic.

Food Crisis brings severe Food Insecurity in many underdeveloped countries; UN reported that nearly 928 million people were affected by Food Insecurity in 2021 (https://plan-international.org/emergencies/global-food-crisis). According to Food Security Information Network (FSIN), there was a 19% increase in the number of people in crisis from 2020 to 2021.

1.3.1 Causes of Food Insecurity

Food Insecurity can stem from various factors, including Poverty, Conflict, Climate Change, Economic Instability, and lack of access to resources.

(i) Rapid Increase of Population

Due to the constant increase in population every year, the food system faces challenges regarding producing adequate amounts of food to feed the entire humanity. It is estimated that, by 2050, the world food system will have to provide food for more than 9 billion people (https://www.futurelearn.com/info/courses/revolutionising-the-food-chain/0/steps/170874).

These growing demands are pretty challenging for the agricultural capacities. Some of the steps that can be considered on global level are: decreasing the footprint of agriculture, using the lands and resources more efficiently, eating less meat and reducing food waste (https://www.nationalgeographic.com/foodfeatures/feeding-9-billion/).

(ii) Biofuel Production

At first, biofuels were thought to be a promising alternative to fossil fuels since they used only organic matter for their production, mostly soybean, corn and sugarcane. However, it still turned out that they are not the best solution for the environment and the economic side of the food system. Biofuel production requires modifications of massive amounts of land and water, which directly affects biodiversity, pollutes air and water, and raises food costs. Besides, the Green House Gases (GHG) emissions are not lowered per se by turning to biofuels; depending on the methods used to produce the feedstock and process the fuel, some crops can even generate

more greenhouse gases than do fossil fuels (https://www.fao.org/3/i0100e/i0100e05.pdf). Indeed, it is possible to shift the biofuel impacts from negative to positive ones if we incorporate the "good practices". For example, these practices would be changing the way we treat the soil, preserving our ecosystem, taking care of the water, energy and land resources and keeping the harvesting, processing and distribution at the level of sustainability (https://www.greenfacts.org/en/biofuels/l-2/4-environmental-impacts.htm#6).

(iii) Poor Agricultural Practices

Anything that doesn't support plant life and plant growth is considered unsustainable practice within the agricultural domain. Suppose the practices used on the soil include harmful chemicals to speed up crop growth, the ground will eventually become nutrient deficient and consequently produce less healthy foods. In other words, we will consume toxins and deplete ourselves by ingesting these sprayed foods, which is far from having the full nutritional range necessary to maintain adequate sustenance. Another poor farming practice is not rotating the crops and repeatedly growing only one type of food on the same soil. So-called mono-crop farms are susceptible to pests and pathogens because there is no wildlife and native plants that will stop the pests from destroying the crops thus, more pesticides are necessary for the crops to survive the pathogen attacks (https://thrivingyard.com/poor-farming-practices-how-they-affect-your-food/). For this reason, it is essential to support the local small farmers since smaller farms can keep the soil chemical-free, rotate the crops and grow multiple crops since their interest is not massive production and massive income.

(iv) Food Loss and Food Waste

Overproduction, mass consumption and unsustainable food practices are the root of the massive amounts of discarded food within the food production chain. As we mentioned in one of our previous articles (https://www.lifefoster.eu/food-waste/the-difference-between-food-loss-and-food-waste/), food loss and food waste increase the use of water, land and energy to the extent that it damages our biodiversity. Moreover, excessive production and food wastage influence the financial side of the food system as it requires more money to sustain the market demands. As FAO stated, every participant of the food chain must partake in tackling the food waste and food loss issue. Raising awareness within every level of the supply chain, including the production, processing, distribution, consumption and disposal, is crucial for reducing food waste in the long run (https://www.fao.org/food-loss-and-food-waste/flw-data).

(v) Climate change

The food crisis, increased population, mass-production, poor agricultural practices, food waste and GHG emissions cause the temperatures and the sea to rise tremendously. Even more so, we witness ocean acidification and unpredictable weather patterns that are all clear evidence of climate change. Farming has always been dependent on weather conditions, and now, in these modern times, we can see how much erratic weather can damage the entire farming process. Despite the decreased food supply due to climate changes, the demand for food increases since the growing population asks for more food. Thus, the food industry replies with increased production, but now with higher food prices, more water, land and energy misuse. We hence see the vicious circle repeating itself perpetually (https://www.foodsystemprimer.org/food-production/food-and-climate-change/).

(vi) Microbial Threats

In Agriculture and Aquaculture, microbes and microbial infections can affect the health and productivity of food plants and animals. The entry of microbial agents into or onto food results in food poisoning, increase in foodborne outbreaks and increase in food spoilage. The resultant effect is decrease in Food Availability because contaminated food products must be discarded. Microbial threats to Food Security can come from a variety of microorganisms and at various stages in the life cycle of the food.

(vii) Economic Hardship

Families are struggling to afford basic necessities, including food, due to low incomes or unemployment.

(viii) Conflict and Displacement

Disruptions to food production and supply chains caused by conflict or natural disasters can lead to widespread food insecurity.

1.3.2 Consequences of Food Insecurity:

Food insecurity has severe consequences, including:

i. **Malnutrition:** Inadequate nutrition leads to stunted growth, weakened immune systems, and increased susceptibility to diseases.

ii. **Economic Impact:** Food insecurity can hinder economic productivity and development, as individuals struggle to work and learn due to hunger and poor health.

iii. **Social Impact:** Food insecurity can exacerbate social inequalities and lead to increased stress, anxiety, and social unrest.

1.3.3 Global Food Insecurity

Over one billion people worldwide are undernourished, the vast majority in developing countries. Recent dramatic increases in food commodity prices have pushed tens of millions more people into poverty, putting basic nutritional requirements out of reach and greatly increasing the scale of the crisis (ftp://ftp.fao.org/docrep/fao/012/i0876e/i0876e.pdf). The world has not been generally progressing either towards ensuring access to safe, nutritious and sufficient food for all people all year round (SDG Target 2.1), or to eradicating all forms of malnutrition (Sustainable Development Goals [SDG] Target 2.2). Conflict, climate variability and extremes, and economic slowdowns and downturns are the major drivers slowing down progress, particularly where inequality is high. The COVID-19 pandemic made the pathway towards SDG 2 even steeper. Nearly one in three people in the world (2.37 billion) did not have access to adequate food in 2020; between 720 and 811 million people faced hunger. Considering the middle of the projected range (768 million), 118 million more people were facing hunger in 2020 than in 2019 or as many as 161 million, considering the upper bound of the range. World hunger increased in 2020 under the shadow of the COVID-19 pandemic after remaining virtually unchanged for five years (2014 to 2019); the Prevalence Of Undernourishment (POU) increased from 8.4 to around 9.9 percent in just one year, heightening the challenge of achieving the Zero Hunger target by 2030.

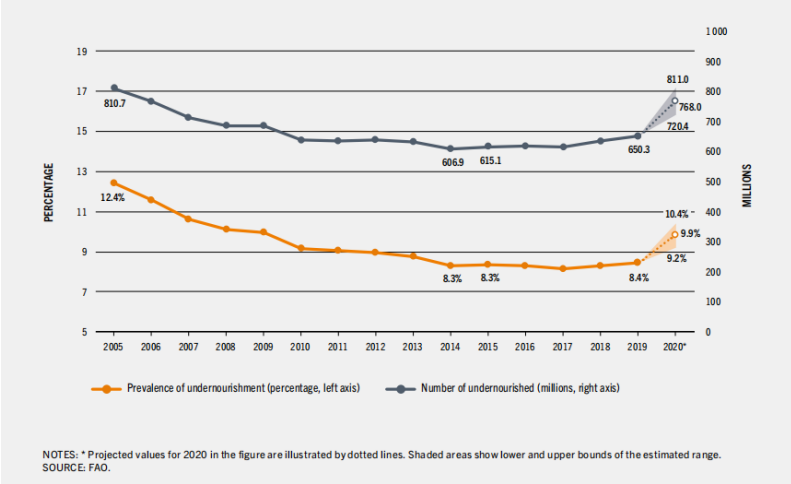

Figure 2. Number of undernourished people in the world till 2020. **Source:** FAO

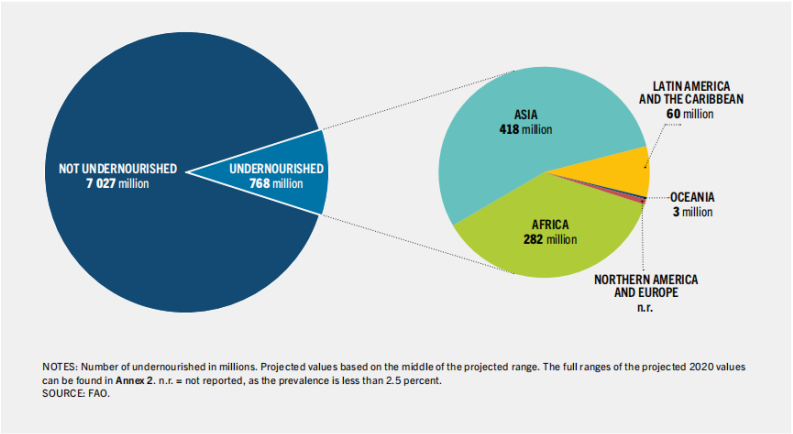

Figure 3. More than half (418 million) of the people in the world affected by hunger in 2020 were in Asia and more than one-third (282 million) in Africa.
Source: FAO

Hunger affects 21.0 percent of the population in Africa, compared with 9.0 percent in Asia and 9.1 percent in Latin America and the Caribbean. In terms of numbers, more than half of the world's undernourished are found in Asia (418 million) and more than one-third in Africa (282 million). Compared with 2019, about 46 million more people in Africa, 57 million more in Asia, and about 14 million more in Latin America and the Caribbean were affected by hunger in 2020. While the global prevalence of moderate or severe food insecurity (measured using the Food Insecurity Experience Scale) has been slowly on the rise since 2014, the estimated increase in 2020 was equal to that of the previous five years combined. Nearly one in three people in the world (2.37 billion) did not have access to adequate food in 2020 – an increase of almost 320 million people in just one year. The sharpest increases in moderate or severe food insecurity in 2020 occurred in Latin America and the Caribbean and in Africa. In Northern America and Europe, Food Insecurity increased for the first time since the beginning of Food Insecurity Experience Scale (FIES) data collection in 2014. Of the 2.37 billion people reported to all within the bracket of moderate or severe Food Insecurity, half (1.2 billion) are found in Asia, one-third (799 million) in Africa, and 11 percent (267 million) in Latin America and the Caribbean. Close to 12% of the global population was severely food insecure in 2020, representing 928 million people, indicating 148 million more than in 2019. At the global level, the gender gap in the prevalence of moderate or severe food insecurity has grown even larger in the year of the COVID-19 pandemic, with the prevalence of moderate or severe food insecurity being 10 percent higher among women than men in 2020, compared with 6% in 2019.

The high cost of healthy diets coupled with persistent high levels of income inequality put healthy diets out of reach for around 3 billion people, especially the poor, in every region of the world in 2019 – slightly less than in 2017. Notably, only Africa and Latin America show an increase in the unaffordability of heathy diets between 2017 and 2019, but it is likely that increases will be seen in most regions in 2020 due to the COVID-19 pandemic (FAO, IFAD, UNICEF, WFP and WHO. 2021).

1.3.4 Food Insecurity In Nigeria

Nigeria faces challenges related to food security, including poverty, rising food prices, and the impact of climate change. Rising food prices (inflation and economic instability) has made food unaffordable for many residents. Climate change impacts such as flooding and other climate-related events disrupt agricultural production and food supply chains. A significant portion of the population lives in poverty, making it difficult to access nutritious food. Nigeria has the second highest burden of stunted children in the world, with a national prevalence rate of 32 percent of children under five. An estimated 2 million children suffer from Severe Acute Malnutrition (SAM). Sadly, only two out of every 10 children affected by SAM is currently reached with treatment. Seven percent of women of childbearing age also suffer from acute malnutrition (https://www.unicef.org/nigeria/nutrition). The first 1,000 days of a child's life offer a unique window of opportunity for preventing under-nutrition and its consequences. Exclusive breastfeeding rates have not improved significantly over the past decade, with only 17 percent of babies being exclusively breastfed during their first six months of life. Just 18 percent of children aged 6-23

months are fed the minimum acceptable diet (https://www.unicef.org/nigeria/nutrition). The States in Northern Nigeria are the most affected by the two forms of malnutrition – stunting and wasting. High rates of malnutrition pose significant public health and development challenges for the Country. Stunting, in addition to an increased risk of death, is also linked to poor cognitive development, a lowered performance in education and low productivity in adulthood, all contributing to economic losses estimated to account for as much as 11 percent of Gross Domestic Product (GDP) (Alam *et al*., 2020).

1.3.5 Malnutrition And Communicable Diseases

Malnutrition is the largest single underlying cause of death worldwide and is associated with over 1/3 of all childhood deaths (http://www.who.int/mediacentre/factsheets/fs178/en/index.html).

The combination of Communicable Diseases (CDs) and Malnutrition is a major public health problem, particularly among infants and children. Over 8 million preventable deaths are estimated to occur in these groups annually in developing countries (Black, *et al*.2008: the majority are associated with malnutrition (Bryce, *et al*, 2005). Both undernutrition and micronutrient deficiencies increase the morbidity and mortality from CDs. Among young children, malnutrition is an underlying cause in over 60% of deaths resulting from diarrhoea, over 50% of deaths as a result of pneumonia and malaria, and over 40% of deaths as a result of measles (Caulfield, *et al*, 2004). The relationship is synergistic; malnutrition compromises natural immunity leading to increased susceptibility to infection and more frequent and severe episodes of CDs. Likewise, infection can aggravate or precipitate Malnutrition through decreased appetite and intake, Malabsorption, Nutrient loss or increased metabolic needs. Severe acute malnutrition often masks symptoms and signs of Infectious Diseases making prompt clinical diagnosis and early treatment difficult. Nutritional and CD interventions must be integrated to address the overall impact of malnutrition on mortality from CDs effectively.

2.0 THE STOMACH AND HER NEIGHBOURS (*THE CRUST OF THE MATTER OF TODAY'S VALEDICTORY LECTURE*)

2.1 The Stomach

The stomach is a muscular J-shaped organ that sits in the upper abdomen on the left side of the body. Its top connects to a valve called the esophageal sphincter (a muscle at the end of your esophagus) while the bottom connects to the small intestine.

The stomach produces enzymes (substances that create chemical reactions) and acids (digestive juices). Its primary role is to digest food and send it to the small intestine. It has three functions:

- **Temporarily Store Food:** The stomach acts as a temporary reservoir, holding food and churning it with gastric juices.

- **Contract and Relax to Mix and Break Down Food:** The Stomach controls the rate at which food is passed into the small intestine, ensuring efficient digestion and absorption.

- **Produce Enzymes and Other Specialized Cells to Digest Food:** The Stomach secretes gastric acids and enzymes (like pepsin) that break down proteins and begin the digestive process.

Each part of your Gastrointestinal Tract (GIT) breaks down food and liquid and carries it through the body. During the digestive process, the body absorbs nutrients and water. Then,

the waste products of digestion are expelled through the large intestine.

Food moves through the GIT in a few steps:

1. **Mouth:** As you chew and swallow, your tongue pushes food into your throat. A small piece of tissue called the Epiglottis covers your windpipe. The Epiglottis prevents choking.

2. **Esophagus:** Food travels down a hollow tube called the Esophagus. At the bottom, your Esophageal Sphincter relaxes to let food pass to your Stomach. (A Sphincter is a ring-shaped muscle that tightens and loosens.)

3. **Stomach:** The Stomach creates digestive juices and breaks down food. It holds food until it is ready to empty into your Small Intestine.

4. **Small Intestine:** Food mixes with the digestive juices from your Intestine, Liver and Pancreas. The Intestinal walls absorb Nutrients and Water from Food and send waste products to the Large Intestine.

5. **Large Intestine:** Your Large Intestine turns waste products into stool. It pushes the stool into your Rectum.

6. **Rectum:** The Rectum is the lower portion of your Large Intestine. It stores stool until you have a Bowel Movement.

   (https://my.clevelandclinic.org/health/body/21758-stomach).

2.2 Stomach Neighbours

The human body contains other five major organs that are considered vital for survival. They are the heart, brain, kidneys, liver, and lungs. The locations of these five organs and several other internal organs are shown in Figure 4. If any of the five major organs stop functioning, the death of the organism is imminent without medical intervention.

1. The Heart is located in the center of the Chest, and its function is to keep blood flowing through the body. Blood carries substances to cells that they need and also carries away wastes from cells.

2. The Brain is located in the head and functions as the body's control center. It is the seat of all thoughts, memories, perceptions, and feelings.

3. The two Kidneys are located at the back of the Abdomen on either side of the body. Their function is to filter blood and form urine, which is excreted from the body.

4. The Liver is located on the right side of the abdomen. It has many functions, including filtering blood, secreting bile that is needed for digestion, and producing proteins necessary for blood clotting.

5. The two Lungs are located on either side of the Upper Chest. Their main function is exchanging oxygen and carbon dioxide with the blood.

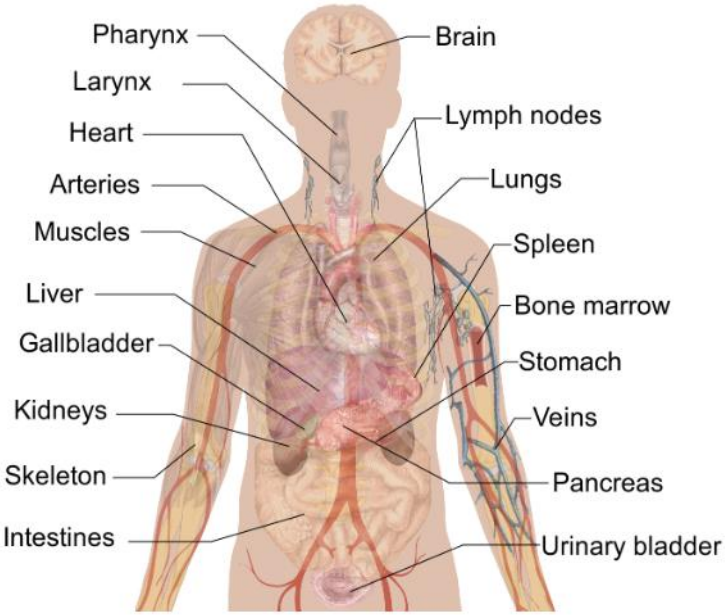

Figure 4. The Human Anatomy (Stomach & her Neighbours) (**Source:** https://bio.libretexts.org/Bookshelves/Human_Biology/Human_Biology_(Wakim_and_Grewal)/10%3A_Introduction_to_the_Human_Body/10.4%3A_Human_Organs_and_Organ_Systems)

2.3 Nutritional Diseases Associated with Various Organs of the Body

Nutritional Diseases, which arise from deficiencies or excesses in Nutrient Intake, can affect various Organs and Systems throughout the body. These Diseases encompass a range of conditions, from Deficiencies leading to specific illnesses to the Chronic Diseases Associated with over nutrition.

Here's a breakdown by Organ System:

1) Brain and Nervous System:

Cognitive Decline: Poor nutrition, especially in older adults, can contribute to cognitive decline due to inadequate nutrient intake and its impact on overall health status.

Iodine Deficiency: Iodine is crucial for brain development, particularly in utero and early childhood. Deficiency can lead to mental retardation and developmental abnormalities.

Alcohol Use Disorder: Chronic alcohol use can lead to brain damage and cognitive decline due to nutrient deficiencies and direct toxic effects.

2) Heart and Cardiovascular System:

Cardiovascular Disease: Diets high in saturated fats, cholesterol, and sodium can contribute to heart disease, including coronary artery disease and stroke.

Hypertension: High Blood Pressure can be influenced by excessive sodium intake and obesity, both linked to dietary patterns.

3) Digestive System:

Gastrointestinal Diseases: Certain Nutritional Deficiencies, like Zinc Deficiency, can affect the Digestive System, and in severe cases, cause symptoms like Diarrhea and Malabsorption.

Celiac Disease and other Food Intolerances: While not always strictly Nutritional Diseases, these conditions can lead to Nutrient Malabsorption and Deficiencies.

Liver Disease: Excessive Alcohol Consumption, which is often associated with Poor Nutrition, can lead to Liver Damage and Cirrhosis.

4) Kidneys:

Kidney Disease: Poor Nutrition, particularly in the context of Obesity and Diabetes, can contribute to Kidney Disease.

Electrolyte Imbalances: Excessive Sodium or Potassium Intake, or Deficiencies in these Minerals, can affect Kidney Function.

5) Bones and Joints:

Osteoporosis: Calcium and Vitamin D Deficiencies can lead to decreased Bone Density and Increased Risk of Fractures.

Rickets: Vitamin D Deficiency in Children can cause Rickets, a condition where bones soften and weaken.

Osteomalacia: Vitamin D Deficiency in Adults can lead to Osteomalacia, a condition causing soft and weak bones.

6) Eyes:

Xerophthalmia and night blindness: Vitamin A deficiency can lead to dry eyes, corneal damage, and night blindness.

7) Skin:

Scurvy: Vitamin C Deficiency can cause Scurvy, characterized by Bleeding Gums, Skin Problems and Impaired Wound Healing.

8) Others:

Anemia: Iron Deficiency is a common cause of Anemia, leading to Fatigue, Weakness and Impaired Cognitive Function.

Goiter: Iodine Deficiency can cause Goiter, an Enlargement of the Thyroid Gland.

Diabetes Mellitus: Type 2 Diabetes is strongly linked to Obesity and Unhealthy Dietary Patterns, leading to Insulin Resistance and High Blood Sugar.

Cancer: Poor Nutrition and Obesity are risk factors for certain types of Cancer, including Colorectal, Breast, and Prostate Cancer.

Protein-Energy Malnutrition: Kwashiorkor and Marasmus, characterized by Severe Muscle Wasting and Weight Loss, can result from Protein and Calorie Deficiencies. (https://www.britannica.com)

Source: https://my.clevelandclinic.org/health/diseases/24679-organ-failure

3.0 RELATIONSHIP BETWEEN HEALTH AND ECONOMIC GROWTH IN NIGERIA

According to the Constitution of the World Health Organization, the Universal Declaration of Human Rights, the International Covenant on Economic, Social and Cultural Rights, and a number of other organizations, health is a fundamental human right. Not only is it a human right, but it is a human right that has been enshrined into international law. Imagine a world where everyone, from young children to the elderly, wakes up full of energy, free from disease, and ready to pursue their dreams. Sounds ideal, right?. Unfortunately, for

millions of people, especially in Nigeria, this is far from reality. Interestingly, there seem to be hope for Ngerians as President Bola Ahmed Tinubu's Renewed Hope Agenda is firmly laying the groundwork for Nigeria's economic renaissance through bold reforms, strategic investments, and inclusive policy innovations.

Good health is the foundation of a productive and fulfilling life. A healthy population means fewer days lost to illness, more children in school, and more workers contributing to the economy. For families, good health ensures parents can work and provide, while children grow strong and achieve their potential. In Nigeria, where nearly half of the population is under 18 years old, good health is not just about individual well-being but about building a prosperous future for the nation (https://revampafrica.org/building-a-healthier-nigeria-a-path-to-sdg-3-and-well-being-for-all/). Good health is crucial for Nigeria's development because a Healthy Population is more productive, can better access education, and contributes to economic growth while poor health, on the other hand, hinders progress and exacerbates inequalities. Generally, benefits of Good Health for Nigeria include:

i. **Increased Productivity:** A healthy workforce is more productive, contributing to Economic Growth.
ii. **Improved Education:** Healthy children are more likely to attend school and succeed academically.
iii. **Reduced Healthcare Costs:** Preventing and managing diseases can save money on healthcare.
iv. **Social and Economic Equity:** Good health can help reduce inequalities between different groups.

v. **Human Capital Development:** A healthy population is a valuable human capital asset for the country.

vi. **Sustainable Development:** Good health is a foundation for achieving other Sustainable Development Goals.

3.1 Health Challenges in Nigeria:

a. **Communicable Diseases:** Nigeria faces challenges from infectious diseases like malaria, tuberculosis, and HIV/AIDS.

b. **Non-Communicable Diseases:** There's a growing prevalence of non-communicable diseases like diabetes, cancer, and hypertension.

c. **Underlying Social Determinants:** Factors like poverty, malnutrition, and inadequate sanitation impact health outcomes.

d. **Health System Challenges:** There are issues with access to healthcare, quality of care, and the availability of trained personnel.

4.0 FOOD INSECURITY FIGURES IN NIGERIA AND THREAT TO LIVES OF 30.6 MILLION PEOPLE

In March 2025, the Government of Nigeria, in collaboration with the Food and Agriculture Organization (FAO) and Food Security Sector partners released the latest Cadre Harmonisé report, revealing a Critical Food and Nutrition Crisis across the country. The report indicate that 30.6 million people in 26 states and the Federal Capital Territory (FCT) are projected to face acute food and nutrition insecurity at Crisis (CH Phase 3) or worse during the June – August 2025 lean season. Nigeria continues to record an increasing number of food-insecure people globally, with very high levels of acute malnutrition, underscoring the urgency of sustained and coordinated action (https://www.fao.org/nigeria/news/detail-events/es/c/1735060/).

Current findings project a 43% increase in Food and Nutrition Insecurity, with the North Western States of Zamfara (400,000), Sokoto (183,000) and Katsina (130,000) taking the lead as the most affected region, and the North Eastern States of Borno (146,000) and Yobe (133 000) following closely. Kaduna in the North Central Region records 100,000. Together, Borno, Adamawa, and Yobe (BAY) States account for 15% (3.7 million people) of Nigeria's Food-Insecure Population, while the North West represents 17% (4.2 million people). Without sustained intervention, these figures are expected to rise to 4.6 million (BAY) and 5 million (northwest) during the lean season. Drivers to this escalating Food Insecurity in Nigeria include Sustained Insecurity due to the insurgency and

communal clashes, economic hardship and shocks and climate hazards (https://www.fao.org/nigeria/news/detail-events/es/c/1735060/).

Other notable hunger hotspots requiring urgent attention include large parts of Benue, Kwara, Kaduna, and parts of Taraba and Cross River States where affected populations are increasingly experiencing high Food Consumption Gaps due to economic shocks, conflict and deteriorating livelihoods options. This clearly present the state of our Nigeria's Food and Nutrition Security situation, particularly in this phase of our Nation's Economic stress when majority of the population are still experiencing the shock of the negative impact of Fuel Subsidy removal and insecurity in the food production, processing, storage and distribution system. The alarming Food and Nutrition Security figures highlight the urgent need for collective action to address the escalating Food and Nutrition Insecurity affecting millions of vulnerable children and families across Nigeria. The cost of inaction is too high, without sustained and increased funding, Food Insecurity and Malnutrition will worsen, potentially reversing progress made in recent years even as vulnerable populations will face greater hardship, with devastating long-term impacts. Increased investment is therefore needed to enhance food Security Data Collection and Analysis, enabling Evidence-Based Decision-Making and Coordinated Responses (https://www.fao.org/nigeria/news/detail-events/en/c/1735060/).

5.0 TACKLING FOOD SCARCITY IN NIGERIA

Food Insecurity is a pressing issue in Nigeria, where a significant portion of the population lacks reliable access to sufficient and nutritious food hence, a multifaceted approach is required, leveraging Technology, Public-Private Partnerships,

Empowering Smallholder Farmers, Innovative Financing Solutions, Sustainable Agriculture Practices and Durable Solutions in Food Production, Livestock Restoration, Youth Involvement, Urban Agriculture, Climate Change Mitigation Strategies, Strengthening Agricultural Value Chains, and Effective Policy Interventions (https://www.linkedin.com/pulse/innovative-strategies-tackling-food-insecurity-nigeria-noba-africa-bfyqf).

The following approaches are suggested:

5.1 Food Security Innovation Platform

A major reason for Food Insecurity is that activities of the major Stakeholders are not coordinated. This includes Government (Policy Makers), Researchers, Farmers, Agro-Industries, Agro-Logistics and Consumers.

I suggest Nigeria employs the potential in an Innovation Platform at the three levels of governance (local, state and federal). Its core principle is that Stakeholders would collaborate to achieve Agricultural Development Goals. This requires a Technology-Driven Platform for learning, negotiation and coordination. It is on record that Sierra Leone has used this kind of platform.

The Platform would connect the relevant Players in the food value chain. They would include Policy Makers, Researchers, Agricultural Extensionists and Transporters.

What's happening now is that Researchers in their various Laboratories and Offices look for solutions in isolation from Farmers. Meanwhile, Farmers have challenges that Researchers are not aware of. The Policy Makers mostly take a top-down approach that is not beneficial to Farmers. Consumers want products that are not available locally, so they

opt for imported Food Items. Achieving Food Security will be easier if the approach is from bottom to top.

The Government must be ready to take responsibility for the innovation platform. Government agencies work in isolation. Their activities are yet to be coordinated.

5.2 The Role of Public-Private Partnerships

Public-Private Partnerships (PPPs) play a crucial role in addressing Food Insecurity. Collaboration between the Government, Private Sector, and Non-Governmental Organizations can create Sustainable Solutions. For instance, the Government can provide Infrastructure and Policy Support, while Private Companies can offer Technological Innovations and Investment. NGOs can facilitate capacity-building programs and ensure community involvement. Successful PPPs can enhance agricultural productivity, create job opportunities, and improve food distribution networks, ultimately contributing to Food Security.

5.3 Revitalisation of River Basin Development Authorities

Nigeria is blessed with abundant Water Resources distributed across the country. But it's not managed in a way that encourages farming, particularly in this period of climate change. The 12 River Basin Authorities were established in 1976 to harness and develop the Nation's Water Resources. The idea was that they would boost rural development by supplying water for Homes, Agricultural Irrigation, Fisheries Projects and Improved Navigation. Unfortunately, the objectives haven't been met, primarily because of inadequate Government support.

The Authorities should be revitalised to ensure water is made available so that Farmers can produce crops around dams and along rivers throughout the year. For instance, Africa's largest Gorge Dam, Ikere Gorge Dam, is located in Oyo State, South-West Nigeria. Currently, however, aside from fishing activities, there are no significant farming activities taking place around the dam. This is also true at other Dams.

5.4 Comparative Advantage and Cooperatives

Nigeria's diverse agroecological zones offer comparative advantages in crop and livestock production. Such zones are the Rainforest, Savanna, Derived Savanna and Mangrove. Each Zone is distinct and supports specific crops or livestock. This must be used to greater advantage. The latest Government agricultural policy, the National Agricultural Technology and Innovation Policy, which is centred on Special Agro-Industrial Processing Zones, must take this into account. Specialising in region-specific agriculture boosts economic growth through surplus production and trade. It also supports Food Security, and builds resilience against climate change. This process

would be helped if farmers were organised into Local Cooperatives with incentives after production.

5.5 Innovation and Technology

Technological advancements have the potential to revolutionize agriculture in Nigeria. Government needs to invest in a range of advanced agriculture tools, Precision farming, which involves using data analytics and GPS technology, can optimize planting schedules, irrigation, and fertilization, leading to increased crop yields. Drones equipped with multispectral cameras can monitor crop health, identify pest infestations, and assess soil conditions, allowing for timely interventions. Mobile apps can provide farmers with real-time information on weather, market prices, and best practices, enhancing their decision-making processes. Another example is Irrigation Technology and value addition. Tools like these can make supply chains more efficient, reduce food waste, and ensure that fresh produce reaches consumers. Innovations in Agro-processing allow for value addition, extending shelf life and creating diverse products. Climate-smart technologies have the ability to help farmers adapt to changing conditions. By adopting these Technologies, Nigerian farmers can significantly improve productivity and reduce Food Insecurity.

5.6 Empowering Small-Holder Farmers

Smallholder Farmers are the backbone of Nigeria's agriculture sector. Empowering them with resources, training, and market access is essential for boosting productivity and livelihoods. Initiatives such as providing high-quality seeds, fertilizers, and modern farming equipment can enhance their yields. Training programs on sustainable Farming Practices, Pest Management, and Post-Harvest Handling can improve the quality of their produce. Additionally, establishing cooperatives can enable smallholders to pool resources, access credit, and negotiate better prices for their products. Empowering Smallholder Farmers is a vital step towards achieving Food Security in Nigeria.

5.7 Innovative Financing Solutions

Access to finance is a significant barrier for many Nigerian farmers. Innovative Financing Solutions, Such as Microloans, Insurance Schemes, and Investment Funds, can support Agricultural Development. Microfinance institutions can offer small loans to Farmers, enabling them to purchase inputs and invest in their farms. Agricultural Insurance can protect farmers against crop failure due to adverse weather conditions

or pests, reducing their financial risks. Investment Funds focused on Agriculture can provide capital for scaling up Operations and adopting Modern Technologies. These financing mechanisms can empower Farmers and Agribusinesses, contributing to Food Security.

5.8 Promoting Sustainable Agriculture

Sustainable Agriculture Practices are essential for long-term Food Security. Techniques such as Crop Rotation, Organic Farming, and Agroforestry can enhance soil fertility, conserve water, and reduce reliance on chemical inputs. Integrated Pest Management Strategies can minimize the use of pesticides while protecting crops. Conservation agriculture, which involves minimal soil disturbance and maintaining soil cover, can improve soil health and resilience to climate change. By promoting Sustainable Agriculture, Nigeria can ensure a stable and Productive Farming System that supports food security.

5.9 Youth Involvement in Agriculture

Engaging young people in Agriculture is critical for the sector's future. Youth involvement can be fostered through Education, Training, and Entrepreneurial Opportunities. Agricultural Education Programs can provide students with knowledge and skills in Modern Farming Techniques, Agribusiness Management, and value addition. Training Programs and Internships can offer hands-on experience and mentorship. Supporting Young Agripreneurs with access to Finance, Markets, and Technology can encourage innovation and drive agricultural growth. Youth involvement is key to addressing food insecurity and ensuring the sustainability of Nigeria's Agriculture sector.

5.10 Urban Agriculture

Urban Agriculture presents a viable solution to food insecurity in Nigeria's cities. Urban Farming Initiatives, such as Rooftop Gardens, Community Gardens, and Vertical Farming, can provide fresh produce and create employment opportunities.

These practices can reduce the dependence on rural agriculture, lower transportation costs, and ensure a steady supply of Nutritious Food to urban populations. Promoting urban agriculture can enhance food security, improve urban resilience, and contribute to a greener environment.

5.11 Climate Change Mitigation Strategies

Climate change poses significant challenges to agriculture in Nigeria, including unpredictable weather patterns, droughts, and floods. Mitigating these effects is crucial for food security. Climate-Smart Agriculture Practices, such as Drought-Resistant Crop Varieties, Efficient Water Management Systems, and Agroforestry, can help farmers adapt to changing conditions. Early warning systems and weather forecasting can enable farmers to make informed decisions and reduce risks. Implementing climate change mitigation strategies will enhance the resilience of Nigeria's agricultural sector and ensure food security in the face of climate change.

5.12 Strengthening Agricultural Value Chains

Improving the entire agricultural value chain, from production to distribution, is essential for food security. Strengthening value chains involves enhancing infrastructure, such as storage facilities, transportation networks, and processing plants. This can reduce post-harvest losses and ensure that produce reaches markets in good condition. Facilitating market access for farmers through cooperatives, digital platforms, and market information systems can help them get fair prices for their products. Strengthening agricultural value chains can increase efficiency, reduce waste, and enhance food security in Nigeria.

5.13 Policy Interventions

Effective policy interventions are necessary to create a conducive environment for agricultural growth and Food

Security. The Government should implement policies that support investment in agriculture, provide subsidies for inputs, and ensure access to credit for farmers. Policies promoting research and development in agriculture can lead to the development of high-yield crop varieties and Innovative Farming Techniques. Additionally, land tenure reforms can provide Farmers with secure land rights, encouraging long-term investments in agriculture. By enacting and enforcing supportive policies, the government can drive agricultural growth and achieve Food Security.

Addressing Food Insecurity in Nigeria requires a holistic approach that encompasses Technology, Public-Private Partnerships, Empowerment of Smallholder Farmers, Innovative Financing, Sustainable Agriculture, Youth Involvement, Urban Agriculture, Climate Change Mitigation, Strengthening Value Chains, and Effective Policy Interventions. By harnessing these strategies, Nigeria can enhance Agricultural Productivity, Create Job Opportunities, and Ensure Food Security for its Population. The Nigerian Government, Private Sector, and Non-Governmental Organizations must all be committed to driving these efforts and contributing to the agricultural transformation in Nigeria. Through collaboration and innovation, we can build a resilient and Sustainable Agricultural sector that supports the nation's growth and development.

6.0 A CLARION CALL TO ACTION

The interconnected issues such as Poverty, Inequality, Conflict, Climate Change, Gender Discrimination, and Weak Government and Health Systems, are all major drivers of hunger and malnutrition. They create a complex web of challenges that disproportionately affect vulnerable

populations, making it difficult to address Food Insecurity effectively.

It will be value-adding for the National Orientation Agency (NOA) to have Offices in all the States and Local Government Areas in Nigeria, where personnel are dispersed to various locations for weekly, monthly and yearly food security data collection and analysis, enabling evidence-based decision-making and coordinated responses. It is important to have information on malnutrition and organ violence (diseases) just as we have on Drug Abuse and Domestic Violence.

My Inaugural Lecture on "Food Your Friend or Foe", addressed the fact that food can be useful and nourishing, and at the same time Food can be detrimental to our organs and to the general health of an individual to the extent of killing the consumer, depending on the aspect of Malnutrition, whether due to excessive intake (Over Nutrition) or inadequate intake (Under Nutrition).

If these databases are frequently and constantly analyzed statistically, it will become clearer that certain number of people die every day, month or year due to Malnutrition.

My pertinent question is why is the government not giving the required attention to data collection and analysis? The answer is probably the fear of how to alleviate hunger (how much it will cost on a daily, monthly or yearly basis).

Fear of Dishonest and Corrupt human beings who will head such organizations that will see these positions as Gold Mines that will amass wealth for their immediate families while the

hungry masses continue to die. Consider the word " palliative", which is seemingly another name for rice in recent times in Nigeria. Where did all the rice provided as palliatives go to? Did you see more than few cups in the kitchens of the poor ones that the palliatives were meant for? We are all witnesses to the rich becoming richer from palliatives, and the poor become poorer.

This day, I make a clarion call on our Government to also collate data of these distributions and then, be well supervised. I hope it will be possible; indeed God will be our Helper.

I recommend that such Data Collection exercise should be included in the Rules and Regulations of the School by providing a register at all levels of Education just like we have Attendance Register for students to fill what they ate before coming to School beside their names and sign accordingly.

It might sound funny but it will help us a lot to monitor the level of food insecurity/Hunger in Nigeria and to also reduce incidences of low Academic Performances, Ill Health and sometimes, Death of our students orchestrated by Starvation which most times we attribute to ill health, not knowing that it is Malnutrition due to Food Insecurity that is the main Culprit.

Fathers and Mothers, please it is not enough to give birth to children and see ourselves as mini gods in the family. Make sure you are providing adequate food for them whether they are living with you, in school or even in Diaspora. Many send these children abroad as elite's children, only to subject these children to a 24-hour working period to survive, doing all sort of Dirty menial Jobs while undergoing educational

Programmes in Schools, just to make sure there is food on their tables. A good number of them move about in the streets abroad engaging in drugs and looking malnourished and very sick.

I crave the indulgence of the Government, Institutions, Universities and the Families to introduce Entrepreneurial Skills for children from Primary Schools at quite early ages to Tertiary Levels. This will make them not only to be self-Sufficient and Focused, also put Food on their table without waiting for Government Jobs/Employment.

We thank God for President Bola Ahmed Tinubu's Renewed Hope Agenda, especially the Agricultural aspects of it.

This also goes to those of us still working. I am bowing out today and you will be bowing tomorrow. Start now to go into various kinds of Entrepreneurial Ventures that will sustain you when you retire. Start hanging up White Collars; the ties are no more necessarily beautiful on you. Please note that your Monthly Pension or Gratuity will not be enough for you. Many retirees die untimely because of lack of Preparation/Plans and sadly because the more they look for the children there toiled for all their lives, the less they see them. The Bible admonished us to "train up the children the way he should go, in ways of the Lord, so that when they grow, they will not depart from them". Many of us did not do this. Most of children have gone nuclear, involved in all kinds of Social Vices, leaving their retired, old parents to die without even eating the fruits of their labours.

Please children in this auditorium today, you owe your parents total care in their old age. You owe them the fruit of their labours. You owe God fulfillment of these Virtues/Obligations he bestowed on you concerning your parents. The Bibles also enjoins you to honour your Father and your Mother, that your days may be long upon the land which the Lord your God is giving you" (Exodus 20:12).

To Churches and Mosques, irrespective of Denominations, you owe mankind leadership in the way of God via children Ministry, Youth Ministry and Men & Women Ministries. Leaders, including Traditional Rulers must ensure that they are playing the roles handed over to them by God.

I thank the entire University of Port Harcourt Community for Habouring and Sustaining me for these 44 years. I thank all the Students who passed through me, one way or the other, all through my stay here in the University.

I thank all may Colleagues (Academic and Non-academic staff) for the Sweet and Wonderful stay with you all these number of years.

I thank all other University Staff and Students where I found myself serving in one capacity or the other especially Ignatius Ajuru University where I played Special Leadership Academic Roles.Thank you for the Leadership Award given to me by VOTECH Faculty, also the Management of Rivers State University of Science and Technology where I served as a Visiting Scholar as well as Kenule Beeson Saro-Wiwa Polytechnic Bori, where Political Appointment made me serve

as member her Governing Council for eight years. I love you all.

I will not end this Valedictory Lecture without specifically thanking the FCT Minister, His Excellency Chief Barrister Nyesom Wike, who has been the architect of my political appointments. May God bless him, his Family members and other Political Associates that made these Appointments possible. I deeply grateful for my recent appointment as a member of the newly constituted RSIEC Board.

To my Digital Vice Chancellor, Prof. Owunari Abraham Georgewill, my brother Knight, it has been wonderful working with you. To all the Vice Chancellors I worked with in this University as well as other Universities, I cherished your Leadership. All Friends and Well Wishers (Political and otherwise), you were and still are nice people to me and my Family.

And now, to my Redeemer, Saviour, Deliverer, Protector, Provider, Strength, Peace & Joy, I give you all the Glory, Reverencing and Praises for making me retire, yet not tired today my 70th birthday.

My Song:

Ezebube!, see how far you've brought me!
Ezebube!, I'm glad you found me worthy!
I can see, I can tell and I know its by Your Grace!
All my days, I will sing your Praise!

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CITATION

PROFESSOR JOYCE ORONNE AKANINWOR

MNSMB, MBIAFN, MSAN, MNAWSTEM, MOWSD, FSINRHD, NISI, MAPWAB, FHNR, FIBAKM, JP.

B.Sc. M. Sc. (Uniben), PhD. (Uniport)

Professor of Nutritional Biochemistry & Toxicology/Environment

Born to Late Ven. S. Y. Chukuigwc and Rtd. Matron Isabel Chukuigwe of lsiokpo Kingdom in lkwerre LGA of Rivers State on November 20, 1955, Professor (Grand Dame) Joyce Oronne Akaninwor demonstrated a great aptitude for academic pursuit early in life. She gained entrance into St. Peter's Primary School. Isiokpo in 1961 and left for Secondary School in Primary-Five. Professor Akaninwor subsequently gained admission into Class 1 at the prestigious Girl's Secondary School, Isiokpo, Rivers State in 1966 but was disrupted by the

Nigeria civil war. At the end of the war, she moved to Port Harcourt to attend Government Girl's Secondary School, Harbour Road Port Harcourt in 1970 and completed her Secondary Education in 1973 obtaining the London General Certificate of Education ("0" Level). In 1974, she was admitted into the College of Science and Technology, Port Harcourt where she obtained the London General Certificate of Education ("A" Level) in 1976. Soon after, she proceeded to the University of Benin to read Biochemistry. Professor Akaninwor obtained a Second Class (Upper Division) Honours degree in 1980. After her National Youth Service, she was offered admission in 1983 for a Postgraduate programme in the University of Benin. This fetched her Master of Science Degree in Biochemistry in 1985. Her excellent performance in her M.Sc. days motivated her to proceed for a PhD. Programme at the University of Port Harcourt. Prof. Akaninwor successfully bagged a Ph. D. Degree in Nutritional Biochemistry & Toxicology/Environment in 1992.

Professor (Grand Dame) Joyce Oronne Akaninwor has a 44-year teaching experience in the University of Port Harcourt. She joined Biochemistry Department of the University in 1981 as a Graduate Assistant, her appointment confirmed in 1983 and rose through the ranks being appointed as Assistant Lecturer in 1983, Lecture II in 1986, Lecturer I in 1991 and Senior Lecturer in 1997. Professor (Grand Dame) Akaninwor has made meaningful contributions to the growth of Biochemistry as a field of study, the Biochemistry Department and the University of Port Harcourt at large, in many ways, and was promoted to the rank of Professor of Nutritional Biochemistry & Toxicology/Environment in 2007, making her a Professor for 18 years now.

Professor (Grand Dame) Akaninwor served as Adjunct Professor, Department of Home Economics, Ignatius Ajuru University of Education from 2011 till now and part-time Lecturer in ISLT (now SSLT), University of Port Harcourt till date. Professor Akaninwor was the Head of Department of Biochemistry between 1999 and 2001 where she made remarkable upliftment of the Department. She has been a Lecturer in several Workshops and Seminars organized within and outside the University Community, as well as, External Examiner to different Universities.

Professor (Grand Dame) Akaninwor has held various Academic and/or Senior Administrative positions at several Universities across Nigeria. She was Associate Dean School of Science Laboratory Technology (SSLT) University of Port Harcourt from May 2012 to April 2013 and served as Acting Dean from May 2013 to November, 2014. She also served as Chairman, Postgraduate Studies Committee of Biochemistry Department in the University of Port Harcourt.

Professor (Grand Dame) Akaninwor is a member of various Learned Societies/Professional Associations including Nigerian Society of Biochemistry and Molecular Biology (NSBMB) and National Association of Women in Science. She has bagged various awards including:

- Award of Merit by University of Benin Biochemistry Students (1980)
- Outstanding Certificate of Service (During NYSC) By Household Products Limited Jos (1980-1981)
- Professional Knight (Knight of Service and Quality (KSQ). Quality leadership Quest

- Member 2004 State Productivity Merit Awards SUB-Committee Rivers State (2004)
- Pillars of Nation Building Award Rivers State (2005)
- Team Leader Special Visitation Panel to University of Abuja (2012)
- Church of Nigeria, St Stephen's (ANG) Church Merit Award for Outstanding Services (2002)
- Church of Nigeria, Port Harcourt North Archdeaconry Merit Award for Meritorious Service (2002).
- Church of Nigeria Mother of Youth Award. St Ang. Church Rumueme (2012).
- Church of Nigeria Award of Honours, Port Harcourt Archdeaconry Women (2010).
- Merit Award by Izibuigwugwu Social Club of Rumueprikom Rivers State (2010).
- Award of Honour by St Peter's Cathedral Isiokpo, Ikwerre Diocese (2011).
- Distinguished Merit Award by Ikwu-Opuruiche, Isiokpo. Rivers State (2012).
- Woman of Merit Gold Award (WMGA)- PSR (2012)
- Woman of Excellence Merit Award (WEMA). Platinum Standard Publications Ltd. (2013)
- Certificate of Honour of Recognition by Isiokpo Independent Observers Network (2009).

- Church of Nigeria (ANG) Communion Award of Appreciation. Diocese of Niger Delta North (2003).
- Entrepreneurship (Amb.) Award by Association of Entrepreneurs and Technical Managers of Nigeria (AETMAN) Lagos (2010).
- Award of Meritorious Service Faculty of Science, University of Port Harcourt (2010).
- Friends of The Deanery Merit Award. St Stephen's Church Rumueme Deanery Men's Ministry (2013).
- Award of Excellence by Faithful Friends of Nigeria (Isiokpo).
- National Academic Medal Award, Afrinews Independent Magazine (2014).
- Legends Milestone Award, Living Legend Communications Ltd. (2014).
- Pillars of Nation Building Award, Strategic Institute of Natural Resources and Human Development (2014)
- 2014 African Role Model Award for Excellence. African Age Magazine (2014).
- Award of Excellence. Nye Nweali Isiokpo, HRM King Blessing Wagor JP, (Wagidi XL) In Conjunction with Isiokpo Central Age grade (2014)
- Church of Nigeria Knight of St Mary (KSM), Diocese of Niger Delta North
- The Great Woman of the 21st Century by American Biographical Institute (2004)

- The Contemporary Who's Who of Professional American Biographical Institute (2004)
- Great Job Award by American Biographical Institute (2004)
- Member American Professional Women's Advisory Board. American Biographical Institute.
- Award of Honour by St. Peter's Cathedral Isiokpo Ikwerre Diocese (2011)
- Legends Milestone Award (2014)
- African Role Model Award of Excellence (African Age Magazine 2014)
- National Academic Medal Award, Afrinews Independent Magazine (2014)
- Award of Excellence, Nye Newali lsiokpo, HRM King Blessing Wagor JP, (Wagidi XL) in conjunction with lsiokpo Central Age Grade (2014)
- Honours Award for Ladies of Letters for Outstanding Academic Accornplisment (2015) and many other awards too numerous to mention.
- Senior Mother, Diocese of Niger Delta North of the Anglican Communion of Nigeria
- 25th Anniversary Award, Diocese of Niger Delta North of the Anglican Communion of Nigeria

- ❖ VOTECH Faculty Award, Ignatius Ajuru University of Education Port Harcourt

Professor (Grand Dame) Akaninwor served as a member of the Governing Council, Kenule Beeson Ken Saro-Wiwa Polytechnic, Bori for eight years.

Grand Dame Akaninwor is a very committed servant in God's vineyard. She was the Treasurer, Mother's Union (St. Stephen's Rurnueme Deanery), Board member Diocese of Niger Delta North, Member Primate Advisory Committee Church of Nigeria, Anglican Communion and a host of other roles in the Church too numerous to mention. Her hobbies include reading, dancing, indoor games, cooking, child-care, creativity (hat making, bead making and general fashion) and Entrepreneurship.

Professor (Grand Dame) Akaninwor is a licensed Lay Reader in the Diocese of Niger Delta North, Anglican Communion of Nigeria. She has double Knighthood following her admission into the Order of Church of Nigeria Knight of St Mary (KSM), Diocese of Niger Delta North, as well as, investiture as Professional Knight (Knight of Service and Quality (KSQ) in 2011, hence she is a Grand Dame. Grand Dame Akaninwor was married to Late Sir Ndy Nyeche Akaninwor. The family is blessed with five Children (Buduka, Chinwe, Habinuchi, Manuchimso and Akpenuchi) and several Grandchildren. Professor (Grand Dame) Akaninwor is currently serving as a Commissioner in Rivers State Independent Electoral Commission.

My Vice-Chancellor Sir and distinguished Ladies and Gentlemen, please permit me to introduce an academic of great reputation, an Academic per excellence, a Philanthropist, an ardent Christian and Mother indeed. I present to you Professor (Grand Dame) Joyce Oronne Akaninwor, our Valedictory Lecturer for the day.

Professor Owunari A. Georgewill,
Vice- Chancellor.