

**FOOD SECURITY AND SUSTAINABLE DEVELOPMENT IN NIGERIA: IMPLICATION FOR SUSTAINABLE LIVELIHOOD.**

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**Abstract**

Food insecurity is a major health problem that has pervasive effects on many human health outcomes which is linked to dietary intake, nutritional status, and ultimately to physical health outcomes of all persons. Food is of paramount importance to the survival and growth of every human being. Achieving food security for all people at all times remains a huge challenge for several people in Nigeria. Despite its significant natural resources and continued economic growth, poverty remains widespread in the country and has increased over the years leading to communities living below the poverty line. This paper examined food security, concept of development, sustainable development and sustainable food security. It explored the factors responsible for food insecurity in Nigeria, challenges of sustainable food security in Nigeria, implications for sustainable livelihood and way forward to achieving sustainable food security in Nigeria. The paper recommends intensive promotion of research which will help to increase food production, environmental friendliness as well as policy change in order to achieve sustainable food security.

**Keywords** – Food security, Sustainable development, Implications, Sustainable livelihood, Nigeria

**Introduction**

The concern over food security among household members has existed in Nigeria for decades. Yet, no concrete measures have been taken to redress the problem. Complete eradication or alleviation of food insecurity is key and imperative to the growth and development of any nation globally (Adebayo, 2010). Inadequate food production can cause a serious drain on the nation's human resources; constitute a hindrance to national development and presenting with enormous consequences on human, social and economic growth (World Bank, 2006). Issues on food security was brought to lime light in 1974 during the world food conference when it downed on the governments that nations all over the world needs to strategise on how best to improve agricultural production so as to match the per capita needs of the population. Ban ki moon, the UN Secretary General at a world food summit in Rome in 2009, warned that six

million children die of hunger every year; 17,000 die of starvation every day and by 2050 the world will need to feed two million more monthly. This has rekindled the idea of achieving sustainable food security in all countries of the world including Nigeria.

Nigeria governments have come up with measures in the post to deal with the multi-faceted problems of food and nutrition through multi-disciplinary programme approach. Programme such as Operation Feed the Nation (OFN) by Obasanjo in the 70s, green revolution by Shagari administration in the early 80s, Directorate for Food, Road and Rural Infrastructure (DFRRI) by Babangida administration from 1985 to 1993 and expected to reduce the prevalence of inadequate food production. Unfortunately, the country has not been able to do much in addressing this issue.

Nigeria is blessed with abundant natural and human resources, but despite its significant natural resources, majority of the citizens are living below the poverty line. According to World Development Indicator (WDI)(2015), an estimated 60% of Nigerians live on less than US\$1.25 per day. Nigeria was also ranked 91 of a total of 104 countries on the 2015 Global Hunger Index and 153<sup>rd</sup> out of a total of 187 countries as the 2012 Human Development Index. Malnutrition and hunger which is linked to poverty have been ravaging most low income countries and affecting their productive capacity. Classifying Nigeria as one of the poorest countries testifies to our failure to achieve our development policy as well as national food security. National Planning Commission (2016) affirmed that 65 percent Nigerian population is suffering from lack of food security, adding that 40 percent of children under five are stunted and 25 percent are under weight. Infact, the poverty situation of the country is brought home by the 2006 Global Index of Hunger which ranked Nigeria as the 20<sup>th</sup> poverty-stricken nation. It is estimated that Nigeria spent a whopping \$2billion dollars importing about six million tonnes of wheat, \$750 million on rice, \$750million on sugar and \$500 million on milk and other dairy products (Tell, May 2008). As things stand now, Nigeria is likely to spend even more with the global rise in food prices. National Planning Commission (2011) showed that “market tensions

manifest in part, through price increases would be most acutely felt by Vulnerable households, where difficulties in accessing cereals would lead to localised food security problems (Tell, May 2008).

The problems of hunger and malnutrition in Nigerian are more severe now than ever before. It is estimated that the percentage of Nigerian households that are food insecure rose from 18% in 1986 to over 60.5% in 2016 (National Planning Commission, 2016). The general poor economic situations in Nigeria has aggravated low availability of food to her citizens. World-Bank (2012) estimates the population of Nigeria to above 160 million people, the largest in Africa almost accounting for 47% of West Africa's total population. As the population increases, the country's demand for food increases, while the ability to produce food diminishes because of pressure from the growing population in form of desertification, climate change and erosion as well as bad governance and political instability are impacting diminishing resources and further threatening food production.

According to WorldBank (1986), food security requires that all members of the community, at all times, have access to basic food and nutrition that ensures stable wellbeing and protection from hunger, starvation and malnutrition. Clover (2003) defined food security as "food that is available at all times, to which all persons have means of access, nutritionally adequate in terms of quantity, quality and variety, and is acceptable within the given culture.

Food and Agricultural Organisation, (FAO, 1996) defined food security as the situation when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Food security globally focuses on providing opportunity to families and individuals growing ranks of agric-business entrepreneurs in a way that will generate higher incomes for farmers while also enhancing expansion in the industrial sectors. It anchored on availability, accessibility utilisation and stability of food in the world population at all time, with preference to vulnerable group (FAO, 2009; World Bank, 2012). By so doing, this will go a long way to promote the growth of value chains in agricultural sector and beyond. It also adds value to the existing agricultural practices and farming systems in the rural and urban areas.

Consequently, these concepts are not actualised among majority of households in the country, especially among the rural poor. Poverty has been heavily linked to the high rate of hunger and food insecurity in the country. The accessibility of these foods or opportunity for the poor to access these foods are highly limited especially due to their weak purchasing power. The availability of food tends to be

stable due to the increasing rate of importation. But the most important aspect which leads to malnutrition and hunger is the accessibility of these foods. These tend to be an uneven ability to access food by people due to the exuberant food prices, poverty, unemployment and the uneven distribution of resources. This scenario poses a great threat to the food security of the country. Therefore, food security can be deduced to have social, economic and political implications. This brings the need for the reinforced attention on the food security status of Nigeria as many citizens are forced with the dilemma of knowing where their next meal is going to come from due to the rate of poverty in the country. It is against this backdrop, that this paper x-rays food security, sustainable development, implications for sustainable livelihood and the way forward.

### **Meaning of food insecurity**

Food insecurity (FI) is a growing problem in many populations worldwide. According to a recent report by the Food and Agriculture Organisation (FAO, 2004), despite massive global efforts, there has been "virtually no progress" made in improving the food security status of the estimated one billion food insecure people worldwide. Food insecurity is defined as a state in which people's physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life becomes threatened and has been linked to numerous deleterious health outcomes that affect both the mind and body (Weingartner, 2008). Food security is defined in different ways by international organisations and researchers. The World Food Summit (1996), defined food security as existing when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (World Food Summit, 1996; FAO, 2009).

From the nutrition point of view, Salih (2005), defines the food security of a country, region or household as the ability to meet up with its target consumption levels on a yearly basis, food insecurity can either be chronic or acute. According to Salih (2005), "acute food insecurity is a temporary decline or shortage" in the food needs of a country, regions or households. The decline may be due to fluctuations in the production of food, changes in incomes and food prices. On the other hand, chronic food insecurity occurs when there is persistence in food decline.

Sub-Saharan Africa, where Nigeria falls within seems to be at high risk of food shortage in the nearest future. Sanusi and Yusuf (2006) reported that, sub-sahara Africa has the lowest regional scores in food security for a number of reasons among which is

food affordability undermined by low average incomes, widespread poverty and a heavy reliance on food imports.

Food security as a problem at the national level was first felt in Nigeria in the 1960s, it only started when food self-insufficiency became one of the objectives of the colonial monetary systems as a result of oil boom diverting the economy from agriculture to dependence on the oil sector (Oni, 2008). As Sen (2006) argued, ensuring access to food, not merely increasing food supplies, should be regarded as the major pillar of food security. This assertion is borne out by empirical evidence that suggests that even in times when countries experience famine, food supplies have been generally available, even in regions where large numbers of people died of starvation. The problem is that those who needed the food do not have the means to acquire it (Sen, 2006).

### Concept of Development

Development means different thing to different people. Ogueri and Ewuzie (2016) described development as what we do in attempting to improve our life within the environment. United Nation (2012) identifies development as economic growth, modernisation, distributive justice, socio-economic transformation and spatial re-organisation. Rogers (2006) saw development as a type of social change in which new ideas are introduced within a social system to higher per capita income and levels of living through more production, methods and social organisations.

Rogers (2010) believed that development should mean “a widely participatory process of social change in society intended to bring about social and material advancement for the majority of people through gaining control over their environment. Barbier (2006) confirmed that development is said to bring with it valuable and positive changes that improves the living standards of the people, as it creates employment opportunities and equality of opportunity and reduces poverty among other things. The author further stressed that this increases the efficiency of a system in the production of goods and services to meet the basic needs of the people in a society.

In the light of the above, development means greater understanding of social, economic and political process, enhanced competence to analyse and solve problems of day-to-day living, expansion of manual skills, greater control over economic resources, restoration of human dignity, self respect and equality. Thus, development is seen as a multi-dimensional process involving the transformation and improvement of economic, social and political situations.

### Sustainable Development

United Nations (2012) broadly defined sustainable development as a system approach to growth and development and to manage natural resources, production and social capital for the welfare of their own and future generation. The term sustainable development as used by the United Nation (2014) incorporate both issues associated with land development and broader issues of human development such as education, public health and standard of living. In defining sustainable development, Organisation for Economic Co-operation and Development (OECD, 2012), acknowledge the need for both intra and inter generational equity-development that meets not only today's human needs but also those of more people in the future. The commission further argued that development is sustainable if it meets the needs of the present generation without compromising the ability of future generations to meet their own needs.

According to UNDP (2006) sustainable development could probably be otherwise called “equitable and balanced”, meaning that, in order for development to continue indefinitely, it should balance the interests of different groups of people, within the same generation and among generations, and to do so simultaneously in three major interrelated areas – economic, social and environmental.

United Nation (UN, 2014) further explained that the concept of sustainable development implies limits nor absolute limits, but limitations imposed by the present state of technology and social organisation on environmental resources and by the ability of the biosphere to absorb the effects of human activities. They stressed that technology and social organisation can be managed and improved to make way for a new era of economic growth.

United Nation (2014) has described sustainable development in terms of three dimensions or domains: economic, environmental and social or “ecology, economy and equity”. This has been expanded by some authors to include a fourth domain of culture (James et al, 2015), institutions or governance (Scerri and James, 2010). A study of UNDP (2013) concluded that sustainable development should be reframed through the lens of four interconnected domains: environmental, economics, politics and culture.

Similarly, UNDP (2006) submitted that sustainable development is a multifaceted concept that has drawn on a number of disciplines including economics, ecology, ethics, sociology and political science. The organisation stressed that sustainable development links the welfare of generations with the capacity of the biosphere to sustain life and has a policy focus. According to him, sustainable

development is not a fix state but rather a process of change in which resources exploitation, the direction of investment, the orientation of technological development and institutional change are made consistent with the future as well as present needs.

### **Sustainable Food Security**

Sustainable food security has been defined in various ways by different scholars. According to FAO (1996) food security is access to the food needed by all people to enable them live a healthy life at all times. A country is said to be food secured when there is access to food of acceptable quantity and quality consistent with decent existence at all times for the majority of the population (Reutlinger, 2005; Idachaba, 2004). This means that food must be available to the people so as to meet the basic nutritional standard needed by the body. But it should be noted that availability of food does not mean accessibility to food. Availability depends on production, consumer prices, information flows and the market dynamics.

World Bank (2006) defined sustainable food security as an access to enough food for an active, healthy life at present as well as ability to provide enough in the future. Abudullahi (2008) defined sustainable food security as when people have physical and economic access to sufficient food to meet their dietary need for a productive healthy life at present as well as in the future. This definition outlines some indices for measuring the extent or degree of food security to be achieved by any country and the indices are adequate national food supply, nutritional content, accessibility, affordability and environmental protection.

Absence of food security is food insecurity; food insecurity on the other hand represents lack of access to enough food and can either be chronic or temporary. Adeoti (1989) opine that chronic food insecurity arises from lack of resources to acquire and produce food thereby leading to persistent inadequate consumption of nutritious food bearing in mind that the physiological use of food is within the domain of nutrition and health. When individuals cannot provide enough food for their families, it leads to hunger and poor health. Poor health reduces one's ability to work and live a productive healthy life. Poor human development destabilises a country's potential for economic development for generations to come (Otaha, 2013).

### **Factors responsible for food insecurity in Nigeria**

An increasing number of Nigerian households are becoming food insecure, as a result of downturn of the economy, rising inflation and escalating food crises beyond their purchasing power. The factors

responsible for food insecurity in Nigeria are numerous but to mention a few.

Firstly, all efforts directed at restoring agriculture to its former status before the oil boom in the nation's economy could be regarded as evidence of increased concern for tackling food crises in the country (Ojo and Adebayo, 2012). The governments in Nigeria has on many occasions established policies that could increase food productivity and reduce food importation but, ineffective implementation of such policies has hampered good results with regards to food production and accessibility.

The food distribution system in Nigeria remains largely inefficient due to factors such as crop seasonality, inadequate storage technology facility, inadequate transport and distribution system and inadequate market information. All of these, result in considerable spatial and seasonal variation in food production and availability, and are responsible for the considerable food price variations in the country (National Planning Commission, 2002).

The major challenges facing farmers after the cultivation of their crops are the issues of where to store the produce for future consumption by the populace. Compared with developed countries like China, America where provisions are made by the government in preserving food items for the growing population in prevention of starvation and hunger during famine (Nwaniki, 2005). This problem is more pronounced at the household level of cereals such as maize, millet and wheat are estimated at the range of 25% to 30%, 50% to 70% for root crop and approximately 70% for fruits and vegetables (National Planning Commission, 2002). Due to economic pressures and lack of storage facilities, farmers are forced to sell their produce soon after harvest at low prices resulting in escalating food prices during off-season period.

The soils continue to degrade leading to reduction in farm productivity. Uses of fertilizers are critical to improving productivity in some geographical locations in Nigeria. Poverty and cash constraints have limited the ability to purchase fertilizer, thereby leading to poor harvest of farm produce. This situation leads to limited food production which fails to keep pace with the population growth, bringing about inflation in food prices and making it unaffordable for majority of people (Kherallah et al, 2002).

Youths are very important resources for every nation especially in sustaining the growth and development of the agricultural sector. Unfortunately, these categories of people are virtually left out. Most young people are no longer interested in farming because they consider it a low financial venture, which is meant for the local people in rural areas. Migration

of youths from rural to urban areas in search of white collar jobs and greener pastures has greatly affected their participation in farming. These able hands who are supposed to engage in farming activities are more interested in other money making ventures (Mangal, 2009). Agriculture being one of the foundation pillars of developments in any society can only function, if there is adequate participation of youths in farming which will bring about massive improvement in food production, thereby contributing to economic growth and stability, also creating job opportunities for self-reliance and empowerment (Ashford, 2007).

Climate change is one of the tropical issues affecting the world in recent times with its impact been felt in all sectors and most significantly, on agriculture. Climate change is considered as one of the most serious environmental threat in the 21<sup>st</sup> century. Scientists have been predicting the consequences of climate change since the 1980s. They noted that the average temperature of the earth has increased by 0.74 degrees Celsius over the past 100 years. Iloh (2014) noted that if the temperature rise continues and nothing is done about it, the condition may pose serious threat to countries that depend mostly on climate-sensitive resources for sustenance of livelihood and overall development. As stated by Eboh (2009), countries in sub-Saharan Africa, including Nigeria are likely to suffer as a result of these global environmental hazards through erratic rainfall patterns, heightened temperature and susceptibility to pest and disease outbreaks, thereby decreasing crop yields and consequently increasing hunger.

The North-eastern States of Borno, Yobe and Adamawa are known for production of the bulk of staple foods such as maize, millet, wheat, rice and cowpeas. Following the incessant attacks on the region by terrorist groups since 2012, thousands of residents who are predominantly farmers, are forced out of their homes thereby denying them access to their farm lands and food distribution. This situation has led to hike in prices of food items such as maize, millet, wheat, tomatoes, smoked fish and rice leading to acute food insecurity in Nigeria.

### **Challenges of sustainable food security in Nigeria**

Nigeria depended so much on agricultural productivity for its revenue until the exploration of oil in 1970s. The oil boom led to the negligence of the non-oil sectors especially the agricultural sector which used to be the major source of revenue for the country. The attention given to agriculture reduced drastically, farming reduced drastically, farmers needs were not attended to and the worst of all was that research and development in the sector slowed down causing a stagnation in food production.

Government policies with regard to agricultural production were rapid with plans hastily put together and little or no participation from those who are engaged in agricultural productivity. Moreover, policy change that championed increased incentive for local farmers for improved local food productions were neglected. Urban and community farming and even home gardening were no longer encouraged as land agents made it too difficult for people to obtain land for building as well as for agricultural productivity.

The type of farming system prevalent in Nigeria is the traditional subsistent farming. This system is characterised by use of simple farm tools, small farm holdings, restricted access to credit facilities and low agricultural inputs, inadequate storage facilities, insecure markets for post-harvest products and exploitation of farmers by the middlemen. In terms of technology, Nigeria is still lagging behind when compared to other nations in Europe and Asia. Due to poverty and illiteracy, farmers do not have access to modern communication system with which they can access information regarding new technologies. Also there are few extension officers to transfer new technology to the farmers. Funding for agricultural research is still low in Nigeria. Also heavy importation of food crops affects productivity of local farmers because the small farmers cannot compete with the imported crops.

The demand for food exceeds the supply of food because the rate of growth of population is higher than the growth in agricultural productivity. Also the large population continues to relocate to the urban areas in search of white collar jobs which do not exist. This youth rural-urban drift makes it difficult for the country to be food secured.

Flood, Drought, desertification are environmental issues affecting availability of food in Nigeria. Climate change affects food supply through loss of farmland, fluctuating food prices, increases in food borne illnesses and other food utilisation issues Grace Communication Foundation (GCF) (2016). The recent environmental degradation through deforestation and flooding has wide negative implication for food production. For instance, in 2012 the country witnessed an unprecedented rainfall as a result of extreme weather. The rainfall resulted in severe flooding causing loss of agricultural crops, live stocks and human lives. According to Metu et al, (2015), the estimated loss of the country's GDP was worth N2.6trillion. In the same period, share of agriculture value added to total GDP declined from 23.89% in 2010 to 22.05% in 2012 (WDI, 2014). Other environmental factors that may affect food security includes soil degradation, soil pollution and deforestation. Also air and water pollution from

industrialisation threaten both human and natural resources to an extent that food securities capabilities are damaged.

Corruption in Nigeria has been on the increase leading to money budgeted for public utilities being siphoned for private use. This leads to decay in infrastructure especially rural infrastructure where majority of the farmers live and operate from. For instance, we have seen situations where money meant for importation of fertilizers are siphoned.

### **Implication for Sustainable Livelihood**

A livelihood is a means of gaining a living; it is seen as adequate stocks and flow of food and resources to meet basic needs. While sustainability refers to the maintenance or enhancement of resource productivity on a long-term basis (Chambers and Conway, 1991), sustainable livelihood therefore, refers to the capability of individuals to enhance and maintain adequate resources for basic needs on a long – term basis. Food production and consumption as a means of livelihood should be sustainable, but it is unfortunate that the food system today becomes a source of danger.

Garnatt (2014) reported that the food system today is destroying the environment upon which future food production depends. The food system generates enough food energy for our population of over 7 billion it does not deliver adequate and affordable nutrition for all, which according to Garnatt about half the global population is inadequately or inappropriately nourished. From the foregoing, once food is scarce or inadequate people may not have choice of what to eat thereby increasing the likelihood of consuming unhealthy food or food that is of less nutritional value.

Food insecurity can also be inferred to be a condition that signifies either hunger resulting from problems with availability, access and use or vulnerability to hunger. Therefore, hunger is a subset of food insecurity (World Food Programme (WFP), 2007). Hunger can therefore be seen as an uncomfortable or painful sensation caused by insufficient food energy consumption. Therefore, hunger tends to lead to poor health by increasing the severity of infectious disease, which results in the risk of dying from a disease once ill. Accordingly, Population Action International (2011) stated that pregnant and breastfeeding women and infants are often the most severely affected by a lack of food. Also, children especially below five years of age are more vulnerable to diseases during this age group. Thus inadequate nutrition among pregnant women impacts children's growth and development throughout their life cycle (WFP, 2007).

Due to the food insecurity scenario in the world children less than five years of age in developing countries have a high propensity of being short or stunted in growth and this tend to affect one child in every three, with an estimated 178 million children being affected (WHO, 2007). The elderly are also affected by the food insecurity scenario due to the fact that they are mainly dependent on others. They are usually constrained in accessing adequate quality and quantity of food. This can therefore lead to poor health as they require greater health care because of their weakened immune system which makes them susceptible to diseases and infections.

Also poverty, hunger and malnourishment makes workers perform poorly because of decreased working capacity and therefore do not get enough access to better paying jobs thus leading to suffering. Several studies support this claim such as work by Strauss and Thomas (2006) when they indicated that there is positive correlation between wage achievement and nutritional status as measured by either weight, body mass index, stature or caloric and protein intake.

Finally, although food shortage (security) cannot be attributed as a direct cause of death but severe scenarios of food insecurity can contribute to high mortality because inadequate nutrient make people more susceptible to recurring and more severe episodes of illness.

### **Way forward to achieving sustainable food security in Nigeria**

First and foremost, agricultural productivity can be improved through encouragement of research. Research Institutes should be funded so as to encourage innovation and participatory research. Through research, foreign technology can be modified and applied in Nigeria. Inorganic fertilizers and chemicals can be replaced with alternatives such as cow waste and composite manure which are environmentally friendly. Also extensions services should be encouraged and strengthened because through the extension services new technology can be transferred to the farmers.

There should be storage facilities to enable farmers store their post-harvest crops. Farm products are perishables; farmers are forced to sell their products so quickly thereby making revenues that do not meet their daily need. The storage facilities can help them preserve their products before taking them to the market for sale. The storage facility will also help provide enough food reserve for the country.

Secondly, improved agricultural biodiversity through improved agricultural practice will also increase food supply. Large scale farming involves planting one type of crop on a large piece of land, but

with improved farming different genetically improved crop types and species may be planted on a piece of land. Mono-cropping also exposes crops to both pests and diseases and also increases the use of organic fertilizers and pesticides that erode soil biodiversity. In order to achieve sustainable food security, Nigeria farmers as well as government should embrace this modern food production technique that comes in form of agricultural biodiversity aimed at increasing livestock and crop production.

Again, efforts to increase productivity have led to pressure on natural resources as well as environmental damage. There should be effective management of the environment by reducing the rate of deforestation. Trees should be planted as often as possible especially in the desert. Providing habitat for agricultural pests and increasing resilience to shocks and long-term climate change can help in the improvement and management of natural resources. Tree planting should be encouraged because forest trees outside the forest helps in protecting soil and water resources, promotes soil fertility and provides protection from extreme weather events.

Sustainable food security can be achieved if the government adopts inclusive growth in its developmental efforts. Development should be participatory and environmentally friendly. People-Centered agricultural development puts the farmers first and attacks poverty with opportunities and education. It requires involving the rural people in decision making stages of agriculture productivity. The inability of government to involve these sets of people in defining and designing projects has led to the failure of some of these projects. There should be well designed social protection systems - such as risk insurance scheme and community empowerment – to help households sustain their resilience to shocks.

### Conclusion

This paper is an attempt to examine food security in Nigeria, sustainable food security, factors responsible for food security, implications to livelihood as well as ways forward for ensuring food security in Nigeria. Achieving sustainable food security means ensuring continuous access to food both quantity and quality for the present generation as well as the future generations. Nigeria is food insecure because food production falls below the demand for food even though the government tries to supplement through importation of food.

The major challenge of food security in Nigeria is poverty. Poverty reduces the purchasing power of the people making it difficult for them to acquire their daily minimum requirement of food. Other causes of food insecurity are environmental factors, inconsistent policy pronouncement,

unsustainable agricultural productivity and underdeveloped infrastructural facilities, especially in the rural areas. The situation is not insurmountable. The paper recommends provision of incentive for private sector participation in the agricultural sector, poster effective linkage with the industrial sector, add value to agricultural produce through processing for export, create more agricultural and rural employment opportunities, increase the income of farmers, reduce drastically the rising trend in food import, intensive promotion of research which will help to increase food production, environment friendliness as well as policy change in order to achieve sustainable food security.

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