

AGRICULTURE AND FOOD SECURITY IN NIGERIA

By Dr. Patrick O. Erhabor

January 24th. 2015

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BACKGROUND

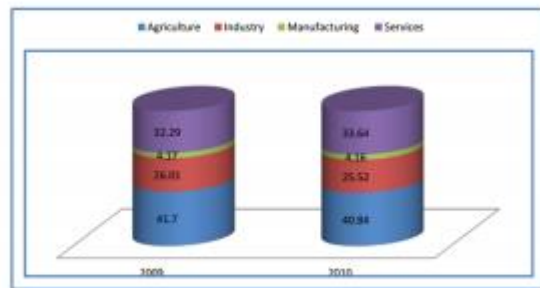
Since the establishment of The Food and Agriculture Organization (FAO) in 1945, it has been preoccupied with addressing the problem of global famine, and this has, over the years, led to massive increases in food production. Despite improved productivity, many developing countries are experiencing food shortages, as increase in food production has been overwhelmed by higher increases in population. In many African countries, food security situation at both national and household level is poor. The International Food Policy Research Institute (IFPRI, 2002) estimated that about eight million people go to bed hungry and 24,000 people die from hunger each day, even though the right to food is a basic international right. In the South African region alone, about 14 million people are in need of food aid within six different nations. Therefore, while population control should be encouraged in the developing countries, improved food production is imperative.

The current worldwide concern for food security and sustainable agricultural development, especially in Less Developed Countries (LDCs), is commendable. Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. Achieving food security means ensuring that sufficient food is available, that supplies are relatively stable and that those in need of food can obtain it. Consequently, a determined and well-targeted effort must be made to improve on food security for the increasing world population.

The percentage of food insecure households in Nigeria was reported to be 18% in 1986 and over 41% in 2004. USAID reported that in the main 2007 harvest, localized production deficits occurred as a result of localized poor rainfall and an early end to the rainy season in mid-September. Consequently, prices started rising earlier than normal, and remained above average, especially in the North, fueled by speculative hoarding from traders and high industrial demand for grains. Many poor households had to turn to the market earlier than normal in the season to purchase food, resulting in moderate food insecurity and localized high food insecurity in the North.

IMPORTANCE OF AGRICULTURE

- Agriculture is key in the survival of human race as it produces the necessary food for consumption.
- Agriculture prevents hunger, malnutrition, ill health and in extreme cases death. Besides food, agriculture contributes greatly to the overall growth of an economy; it employs a good number of the populace and contributes to national income.
- In sub-Saharan Africa and Nigeria specifically, agriculture employs more than an average number of the populace.
- In Nigeria it contributes greatly to real GDP (Gross Domestic Product) in comparison to other sectors as seen below.



Source: Derived from NBS's Data on National Accounts

Contribution of Key Sectors to GDP

- It contributes about 40% to revenue from export and contributes to the overall economy (Diao *et al.*, 2006; Fulginiti, *et al.*, 2004). Therefore agriculture should be a key component of growth and development in African countries that desires to attain food security.

	2009			2010		
	% of GDP	Growth (%)	Contribution to GDP Growth (%)	% of GDP	Growth (%)	Contribution to GDP Growth (%)
GDP BASIC PRICES	100.00	6.96	100.00	100.00	7.87	100.00
Oil & Gas	16.29	0.45	1.13	15.85	4.98	50.1
Non-oil	83.71	8.32	98.87	84.15	8.43	49.9
Agriculture	41.79	5.88	35.99	40.84	5.64	29.1
A. Crop Production	37.98	5.83	31.49	36.37	5.57	28.1
B. Other Agriculture	4.84	6.31	4.14	4.47	6.23	3.6
Industry	26.81	2.85	11.89	25.52	6.81	19.1
A. Mining & Quarrying	16.62	0.66	1.67	16.20	5.13	50.1
I. Oil & Gas	16.29	0.45	1.13	15.85	4.98	50.1
A. Solid Minerals	0.33	12.08	0.55	0.34	12.28	0.5
B. Manufacturing	4.17	7.85	4.67	4.16	7.84	4.0
C. Building & Construction	1.92	11.97	3.16	2.00	12.08	2.9
D. Utilities	3.30	3.23	1.59	3.16	3.32	1.3
Services	32.29	12.94	53.32	33.64	12.38	60.1
A. Wholesale and Retail Trade	18.14	11.48	28.72	18.70	11.19	25.1
B. Hotel & Restaurants	0.48	11.89	0.79	0.50	12.01	0.7
C. Transport	2.70	6.83	2.66	2.88	8.72	2.3
D. Telecommunication	3.39	34.73	14.22	4.49	34.03	15.1
E. Finance & Insurance	3.70	4.01	2.19	3.57	3.85	1.6
F. Real Estate & Business Services	1.81	10.62	2.67	1.85	10.36	2.3
G. Public Administration	0.68	4.41	0.44	0.86	4.23	0.3
H. Health & Education	0.25	10.01	0.34	0.25	9.82	0.3
I. Other Services	0.93	9.80	1.27	0.94	9.70	1.1
Primary Production	58.32	4.34	37.27	57.04	5.49	40.1
Secondary	6.09	8.12	7.83	6.16	8.84	7.6
Tertiary	35.59	11.16	54.91	36.80	11.55	52.1

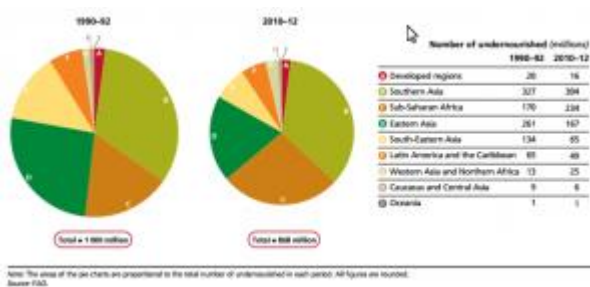
Source: Computed from NBS Data

AGRICULTURE AND OIL

Agriculture has been described as the article of sustainability. In clear recognition of its crucial role in the sustainable development of a mono-product economy like that of Nigeria, agriculture is currently receiving its deserved attention from the government. This is a welcome development, though coming so late, after over half a century of near total neglect resulting mainly from discovery of crude oil (black gold) in commercial quantities in 1956. A visit to the nation's first commercial oil well at Oloibiri, shows that it is already dried up, after only 50 years of continuous production. This is a clear attestation to the non-renewable nature of crude oil. World Bank records show that the Nigerian government is diversifying the nation's economy by measures aimed at ensuring food security. To achieve this, the presidential initiative was embarked upon by the government, and this initiative has translated to the current Agricultural Transformation Agenda (ATA), aimed at maximizing the full potentials of the agricultural sector for the overall economic growth and development of Nigeria.

THE FOOD QUESTION

The Nigerian food problem is indicated by high food import bills, consistent rise in domestic food prices, high annual growth rate of food demand when compared to supply, and nutritional problems among others. Nutritional problems are seen in the number of undernourished by region between 1990-92 and 2010-12, share of animal-source foods in total dietary energy supplies (percentage) and per capita availability of fruits and vegetables (grams/day).

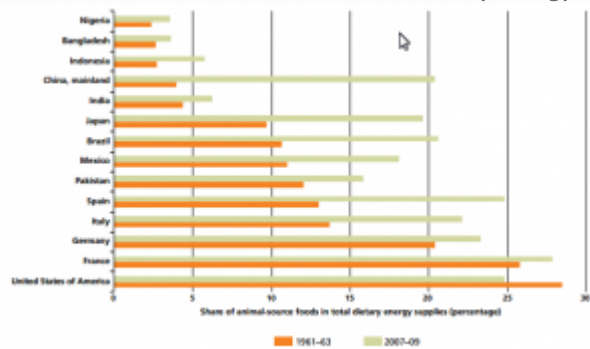


FAO, 2012

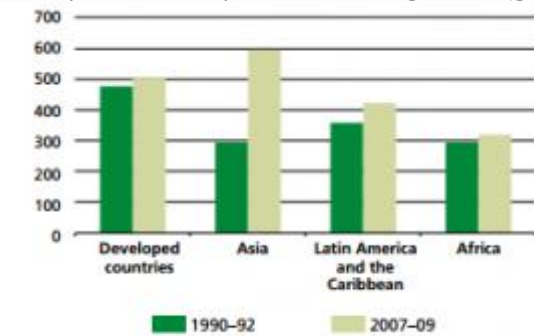
Prevalence of undernourishment and progress towards the World Food Summit (WFS) and the Millennium Development Goal (MDG) targets in developing countries

World Region/Subregion/Country	Number of people undernourished						Proportion of undernourished in total population					
	1990-1991	1995-2001	2006-2007	2007-2008	2010-2011	Change as for 2007-2008	1990-1991	1995-2001	2006-2007	2007-2008	2010-2011	Change as for 2007-2008
	(millions)	(millions)	(millions)	(millions)	(millions)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Global	1	2	2	2	2	17.2	18.4	20.6	17.0	15.0	17.3	-0.3
Europe	9	10	10	12	13	40.3	25.0	32.8	32.9	32.4	36.4	+4.0
Latin America	1	1	1	1	1	88.0	31.0	34.9	29.6	29.6	31.4	+1.8
Malaysia	3	3	3	4	7	147.8	24.8	32.4	28.1	28.1	33.2	+5.1
Mali	4	3	3	3	4	-10.9	44.8	38.8	34.7	33.0	33.1	-0.1
Mali	2	2	2	1	1	-44.3	25.3	21.5	14.7	9.5	7.9	-16.6
Mozambique	8	8	8	9	9	18.0	17.1	45.3	40.3	39.9	39.2	-0.7
Norfolk	1	1	1	1	1	43.0	37.5	24.9	28.8	32.7	33.9	+1.2
Niger	3	3	3	2	2	-11.7	36.0	29.8	20.0	18.6	12.6	-16.0
Nigeria	19	18	18	11	14	-18.1	19.3	18.2	6.8	7.3	8.5	+1.2
Rwanda	4	4	4	3	3	-11.9	52.6	48.5	42.1	34.2	38.9	+4.7
Senegal	2	2	2	2	3	43.9	21.7	24.2	18.9	16.5	20.9	+4.4
Sierra Leone	2	2	2	2	2	3.3	41.9	41.1	38.3	38.1	38.8	+0.7
South Africa	10	10	10	10	10	0.0	<5	<5	<5	<5	<5	0.0
Tanzania	11	11	12	15	16	13.6	42.1	31.7	32.9	36.6	39.4	+2.8
Togo	1	1	1	1	1	-11.1	32.8	25.2	20.4	19.8	16.5	-3.3
Uganda	5	6	8	10	12	145.7	36.0	38.5	27.9	31.0	34.6	+3.6
United Republic of Tanzania	8	14	14	15	16	131.1	29.4	48.4	35.1	36.1	38.8	+2.7
Zambia	3	4	6	6	6	131.1	34.3	43.9	48.3	47.5	47.4	-0.1
Zimbabwe	5	5	5	5	5	-11.7	44.1	43.1	38.2	39.9	32.8	-7.1

Share of animal-source foods in total dietary energy supplies (percentage)



Per capita availability of fruits and vegetables (grams/day)



Food security is currently constrained for many households in Nigeria. The common people, especially those living in the rural areas that lack access to sufficient resources to produce or buy quality food, are worse hit by this phenomenon. But why is this so? Why is Nigeria, like other developing countries, still facing persistent

food crisis in spite of her vast land area of about 923,768 km²? However, 30.7 million hectares of Nigeria's land area are under cultivation.



It is inexplicable that in 2014, Nigeria cannot produce enough food in adequate quantity and quality to feed herself. Why can't we simply feed ourselves as a nation so blessed with vast agricultural resources? This is the billion naira question begging for answer!

Over the years, a number of agricultural development initiatives have been introduced by successive Nigerian governments to check the food security situation and make food available for the ordinary Nigeria, as a way of improving his standard of living. Some of these programmes are; the National Accelerated Food Production Programme (NAFPP), Agricultural Development Programme (ADP), Operation Feed the Nation (OFN), River Basin Development Authorities (RBDA), Agricultural Credit Guarantee Scheme (ACGS), National Agricultural Land Development Authority (NALDA), National Fadama Development Project (NFDP) as well as the National Special Programme on Food Security (NSPFS).

In September 2011, the Federal Government of Nigeria unveiled its Agricultural Transformation Action Plan which is aimed at revolutionizing the sector in the next four years. The action plan is to transform agriculture from its current developmental status to a purely business endeavour, with emphasis on partnership, value-chain development, investment and accountability. This will enable Nigeria to be food-secure by increasing production of key food staples by 20 million tonnes with a view to creating over 3.5 million jobs with five-value chains. In spite of these bold initiatives, food crisis still persist in Nigeria and food access is increasingly being constrained by high food prices. This has resulted in many rural households in Nigeria experiencing inadequate food intake and harsh economic conditions owing to food insecurity.

AGRICULTURAL PRODUCTIVITY AND FOOD SECURITY

The FAO in the past, under the sponsorship of the Federal Government of Nigeria (FGN), has undertaken to tackle the food security problems of the country by addressing the fundamental problems of Nigerian farmers.

Household impacts and response

United States Agency for International Development (USAID, 2009) reported that as a result of the parallel increases in the prices of all essential staple foods, food access for poor households in both urban and rural areas had diminished with increases in the risk of food insecurity, especially in the dry savannah areas of Northern Nigeria in the States bordering the Republic of Niger and Chad. In response, the federal government began intervening in the market in March to stabilize market prices. In February, Nigeria established a federal strategic grain reserve of about 72,000 tonnes. The federal government has since sold 65,000 tonnes, including to the 36 States (46,000 tonnes), the poultry industry (3,000 tonnes), and individual households (1,158 tonnes). The remaining stocks was reinforced to a level of 24,000 tonnes, and kept in warehouse as an emergency stock.

The current level of the federal strategic grain reserve is insufficient to have a significant impact on markets. The subsidized sale of federal stocks could only have an impact on prices and stocks if additional stocks are provided by the States and if traders decide to release some of their stocks following the government operation. The exact quantity of stocks held by the States as buffer stocks is presently not known to the federal reserve agency. Many of the States do not have any buffer stocks, as they mainly depend on the federal government for market or emergency interventions. The three states that are believed to have been

building up buffer stocks over time are Kano, Zamfara, and Bauchi. Last year, the States of Kaduna, Katsina, and Yobe also indicated some seriousness about building up their stocks.

Rises in food insecurity often result in decreases in meal frequencies, inadequate balance of nutrients, and a surge in malnutrition. As a result, households go deeper into debt because of pressing needs. They send an increasing number of members of the household, including women, to cities in search of employment opportunities. Remittances are relied on for up to 40% of household sources of income, as opposed to 10% in normal periods. Normal seasonal migration patterns of pastoral households are not followed in the extreme North, leading to increased conflict between farmers and herders and heavy losses of animals and farmlands. The deterioration of the sources of income and resultant decreased food access for pastoral households results in a surge in malnutrition among children under the age of five. Although farmers would expand the cultivated area planted for major crops in this scenario to compensate for low market stocks, the cumulative impacts of droughts, crop failures, and low fertilizer usage result in poor cereal production. The unfavorable conditions lead to unseasonably high prices, low stocks, and low household food reserves after the harvest begins, increasing the prospect of rising food insecurity.

THE FARMERS THAT PRODUCE OUR FOOD

In most of Sub-Saharan Africa, agriculture employs over 70% of labour force. However there is a decline since the discovery of crude oil which led to relegation of agriculture. Over 96% of farmers still operate on a small-scale, farming less than five hectares and producing over 90% of agricultural output.



These farmers have been described in several studies as resource-poor and ageing. Also, with continuing population growth and a fixed land base, the farms are getting smaller, with inefficient use of production resources and are incapable of providing adequate livelihood for the families they support (Hazell, 2002)

Food Security and Poverty

Food security depends on availability of food, access to food, and utilization of food (FAO, 2000). Food availability refers to the existence of food stocks for consumption. Household food access is the ability to acquire sufficient quality and quantities of food to meet all household members' nutritional requirements. Access to food is determined by physical and financial resources, as well as by social and political factors. Utilization of food depends on how food is Proportion of the Nigeria's annual buget in agriculture used, whether food has sufficient nutrients, and a balanced diet can be maintained (FAO, 2000).

Poverty remains the main factor in household food insecurity. Poverty has various manifestations including lack of income and productive resources sufficient to ensure sustainable livelihoods, hunger and malnutrition, ill health, limited or lack of access to education and other basic services, increased morbidity and mortality from illness, homelessness and inadequate housing, unsafe environments, social discrimination and exclusion (Frye, 2005). Enhancing food security and poverty alleviation has been a central preoccupation for mankind especially in sub-Saharan Africa where hunger persists and has been increasing in recent years (Dixon and Minae, 2006).

- *Poverty*: Poor people do not and cannot have economic access to food (Dreze and Sen, 1991). From World Bank Reports, the hungry and malnourished people in the world are also the poorest, which gives a somewhat lopsided interpretation to the concept of global food crisis. Harrison (1981), opined that the experience of hunger in the developed world is ironically largely limited to the grossly overfed, who happen to be on a temporary diet. But this is not so with the LDCs.

Montek Ahluwalia, a World Bank economist, in a sample of 1969 incomes from 44 developing countries, found that 48% were very poor (with incomes below \$75) and 31% were extremely poor (with income below \$50). The proportion of very poor was very low in Latin America (17%) but 44% of Africans and no less than 57% of Asians were below the poverty line. The International Labour Organization (ILO) also estimated that in 1975, 40% of the workforces of non-communist developing countries were unemployed or underemployed. Most of the poor belong to all three categories, many to the 455 million malnourished, two-third seriously poor, and two-fifth destitute. These are empirical evidences of how long this problem has persisted.

Hunger is a painful focus on absolute poverty. Absolute poverty has been increasing both in total numbers and in proportion of the population affected. Two-thirds of the absolute poor live in Asia. These regions are currently the worst hit in respect of the current global food crisis.

OTHER CAUSES OF HUNGER THE WORLD OVER

- *Population Pressure:* This is another major cause of global food crisis which is closely related to poverty. According to Jacques Dioup (2004), one of the great successes of the twentieth century was a rate of growth in food output that considerably surpassed the unprecedented rate of population growth. However, in LDCs, though increase in food produced is almost as high as in developed countries, this increased food production has been absorbed by increases in population. Many countries on the developing world, where food shortages are greatest have greater increases in population than many developed countries where food shortage is not a problem. The relationship between food production and population growth is now evident and the lesson to be learnt is that major achievements in increasing food production can be completely obliterated by population growth. This is not to ignore the position of other researchers who argue that, rather than rapid population growth, the world food problem is really caused by the social and political structures of the nations and in economic relations among them. Suffice it to say, however, that simple statistics indicate that the most populous regions of the world (South East Asia, Latin America and Sub-Saharan Africa) also contain the hungriest and most malnourished. This is clearly an evidence of the possible connection between the current world food crisis and population pressure. In the very recent past, shortage of rice in the international market resulted mainly from increasing local demands in Asia, caused by increase in population. This clearly puts Nigeria in perspective. With a teeming population of over 170 million people by current USAID 2014 estimation.
- *Politics:* Jacques Dioup, got the attention of the world, when he declared sometime in 2004 that the world hunger problem is clearly political and not technical, and that unless action on the political level is taken, there is no guarantee that things will be different in the future.

About 30 years ago, a biologist, Francis Felix showed that all the people in the world could fit into the State of Texas with each person having more than 1,500 square feet of land space and leaving the rest of the world empty. By this, he tried to prove that the world food problem does not arise from any physical limitations on potential output or any danger of unduly stressing the environment. This was corroborated by the former director of Harvard Center for Population Studies, Roger Revelle, who estimated that Africa alone is capable of feeding ten billion people. According to him, the limitation of abundance can be found in the social and political structure of nations and in the economic relations among them.

At a meeting of African leaders in Sirte-Lybia in Feb. 2004, they noted that in spite of the huge human and economic resources available to the continent in comparison to Asia, it has not been able to fully rid itself of hunger and deprivation. The leaders often lack the political will to effect changes that could result in radical changes to hunger and food crisis. In her remark, Jacqueline Kasun, a world renowned researcher in population issues noted that government funded population planners behave irrationally with respect to social and economic restraints. They can command through taxation and intergovernmental grant, resources that would have to come to them voluntarily. They can dispose of resources without meeting the market test that restrains families and business. The result is often lopsided development where the few privileged ones have access to more than enough while the mass of the people remain in hunger and deprivation.

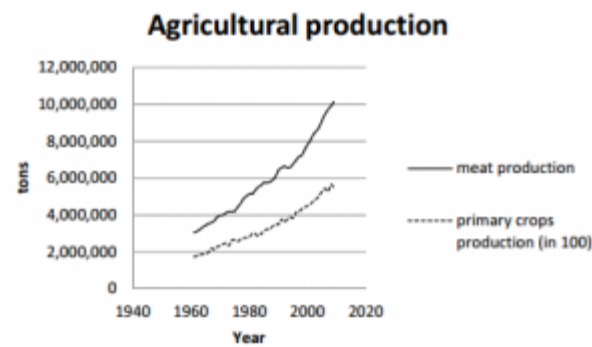
- *Use of Arable Crops for Bio-fuels:* In recent times, crops like cassava, maize, sugarcane e.t.c. have found alternative uses as bio-fuels while oil palm is now being used as a raw material for-bio-diesel. Brazil for example, is no more dependent on crude oil for energy. Rather, ethanol mainly sourced from sugarcane, maize and cassava represents the main source of energy. This development has precipitated a food crisis, especially in LDCs where there is so much reliance on these crops as staples.
- *Inequality:* Like poverty, inequality has been increasing both internationally and in many individual countries. The distribution of the world's income is more unequal than even the most grotesquely unjust of national distribution. In 1976, the industrialized countries made up only 24% of the world's population but ranked in 78% of the income. The developing countries -76% of the population- got only 22% of the income. The average income in the industrialized country was \$6,110/person, eleven times that of the developing countries (\$542). At the bottom of the heap, the poorest 43% of the world's income, giving them an average income of 1/38 of that of the top 24%. The implications of this inequality are shown in the respective availability and consumption of food in developed and LDCs.
- *Climate change:* Climate change has contributed in no small measure to hunger and food insecurity over the years. This phenomenon continuously threatens both food security and rural livelihoods through changing patterns of rainfall, increasing incidence of extreme weather and changing distribution of diseases and their vectors. The European Union Animal Change Project reports that the global animal food chain and associated land use change is estimated to generate 18 % of global greenhouse gas (GHG) emissions. However, there are huge uncertainties and we cannot adequately characterize trade-offs in terms of emission reduction and food production and economic development. **Thus policies that are currently in place to curb GHG emissions may prove insufficient and ill advised.**
- *Wars:* International hostilities are arguably among the most direct causes of global food crisis. UNICEF (2004), acknowledges that countries that suffer from war, natural disasters and extreme poverty are among the most dependant on food aid and that such nations suffering from internal turmoil are in dire need of external humanitarian assistance (mainly in terms of food aid). This is quite easy to understand as the primary concern of those 'in charge' is usually to win the war at all cost. Thus productive activities grind to halt and the immediate result is malnutrition and hunger, especially among women and children, who are usually the most vulnerable.

It is also important to recall that the idea of "world hunger" first came into international at vocabulary, shortly after the Second World War. This was the immediate result of the global economic depression that followed the wars. All around the nations of the world (especially in Sub-Saharan Africa) chronic malnutrition and hunger accompany war. Nigeria is currently going through her own fair share of internal insurgency, with its attendant effect on agricultural productivity in the affected region.

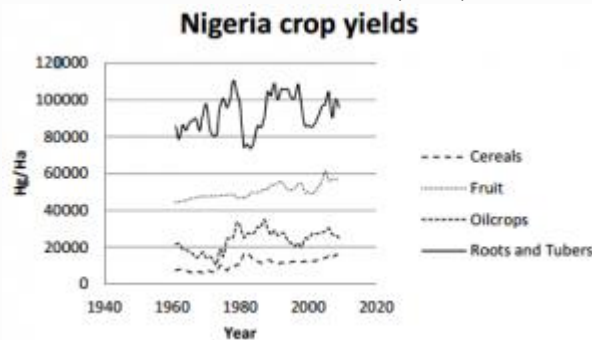
- *Technical Problems:* Most LDCs have not been really able to evolve technically efficient methods of food production and storage that would match the ever increasing population. In some instances, as found in some regions of Nigeria, productivity could be high but the technique of storage and transportation of such abundant products to areas of need is either absent or inadequate. Professor Olabode Lucas, of the Agronomy Department, University of Ibadan, in a recent television program monitored on the Nigerian Television Authority, stated that the yam produced in Lokoja area alone is enough to feed the whole West Africa with pounded yam every day. The problem however, is bad access road for evacuation of such highly needed food.

PROBLEMS OF AGRICULTURE IN AFRICA (NIGERIA INCLUSIVE)

- However the importance of agriculture, majority of those engaged in it most especially in the rural areas are still living in poverty principally because they have not been able to transform their major source of livelihood which is Agriculture (Chauvin *et al.*, 2012).
- In sub-Saharan Africa, the rate of total food production has a very slow rate of growth (less than 1% per year).



Source : FAOSTAT in Chauvin *et al.* (2012)



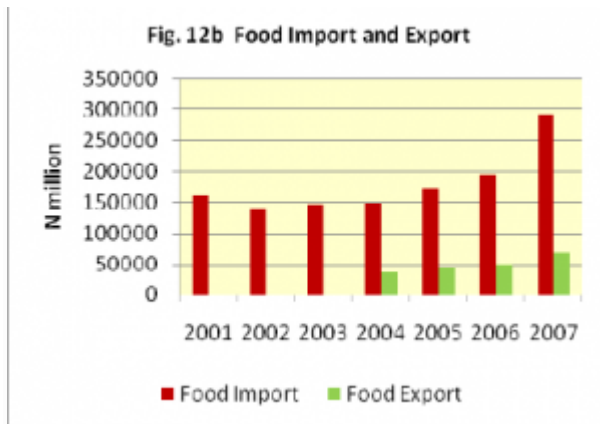
Source : FAOSTAT in Chauvin *et al.* (2012)

- This very slow rate of growth is a serious problem in sub-Saharan Africa (Nigeria inclusive) as growth rate of food production is not statistically different from population growth rate (Chauvin *et al.*, 2012).
- In Africa at large and Nigeria specifically lack of transformation of the agricultural sector has resulted in low productivity thereby resulting in declining rate of increase in food production. (Nwose, 2013).
- This is revealed in the trends in food production between 1994 and 2006 as shown below.
- This declining rate of food production is also evident in cereal production such as maize and sorghum.
- Average growth rates of maize and sorghum are 3.25% and -0.63% respectively between 1983-2008(Tahir, 2014) as seen below

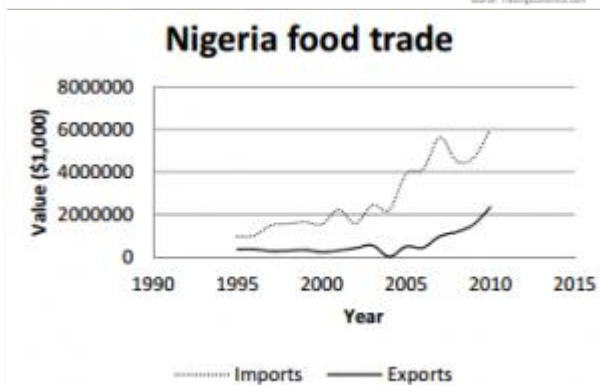
Productivity trend and growth rate of cereal crops (maize and sorghum) in Nigeria (1983-2008)

Year	Yield of maize(kg/ha)	Growth rate (%) of maize	Yield of sorghum(kg/ha)	Growth rate (%) of sorghum
1983	9707		16202	
1984	11190	17.34	10449	-35.51
1985	11735	3.03	10101	-3.33
1986	12679	8.04	10540	4.35
1987	13533	6.74	10631	0.86
1988	16401	21.19	10850	2.06
1989	13950	-14.94	9752	-10.12
1990	11301	-18.99	10000	2.54
1991	11299	-0.02	9691	-3.09
1992	11181	-1.04	10795	11.39
1993	11848	5.97	10796	0.009
1994	12720	7.36	10800	0.04
1995	12666	-0.42	11480	6.30
1996	13261	4.70	11442	-0.33
1997	12510	-5.66	11075	-3.21
1998	13200	5.52	11328	2.28
1999	15908	21.20	11261	-0.59
2000	13001	-18.73	11200	-0.54
2001	13999	7.68	11000	-1.79
2002	14899	6.43	11000	0
2003	14999	0.67	11559	5.06
2004	16002	6.69	12300	5.55
2005	16598	3.72	12600	3.28
2006	18182	9.54	13500	7.14
2007	17049	-6.23	11595	-14.11
2008	19571	14.79	12233	5.50

- Also, it is revealed in the rate of importation of food from other countries to meet demand as revealed below.



Nigerian food import



- Also, it is revealed in the rate of decline in food export from the country to other countries.



- There is also problem of low proportion of the Nigeria's annual budget in agriculture as seen below.

Year	Total budget (N' m)	Allocation to agriculture (N' m)	% allocation to agriculture	FAO percent recommendation	AU percent recommendation
1985	198,901.00	1,018.10	0.50	25.00	10.00
1986	33,345.40	925.40	2.70	25.00	10.00
1987	53,114.30	394.30	0.70	25.00	10.00
1988	71,753.90	850.00	0.90	25.00	10.00
1989	87,254.00	1,052.80	1.00	25.00	10.00
1990	129,184.00	1,996.80	1.50	25.00	10.00
1991	109,008.40	872.30	0.80	25.00	10.00
1992	198,107.10	624.50	0.30	25.00	10.00
1993	294,104.90	2,835.30	0.70	25.00	10.00
1994	371,900.00	3,719.10	1.00	25.00	10.00
1995	515,488.90	6,927.70	1.30	25.00	10.00
1996	594,280.50	5,574.30	0.90	25.00	10.00
1997	794,330.00	7,929.80	0.90	25.00	10.00
1998	1,176,288.30	1,184.40	0.10	25.00	10.00
1999	1,146,911.00	38,259.80	3.40	25.00	10.00
2000	1,190,597.20	10,886.40	0.90	25.00	10.00
2001	2,632,171.70	64,943.90	2.50	25.00	10.00
2002	3,770,106.90	44,803.80	1.20	25.00	10.00
2003	3,056,965.90	16,545.20	0.50	25.00	10.00
2004	1,971,752.90	99,773.40	5.00	25.00	10.00
2005	4,662,483.70	90,798.20	1.90	25.00	10.00

Source: CBN Statistical Bulletin (2007)

Proportion of the Nigeria's annual buget in agriculture

PLAUSABLE SOLUTIONS

To the millions who have to go without two meals a day; the only acceptable form in which God dare appear is food –Mahatma Gandhi (1976). Tessitor *et al.* (1999), advocate both immediate and long term goals to help eradicate the problem of global food crisis and malnutrition.

From a long-term perspective, it is important to understand that neither a lack of technology nor a lack of understanding of ecological processes is standing in the way of sustainable agricultural system today. Although there is plenty to find out, we already know how to design and implement agro-ecosystems that are biologically sustainable, taking into account soil nutrient cycles and other factors. But the mass of famers cannot use this knowledge and survive under the current economic-social-political structure.

Some of the plausible solutions include a blend of both short and long term measures:

- *Redistribution of Food:* Action should be taken at governmental level towards providing proper and safe redistribution of food from the excess supplies of the hinterlands to areas that are worst hit with poverty and malnutrition in the cities at affordable rates.

To make it sustainable, such food may be provided as an incentive for going to school or work to provide training for people. This would boost the economies and help poverty level that lead to malnutrition. The central focus of course, being women and children who are the most affected by the problem.

- *Modernization of Farming:* Nigeria's food production is still largely in the hands of traditional farmers. This must change. One way of doing this is by channelling a substantial part of the money from the very lucrative, but non-renewable oil sector for this modernization. The country recently announced austerity measures as a direct fallout from dwindling oil prices. This signals a warning sign that the time for such diversification is now.
- *Education:* Educational programs may be used to teach farmers and technicians in rural regions the best ways to cultivate and harvest crops and use the shipments of seeds that are given to them. The main goal here is to help the people and government just enough until they learn to provide for themselves.

Education can also be used for families to teach family and economic planning which would help reduce the problem of poverty and allow for families to have enough money to feed their families.

- *Food trade:* This involves the practice of exchanging food for work with countries or countries' natural resources for food. It has proven to be plausible as seen in the food for oil program with Iraq. Either way, it helps increase the individual's or government's welfare while allowing them to provide food for their family or country.
- *Technical Solution:* The use of non-arable crops for bio-fuel production should be emphasised in place of staples like cassava. This would reduce the competing demand for such crops by both humans and machines. If properly managed through the use of modern bio-technology techniques, it would go a long way in solving the food problem.
- The UN and other organizations have already set up many programs and conventions such as Freedom From Hunger Complain (FFHC), World Food Congress (WFC), World Food Security (WFS) among others.

These efforts must be utilized and expanded, as seen in the recent emergence of the Special Program for Food Security (SPFS), while the world is constantly changing and evolving.

- There is one neat and simple solution which is a change to a consumer society which does not generate the problems of mindless commitment to growth and greed society.

According to Harrison (1981) one of the saddest aspects of world hunger is the massive protein consumption of household pets in the West. Britain's six million dogs and five million cats consume around one and a half million tons of food a year and the equivalent in grains could be enough to feed the entire population of Egypt.

Agriculture in the South is still largely rain-fed, despite the obvious advantages of irrigation. If the current effort at transforming the sector is to be successful, agriculture must be taken seriously.

- *Change in the Distribution of Food:* Harrison (1981) opined that unless the distribution of food is changed, hunger will go on spreading at the same time as food production. The world food market matches supply with effective demand. Whatever those with the money to pay want, even if it is wasteful beef steaks and dog food, they get. What the poor want, they don't get.

Britain for example, has an estimated six million dogs and five million cats; while the United States has forty million dogs and twenty three million cats. One of these coddled pets probably consume the produce of more land than the average third world person and much of the protein wasted on the livestock eaten by rich westerners (and their pets) come from the poor countries. Oil seeds and peanuts from West Africa, fish meal from Peru, soy beans from Brazil and so on. The world food market will not match food supply with real human needs until world incomes are more equally distributed.

- *Population Control:* Although Mellor (1970) agrees that family planning and population control is a value judgment on which positive economics as a science maintains a neutral position, he however debunks the general assumption that increased population automatically brings about increase in demand for food. He concludes that, population growth does not necessarily provide large increases in the effective demand for food, but may well cause a decline in the level of nutrition, which is most unfortunate in its effect on health and general welfare. Therefore, controlling the population growth rate at least, for a country like Nigeria that has been projected by USAID to be the third most populous nation in 2050, after China and India, could improve the level of nutrition.
- The European Union Animal Change Project is planning an Animal Change that aims to improve the estimates of these GHG emissions and provide opportunities in livestock systems to reduce emissions not only in Europe, but also Africa and Latin America. Nigeria should catch in on this.

FOOD SECURITY INDICATORS

Type of indicator
DETERMINANTS OF (INPUTS TO) FOOD INSECURITY
Availability
Average dietary supply adequacy
Food production index
Share of energy supply derived from cereals, roots and tubers
Average protein supply
Average supply of protein of animal origin
Physical access (conditions for physical access to food)
Percentage of paved roads over total roads
Rail lines density
Road density
Economic access (affordability)
Food price level index
Utilization
Access to improved water sources
Access to improved sanitation facilities

Source: FAO, 2012

OUTCOMES
Inadequate access to food
Prevalence of undernourishment
Share of food expenditure of the poor
Depth of the food deficit
Prevalence of food inadequacy
Utilization (food-related anthropometric failures)
Percentage of children under 5 years of age who are stunted
Percentage of children under 5 years of age who are wasted
Percentage of children under 5 years of age who are underweight
Percentage of adults who are underweight
VULNERABILITY/STABILITY
Domestic food price volatility
Per capita food production variability
Per capita food supply variability
Political stability and absence of violence/terrorism
Value of food imports over total merchandise exports
Percentage of arable land equipped for irrigation
Cereal import dependency ratio

CONCLUSION

It has already been suggested in this presentation that the concept of food security can be taken as given in a country like ours that is so blessed with agricultural resources. However, a combination of mainly political and social forces are responsible for our current proven state of food insecurity.

As plausible as the solutions proffered may appear on paper, it would however require the collective will of all concerned (both the rich and poor) to make this work. One thing we can be assured of: future generations will only look at us askance if we allow ourselves to give in at any point to any system that threatens to compromise the destiny of our unborn generation.