

FOOD SECURITY AS A MEANS FOR NATIONAL SECURITY OF NIGERIA: LESSONS FROM BANGLADESH

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INTRODUCTION

Security is a universal requirement that nations strive to attain. In the modern state system, national security incorporates the preservation of citizens from existential and pervasive threats to their well-being and core values. This includes provision of food which is one of the basic necessities of life.¹ An adequate food intake is not only vital for sustenance of life, but also for healthy and productive capacity of the human element.² As a factor endowment, the human element is central to the well-being of any nation especially in support of socio-economic development and political stability. Thus, the concern for the well-being of the human element and the fact that a states' *raison d'être* is premised on the ability to guarantee its security,³ makes attainment of food security an indispensable requirement for nations.

Attainment of food security in Nigeria is no less important than the security of the country.⁴ Nigeria is endowed with a total of 91.1 million hectares (Mha) of land mass with 83.6Mha of it arable.⁵ There is about 267.7 billion cubic meters (bn m³) of surface water and about 57.9bnm³ of underground water as well as an extensive coastal area of about 84,000 square nautical miles (nm²) that is very rich in fish and other marine resources.⁶ These endowments including a population of about 166M signify great potentials that could engender self-sufficiency in food production towards food security to guarantee national security of Nigeria.

In spite of efforts of successive administrations since independence in 1960 towards self-sufficiency in food production, Nigeria is unable to exploit its agricultural potentials to meet its food security needs and therefore, continues

1. Ralph Bunche Institute for International Studies, 'The UN and Human Development', *Brief Note Number 8*, July 2009, accessed 24 February 2013, <http://www.unhistory.org/briefing/8HumDev.pdf>.
2. JK Olayemi, 'Food Security in Nigeria', *Journal of Development Policy*, Development Policy Centre Research Report No. 2, Ibadan, Nigeria, September 1998, Pp. 1-86.
3. Wesley A Fryer, 'Prospects for Collective Security in the Western Hemisphere', 31 August 1993, accessed 24 February 2013, <http://www.wesfryer.com/collectivesecurity.html>.
4. The Constitution of the Federal Republic of Nigeria stipulates that "the security and welfare of the people shall be the primary purpose of government". See Chapter 11 Section (14) 2 b of the CFRN.
5. Federal Ministry of Agriculture & Rural Development of Nigeria, *National Fadama Infrastructure Survey Report*, 2001, Sheda-Abuja: World Bank/Projects Coordinating Unit.
6. Federal Ministry of Agriculture and Water Resources of Nigeria, *National Food Security Programme*, May 2008, p. 7, accessed 12 April 2013, http://www.inter-reseaux.org/IMG/pdf_Food_security_Document-Nigeria.pdf.

to import food to supplement the shortfall. Nigeria is one of the largest food importers in the world with about US\$8.2 bn spent on importing food items like wheat, rice, fish and sugar in 2010 alone.⁷ This trend is not sustainable fiscally, economically and politically. Yet, malnutrition is widespread in the country and Nigerians are vulnerable to food shortages. Presently, about 68 per cent of the population is living below the poverty line of US\$1.25 and unable to meet most basic needs.⁸ The number of food insecure people is estimate at 17 per cent of a population of about 166M and 41 per cent of children are chronically undernourished.⁹ Given that Nigeria's population is estimated grow at about 2.6 per cent annually,¹⁰ the food security situation is bound to worsen. Thus, the need to identify the challenges affecting self-sufficiency in food production in Nigeria and proffer solutions towards food security to enhance national security is critical.

CONCEPTUAL CLARIFICATION

Concept of Food Security

The concept of food security entered into the international development literature in the 1970s at a time of global food crisis and has evolved as a multi-faceted concept, variously defined and interpreted.¹¹ In 1996, the Food and Agricultural Organization (FAO) defined "Food Security [as] a situation that exists when all people, at all times, have physical, social, and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life".¹² Unlike the others, this definition

7. Akinwumi Adesina, 'Transforming Agriculture to Grow Nigeria's Economy', A Lecture Delivered by Honourable Minister of Agriculture at the Obafemi Awolowo University, Ile-Ife, 13 December 2012. The amount spent is about US\$8.7 bn.

8. World Bank, *World Development Indicators 2012*, 15 October 2012, accessed 11 April, 2013, <http://hdrstats.undp.org/en/indicators/38906.html>.

9. US Department of Agriculture, *International Food Security Assessment 2012-22*, A Report from the Economic Research Service, July 2012, accessed 10 March 2013, <http://www.ers.usda.gov/media/849266/gfa23.pdf>.

10. World Bank, *Population Growth (Annual %)*, World Development Indicators 2013, accessed 19 June 2013, <http://data.worldbank.org/indicator/SP.POP.GROW>.

11. UN, 'United Nations Conference on Food and Agriculture: Text of the Final Act', *American Journal of International Law* 37, (4, Suppl.), 1943, pp. 159-192. The concept of food security, although not defined as such, has been in existence since the UN Conference on Food and Agriculture 1943 in which the concept of a 'secure, adequate and suitable supply of food for everyone' was accepted internationally. In the 1974 World Food Summit, food security was defined from the dimension of availability of basic foodstuffs and by 1983 the concept was expanded to ensuring both physical and economic access to basic food need. In the 1990s, food security included food safety and nutritional balance for an active and healthy life. See UN, *Report of the World Food Conference*, Rome 5-16 November 1974, New York, 1975; FAO, *World Food Security: A Reappraisal of the Concepts and Approaches*, Director General's Report, Rome, 1983.

12. FAO, *The State of Food Security in the World 2001*, Rome, 2002.

captures all the dimensions of food security namely: availability, accessibility, utilization and stability of food supply. The availability dimension is the amount of food that actually exists through domestic production, import and other sources while people's physical, economic and social access to food is the capacity to produce, buy, and or acquire food. Utilization is people's ability to absorb sufficient nutrients/energy in food consumed for healthy living, which is determined by eating habits, hygiene and health care. On the other hand, food stability refers to the sustainable availability and access to nutritious food at all times.¹³

Concept of National Security

The term national security has no universally accepted definition.¹⁴ In its generic sense, security is defined as a feeling of being safe from harm or danger¹⁵ and therefore connotes survival. The view by Buzan captures the broad concept which regards national security as the ability of a nation to maintain its sovereignty, protect its political, socio-economic, environmental, and other interests upon which the survival of a country depends.¹⁶ This brings to fore the importance of the different dimensions of national security that could be related to the food security situation in Nigeria.

AN OVERVIEW OF FOOD SECURITY AND NATIONAL SECURITY SITUATIONS IN NIGERIA

Strategic Relevance of Food Security to National Security of Nigeria

The strategic relevance of food security to national security of Nigeria stems from the nation's dependence on the agricultural sector characterized by crop production, livestock, fishery and aquaculture for sustenance of the economy, employment and poverty reduction as well as food being the most basic of human needs for healthy living. These would be analyzed further in subsequent paragraph to assess its impact national security of Nigeria.

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13. Rainer Gross, et al., *The Four Dimensions of Food and Nutrition Security: Definitions and Concepts*, April 2000, accessed 17 April 2013, http://www.foodsec.org/DL/course/shortcourseFA/en/pdf/P-01_RG_Concept.pdf.
 14. Caroline Thomas, 'Third World Security' in Rogers Carey et al (eds.), *International Security in the Modern World*, Martins Press, New York, 1992, p. 93.
 15. Terry Terrif et al, *Security Studies Today*, Blackwell Publishing, Malden Massachusetts, 1999, p. 1.
 16. Barry Buzan, *People, State and Fear: An Agenda for International Security Studies in the Post-Cold War Era*, 2nd ed., Harvester Wheatsheaf Hertfordshire, UK, 1991, Pp. 118-134.

Food Security Situation in Nigeria

Food Availability. The major sources of food in Nigeria are through domestic production and imports. The agricultural sector was very robust in 1960-1970¹⁷ but with rising dominance of the oil sector from 1970 onwards, food production declined until 1990.¹⁸ It progressively increased from an average of 90.8M metric tonnes (MT) between 2000 and 2005, and fluctuated several times between 2006 and 2011 with an average of 105.8MMT. However, food imports increased from 3.4MMT in 2000 to 9.7MMT in 2007 and declined to 4.5MMT in 2009,¹⁹ which indicate that domestic food production was insufficient to meet demand.

Food Access. Relative economic accessibility, represented by trends of poverty in Nigeria increased between 1980 and 2012. For instance, the absolute number living below poverty line of US\$1.25 increased from 67.1M in 1996 to 112.47M in 2010, an increase of 45.37M poor from a population increase of 60.7M²⁰ and was 112.88M of a population of 166M in 2012. With total food expenditure share of household consuming between 54.38 and 58.37 per cent of income,²¹ economic inaccessibility to food becomes aggravated by any increase in prices.²² These have severe consequences on the poor and unemployed who become more prone to hunger, destitution, and crime.

Food Utilization. Food energy intake in Nigeria is above the FAO average minimum daily dietary energy requirement of 1,800 kilocalories/person/day (kcal/per/day) but undernourishment and malnutrition is still high. Whereas the dietary energy supply increased from 2,600 to 2700 kcal/per/day between 2000-2002 and 2010-2012, the number of undernourished persons increased from an average of 13M to 14M within the same period.²³

17. FAOSTAT, 'Food Balance Sheets', updated 29 June 2012, accessed 22 April 2013, <http://faostat.fao.org/site/368/default.aspx#ancor>.

18. USAID, 'Nigeria Food Security Outlook April to September 2013', *Famine Early Warning Systems Network*, 2013, accessed 22 May 2013, http://www.fews.net/docs/Publications/Nigeria_FSO_2013_04_en.pdf.

19. FAOSTAT, op. cit.

20. National Bureau of Statistics, Harmonized Nigerian Living Standard Survey (HNLSS), 2010.

21. *Nigeria Poverty Profile 2010*, accessed 11 May 2013, <http://www.tucrivers.org/tucpublications/Nigeria%20Poverty%20Profile%202010.pdf>. Statistics was based on expenditure share of household for 2003/4 and 2009/10.

22. FGN approved minimum wage is =N=18,000 (about US\$3.5 per day), yet this amount is not implemented by all the 36 State Governments in Nigeria including the private sector.

23. FAO, 'Prevalence of Undernourishment in Total Population (%)', 2012', *Hunger Report 2012*, accessed 26 April 2013, http://www.fao.org/hunger/en/#jfmulticontent_c130584-2. This figures reflect a decrease from 10.1 per cent to 8.5 per cent undernourished persons from an average population increase of 127M between 2000-2001 and 163M between 2010-2012.

Food Stability. Sustainable access and utilization of food in Nigeria is impacted by factors such as environment (drought and floods), economic shocks and socio-political (maritime piracy and conflicts). All these constitute the dimensions of food security situation in Nigeria. The desire for proactive actions to improve the food security situation in Nigeria gave rise to various initiatives of government.

Government Initiatives towards Food Security. Since independence in 1960, successive administrations in Nigeria introduced various policies, programmes and institutions to achieve food security and poverty alleviation. The Federal Government of Nigeria (FGN) introduced a series of National Development Plans from the first (1962-1968), the second (1970-1974), the third (1975-80) and the fourth (1981-1985).²⁴ A new National Agriculture Policy was introduced in 2001²⁵ supported by many other initiatives including the National Special Programme on Food Security in 2002 to extend the application of improved low cost technologies and management practices to farmers with a view to improving productivity on sustainable basis. The Federal Ministry of Agriculture and Water Resources (FMAWR) was established as the primary ministry on food security in Nigeria with other agencies, international development partners and Non Governmental Organizations (NGOs) directly or indirectly involved. Implementation of the various programmes is supported by annual budgetary allocations and incentives by way of subsidies and loans. Despite these initiatives food security remains a fundamental challenge in Nigeria with impact on national security.

Impact of Food Security on National Security of Nigeria

The food security situation in Nigeria has both favourable and unfavourable impacts on national security. It impacts favourably by its contribution to livelihood for many Nigerians; providing the main source of food and nutrition for healthy living, and poverty reduction through employment generation of over

24. Between 1965 and 1970, the share of agriculture to total GDP dropped from 54.8 to 38.6 per cent between 1971 and 1975 to 22.1 per cent between 1976 and 1980. The 1971-1981 periods saw a pronounced decline in GDP, in part because of the rising dominance of the oil sector, and decline in domestic food production, but also because of uncertainty in policy direction brought about by increased government intervention in the sector. However, the fourth period yielded positive results from 21.1 per cent in 1981 to 35.4 per cent in 1985. By 1986, the Structural Adjustment Programme (SAP) was introduced as a 'reform therapy' to reduce Nigeria's dependence on the oil sector and on imports through a diversification programme to stimulate rapid improvement in domestic food production. SAP led to increase of an average of 39.9 per cent share of agriculture in total GDP between 1986 and 1990. Agriculture share of total GDP fluctuated from 34.2 per cent between 1991 and 2000 and 40.3 per cent between 2001 and 2009. See National Bureau of Statistics, 2011 and Central Bank of Nigeria *Statistical Bulletin and Annual Reports Various Issues*, 2000.

25. Federal Ministry of Agriculture & Rural Development of Nigeria, 2003. The previous NAP was in 1998.

70 per cent of Nigerians. Its contribution as a source of foreign exchange and to Gross Domestic Product (GDP) with stabilization effect on the economy during oil shocks is also instructive.

On the other hand, Nigeria's food import bill of about US\$628bn from 2007 to 2010 alone²⁶ is fiscally unsustainable. This fuels inflation, displaces local production, and creates unemployment and poverty as well as limits fiscal space against a heavy burden of national obligations that government should attend.²⁷ Also, malnutrition is responsible for more than 60 per cent maternal and infant mortality in Nigeria.²⁸ Further to the above, social vices such as begging, child labour and armed robbery have been common in Nigeria where there is food insecurity.²⁹ Therefore, food security assumes a critical role in maintaining national security of Nigeria.

CHALLENGES MILITATING AGAINST FOOD SECURITY IN NIGERIA

Inadequate Allocations and Poor Implementation of Budgets for Agricultural Sector

Inadequate and poor implementation of annual budgets for the agricultural sector by government has been responsible for failure of many projects and programmes in the sector and a major factor for the current state of food insecurity in Nigeria. For instance, agriculture share of annual national budgets has been unstable and very low, decreasing from 7.0 per cent in 2007 to 1.7 per cent in 2013 as shown in **Table 1**. This falls far short of the 10 per cent allocation of annual national budget for agriculture to achieve 6 per cent growth as agreed by African Union (AU) leaders in 2003 in Maputo.³⁰

26. 'Nigeria: Our Food Import Bill', *Daily Champion*, 31 August 2011, accessed 22 June 2013, <http://allafrica.com/stories/201108310782.html>.

27. Highest inflation rate of 72.8 recorded in 1995 occurred same year highest quantum leap in food import bill of US\$10.99bn was recorded. Dollar conversion is in constant 1990 factor. See CBN, Annual Report and Statement of Account, 2000.

28. Yemi Bamidele, 'Nigeria: Malnutrition, Causes of Deaths – Experts', *Daily Trust*, 30 March 2010, accessed 31 July 2013, <http://allafrica.com/stories/201003300259.html>. Professor Ignatius Onimawo, President, Nutrition Society of Nigeria.

29. Andohol Jerome, 'Nigeria's Food Security Programs: Implications for MDG's Goal of Extreme Hunger Eradication', *International Journal of Business and Social Sciences* Vol. 3, No. 9, May 2012.

30. African Union, *10 percent National Budget Allocation to agriculture Development*, 2005, accessed 13 July 2013, www.africa-union.org/root/ua/Conferences/2008/avril/REA/01avr/Pamphlet_rev6.pdf. Nigeria has exceeded the 6 per cent growth rate, but it is a growth without change in food security situation of the country. The 10 per cent is for the reduction of food insecurity and poverty in Africa and as part of commitment to the MDG 1 of halving poverty and hunger by 2015. The FAO recommended 25 per cent.

Table 1. Agriculture Share of National Budget (2007- 2013) in ₦=’ Billion							
Source	2007	2008	2009	2010	2011	2012	2013
Total National Budget (TNB)	2,348.60	2,748.00	3,101.81	4,206.55	4,484.74	4,749.10	4,987.60
Total Budget for Agric	164.30	134.85	166.92	55.33	65.87	78.98	81.60
Agric Budget as % of TNB	7.00	4.91	5.38	1.32	1.47	1.66	1.70
Total National Capital Budget (TNCB)	683.21	727.93	1,022.26	1,374.62	1,146.75	1,319.78	1,622.50
Capital Budget for Agric	136.30	110.00	138.93	31.86	31.40	45.01	48.70
Agric Capital Budget as % of TNCB	17.95	15.11	13.60	2.32	2.74	3.41	3.00
Source: Computed from CBN Annual Report and Statement of Accounts, 2008-2013							

From the amount approved for agriculture capital budgets between 2010 and 2012 as shown in **Table 2**, only 66.91 per cent and 59.85 per cent of the amount released were cash-backed in 2010 and 2012 respectively compared to 99.66 per cent in 2011. Furthermore, not all the cash-backed funds were utilized in 2010 and 2012 due to late start of the Fiscal Years (FYs).³¹ As a result, utilized budget could not provide needed facilities and inputs to improve food production. Therefore, inadequate allocations and poor implementation of budgets for agriculture affects the quality of execution of programmes towards food security. This is inimical to national security of Nigeria.

Table 2. Capital Allocation, Releases and Utilization of Agriculture Share of National Budget (2010-2013) in ₦=’ Billion

Year	Agric Capital Budget	Level of Utilization (%)				
		Amount Released	Amount Cash-Backed	Utilization of Cash-Backed Funds	Percentage Cash-Backed Amount (%)	Percentage of Total Releases (%)
2010	31.86	26.73	26.73	17.89	66.92	66.91
2011	31.4	21.50	21.50	21.43	99.66	99.66
2012	44.66	13.90	13.36	8.25	61.75	59.34
2013	48.73	NA	NA	NA	NA	NA
Source: Computed from CBN Annual Report and Statement of Accounts, 2010-2013						

Weak Agricultural Research-Extension-Farmer Linkage System

Nigeria’s agricultural research-extension-farmer linkage system is weak and this constitutes a limiting factor for development of new skills and knowledge by farmers to adopt improved technologies and facilitate linkages with other institutional support services such as input supply, credit and produce marketing that would improve efficiency in agricultural productivity towards food security. The Agricultural Extension Service (AES) system is underfunded and largely donor dependent, which is unsustainable anytime there is paucity of funds. It is centralized and top-down public-driven system under the FMAWR and the Agricultural Development Programme (ADP) under the state governments, which

31. Matilda Douillet and Fanny Grandval, ‘Nigeria’s Agricultural Policy: Seeking Coherence Within Strategic Framework’, *Special Report, Grain De Sel*, No. 51, July-September 2010, accessed 14 May 2013, http://www.inter-reseaux.org/IMG/pdf/p16-18_Agric_Policy.pdf.

hardly meet farmers' needs.³² Also, the AES is acutely understaffed with one extension worker to 20,000 farmers compared to World Bank (WB) recommended ratio of one extension worker to 1,000 farmers.³³ The impact of this weak linkage is noticeable in the low adoption rate of research results as indicated in **Figure 1**. From 1980-1981, rice output increased from an average of 1.15MMT to 3.8MMT in 2004-2005 (current data was unavailable) with corresponding expansion in land under cultivation from 0.6bn ha to 2.5bn ha rather than an improvement in productivity per cultivated area.³⁴ As shown in **Figure 2**, average yield of rice decline from 1.9T/ha to 1.5T/ha within same period.

Figure 1. Rice Production in Relation to Land Area Cultivated

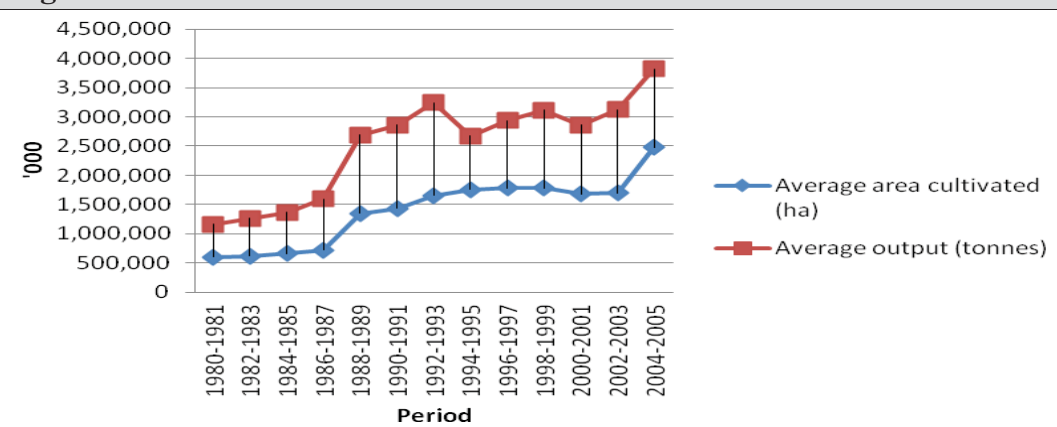
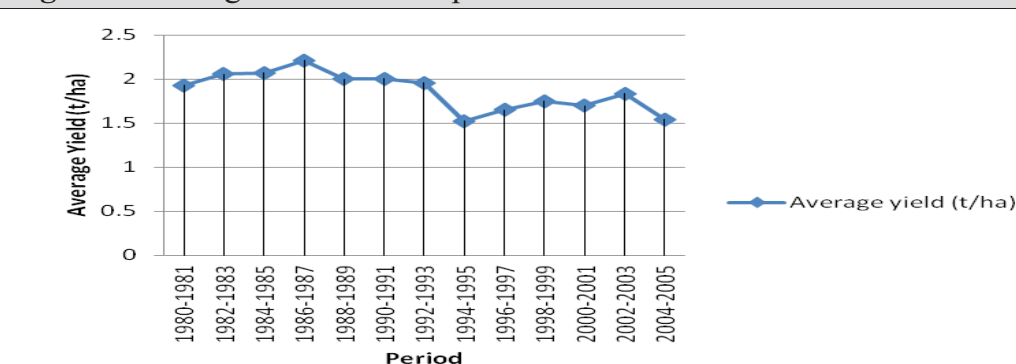


Figure 2. Average Yield of Rice per Hectare of Land Area Cultivated



Source: FMARD, 2002; FAO, 2003 and CBN, 2005.

32. OJ Saliu and AI Age, 'Privatization of Agricultural Extension Service in Nigeria - Proposed Guidelines for Implementation', *Journal for Sustainable Development in Africa*, Vol. 11, No. 2, 2009, pp. 160-176.
33. CO Edeoghon and BO Idele, 'Extension Agents' Perception of Factors Affecting Dissemination of Improved Farm Technologies in ADP South Zone of Edo State, Nigeria', *Nigerian Journal of Agriculture, Food and Environment*, Vol. 8 No. 3, September 2012, Pp. 62-66.
34. The efficient use of fertilizer, farming technique and favourable weather condition also contribute to the higher agricultural productivity.

Inadequate and Poor State of Infrastructural Facilities

Infrastructural facilities in Nigeria like railways, roads and electricity supply are grossly inadequate and in disrepair. These have been a major disincentive to agribusiness and a drawback against food security. The railroad system is barely operational despite a number of rehabilitation attempts; so movement of food items is done mostly by road. Unfortunately, Nigeria currently has about 65,000 kilometers (km) of paved road out of 200,000 km of total road network.³⁵ The remaining is barely usable throughout the year with 80 per cent of it being feeder roads to the rural areas where about 90 per cent of food in the country is produced.³⁶ Hence, it is difficult to evacuate produce from the farms to the markets, which increases post harvest losses through spoilage and makes transportation cost to increase cost of food. Similarly, with a shortfall of 6,180 megawatts (MW) of electricity supply,³⁷ most agro-allied industries in the country continue to rely on self-powered generators as alternative source of electricity supply with attendant increase in cost on investments.³⁸ All these cause instability in food supply and reduced households' access.

Climate Change versus Poor Irrigation Schemes

Nigeria's agriculture is mainly rainfed which makes food production unsustainable all year round and more vulnerable to vagaries of climatic conditions. Notwithstanding, the Nigerian government has not taken full advantage of its irrigation potential estimated at 3.14Mha as the area under irrigation is about 220,000ha (about 14.3 per cent).³⁹ Meanwhile, private sector involvement in irrigation development is limited. The River Basin Development Authorities (RBDAs) and state water agencies concentrated on large scale single

35. Olufemi Adeosun, 'Nigeria Still Needs 100,000 kms Road Network', *National Mirror*, 3 June 2013, accessed 27 June 2013, <http://nationalmirroronline.net/new/nigeria-still-needs-100000kms-road-network-onolememen/>. According to Nigeria's Honourable Minister of Works, about 300,000 km of total road network would be required to grow the economy.

36. Ibid.

37. Jide Osuntokun 'State of Electricity Supply in Nigeria', *The Nation Newspaper*, 16 May 2013, accessed 25 May 2013, <http://thenationonline.net/new/columnists/state-of-electricity-supply-in-nigeria/>. Nigeria has about 4,500 megawatts of electricity supply.

38. The Managing Director of Honeywell Flour Mills Plc stated that the company is yet to connect to public power supply since inception of operations due to sustainability concerns. For more details see Roseline Okere and Melody Fidelis, 'Nigerian Manufacturing Sector: Not Much to Cheer at 52', *The Guardian*, 3 October 2012, accessed 16 July 2013, http://www.ngrguardiannews.com/index.php?option=com_content&id=100407:nigerian-manufacturing-sector-not-much-to-cheer-at-52&Itemid=419.

39. Emmanuel O Ojo and Peter F Adebayo, 'Food Security in Nigeria: An Overview', *European Journal of Sustainable Development*, Vol. 1, No. 2, 2012, pp. 199-222.

purpose irrigation schemes which lacked spread.⁴⁰ Worse still, there is physical deterioration and inefficiency of the irrigation schemes due to underfunding and poor management.⁴¹ Consequently, water supply to the farms is unreliable, which leaves many farmers dissatisfied and unwilling to participate in the scheme due to low yield, loss of investment and low income. This trend hinders off-season food production and therefore, hampers attainment of food security.

Poverty and Unemployment

Poverty and unemployment are severe in Nigeria especially in the rural areas where about 50.2 per cent of the population lives.⁴² The fact that 68 per cent (about 112.88M) of the active population lives below poverty line of US\$1.25 per day with 23.9 per cent (39.7M) unemployed (56.3 per cent within 15 – 64 years and 4.2 per cent are 65 years of age)⁴³ with the projection that about 1.8M youths would join the unemployment market annually, underscores the dire situation. Whilst efforts are ongoing to create about 3.5M jobs in the agricultural sector by 2015,⁴⁴ the FGN has no programme for many Nigerians (except for contributions to orphanages) that are incapable of taking job in the sector including those with physical disability, age limitation (children and aged) and women.⁴⁵ Therefore, unless there is intervention, these vulnerable groups would be at risk of hunger and under-or-malnutrition.

Prospects for Self-Sufficiency in Food Production towards Food Security

Despite the challenges of food security, Nigeria is endowed with abundance of arable land, huge irrigation potentials and favourable climate for production of crops, livestock and aquaculture including a vast sea area that is rich in marine resources and human resources that are largely unexploited. These could be harnessed for increased agricultural production and therefore, constitute prospect for food security in Nigeria.

40. River Basin Development Authorities Act, CAP 396, Laws of the Federation of Nigeria, 1990. The FGN developed large scale multipurpose dams and in 1976 established 11 RBDAs across the country to harness and maintain the potentials of water bodies for irrigation services, fisheries development and flood control. 'Fadama Irrigation' projects with simple low-cost shallow tube well (STW) technologies and small engine-driven water pumps were also introduced across the country for irrigation farming. These were in addition to irrigation facilities managed by state governments.

41. Said Abba-Ruma, 'N40 Billion Appropriated to RBDAs', *Vanguard*, 3 April 2013, accessed 17 July 2013, <http://www.vanguardngr.com/2013/04/n40-billion-appropriated-to-rbdas/>. The former Minister MoA at a public hearing on three water related bills at the NASS in 2009.

42. WB Indicators, 2012. Rural population estimate is as of 2010.

43. National Bureau of Statistics, op. cit.

44. President Goodluck Jonathan, at a meeting with members of Eminent Persons Group (EPG) in Geneva, Switzerland on Transformation of Nigeria's Agricultural Sector, 22 January 2013.

45. These groups constitute the vulnerable population without adequate purchasing power to secure access to food, even when food is available in the local markets.

RELEVANT LESSONS ON FOOD SECURITY EXPERIENCES FROM BANGLADESH AND STRATEGIES FOR NIGERIA

Lessons on Food Security Experiences of Bangladesh

In the early 1970s, Bangladesh was a severely food deficit country, with a population of about 75M and heavily dependent upon food aid.⁴⁶ Over the years, the country has made commendable progress in domestic food production, reduction of poverty and provision of employment for its population. Today, Bangladesh is self-sufficient in rice production to feed a population of about 164M and has made progress in many other areas of food security.⁴⁷ This feat has been achieved through many initiatives some of which are relevant lessons for Nigeria as discussed below.

Decentralized and Integrated National Agricultural Extension Service System. The Department of Agriculture Extension (DAE) in Bangladesh operates a decentralized and integrated system with its responsibilities for planning, budgeting, implementation, monitoring and evaluation of extension programmes transferred to trained staff at the division, district, sub-districts (*upazila*) and *union* levels.⁴⁸ The system is supported by a multitude of other Extension Service Providers (ESPs) such as the private sector, NGOs, and mass media including farmers, as partners under the National Agricultural Extension System (NAES). Accordingly, the decentralized, integrated, and participatory arrangement ensures a wider reach to farmers and prompt responses to feedback through synergy of efforts leveraged from the combined strengths of the ESPs.

Liberalization of Irrigation Management System. Over the years, the Government of Bangladesh (GoB) encouraged farmers to increase intensity of cropping and aquaculture towards food security through development of water resources.⁴⁹ The government delineated public and private responsibilities, and decentralized state activities where appropriate, to become participatory. Under this arrangement community resources are managed by the community

46. Mahabub Hossain, Firdousi Naher and Quazi Shahabuddin, 'Food Security and Nutrition in Bangladesh: Progress and Determinants', *electronic Journal of Agriculture and Development Economics*, Vol. 2, No. 2, 2005, Pp. 103-132, accessed 18 May 2013, <ftp://ftp.fao.org/docrep/fao/008/af136e/af136e00.pdf>.

47. International Food Policy Research Institute, *Reducing Poverty and Hunger through Food Policy Research*, Highlights of IFPRI's Research and Partnership in Bangladesh, 2012, accessed 16 April 2013, http://www.ifpri.org/sites/default/files/publications/brochure_bangladesh.pdf.

48. Ministry of Agriculture, *New Agricultural Extension Policy (NAEP)*, Government of People's Republic of Bangladesh, 1996, Pp. 3-7.

49. Ministry of Water Resources, *National Water Policy*, Government of the People's Republic of Bangladesh, 30 January 1999, Dhaka

concerned along with local government institutions (*parishads*).⁵⁰ Public water schemes are also managed by the private sector through leasing, concession, or management contract or jointly managed by the project implementing agencies with the *parishads* and community organizations.⁵¹ Emphasis is placed on surface water and minor irrigation through low cost low lift pumps (LLPs), shallow and deep tube wells (STWs and DTWs), and manually operated pumps (MOPs).⁵² However, adverse effects on growth of food crops, flora and fauna have emerged owing to the overexploitation of groundwater, such as lowering of water tables by 4 to 5 feet annually and ground water pollution.⁵³ This requires careful consideration on beneficial uses of irrigation water.

Social Safety Net Programmes. Since mid-1970s GoB attached high priority to Social Safety Net Programmes (SSNPs) to enhance income, employment generation, and transfer food to the poor and unemployed groups. Currently, Bangladesh has more than 58 SSNPs which are cash or food aid or both and some of them are conditional requiring performance of work. GoB devotes substantial funding to the programmes, for instance, up to US\$2.3bn in 2009-2010 (about 2.8 per cent of the GDP)⁵⁴ aside from private sector support. Consequently, there have been impressive reductions in poverty, hunger and unemployment rates. As shown in the performance on Millennium Development Goal (MDG) Goal 1 at **Table 3**, the percentage of people below poverty line reduced from 56.6 per cent in 1992 to 31.5 per cent in 2010. All these experiences of Bangladesh provide useful lessons for developing adoptive strategies for food security initiatives in Nigeria for enhanced national security.

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50. Nishat, op. cit. Minor irrigation and small-scale surface irrigation schemes are under the jurisdiction of the MoA and the Ministry of Local Government, Rural Development and Cooperatives (LG&RD), respectively. Large-scale irrigation schemes, including flood control and drainage (FCD) projects, are under the Ministry of Water Resources (MoWR).
 51. In 1991, the National Minor Irrigation development Project (NMIDP) was established in response to the needs of farmers and the requirement for increased private sector investment in minor irrigation technologies.
 52. FAO, *Water Profile of Bangladesh*, 30 March 2007, accessed 6 June 2013, <http://www.eoearth.org/view/article/156926/>. Bangladesh is known for periods of flooding and not so much for drought. However, a lack of water during the dry season (November-May) and spells of drought at the beginning and end of the rainy season (June-October) are a threat to agricultural production.
 53. M Mizanur Rahaman, 'Food Security in the Real of Climate Change', *The Daily Star*, 17 November 2012, accessed 30 July 2013, <http://archive.thedailystar.net/newDesign/news-details.php?nid=257752>.
 54. Bangladesh Economic Review, 2008 and GoB, Finance Division, Ministry of Finance Annual Budget of various years. It was US\$366M in 1995-1996 (about 7 per cent of annual budget and 0.9 per cent of GDP)

Table 3. Progress of Millennium Development Goal 1 on Eradication of Extreme Poverty and Hunger in Bangladesh

Goals, Targets and Indicators (revised)	Base year 1990/1991	Current Status (Source)	Target by 2015	Status of progress
Goal 1: Eradicate Extreme Poverty & Hunger: Goal will partially be met				
Target 1.A: Halve between 1990 and 2015, the proportion of people below poverty line				
1.1: Proportion of population below national upper poverty line (2122 kcal), %	56.6 (1992)	31.5 (HIES 2010)	29.0	On track
1.2: Poverty Gap Ratio, %	17.0 (1992)	6.5 (HIES 2010)	8.0	Goal met
1.3: Share of poorest quintile in national consumption, %	8.8 (2005)	8.85 (HIES 2010)	na	-
1.3a: Share of poorest quintile in national income, %	6.5 (1992)	5.22 (HIES 2010)	-	-
Target 1.B: Achieve full and productive employment and decent work for all, including women and young people.				
1.5: Employment to population ratio (15+), %	48.5	59.3 (LFS 2010)	for all	Need Attention
Target 1.C: Halve between 1990 and 2015, the proportion of people who suffer from hunger.				
1.8: Prevalence of underweight children under-five years of age (6-59 months), %	66.0	45 (BHFNSA 2009)	33.0	Need Attention
1.9: Proportion of population below minimum level of dietary energy consumption (2122 kcal), %	48.0	40 (HIES 2005)	24.0	Need Attention
1.9a: Proportion of population below minimum level of dietary energy consumption (1805 kcal), %	28.0	19.5 (HIES 2005)	14.0	Need Attention

Source: UNDP, 'Status of MDG in Bangladesh', 2010, <http://www.undp.org.bd/mdgs/goals/MDG%20Goal1.pdf>

Strategies for Nigeria to Overcome the Challenges of Food Security for Enhanced National Security

Increase Agriculture Budget Allocation and Efficiency of Implementation.

In order to ensure that agricultural projects and programmes do not remain mere good intentions on paper, the federal, state and local governments would need to increase agriculture capital budget as a percentage of their aggregate capital budgets to the 10 per cent Maputo benchmark. Funds to cover the increase could be sourced from deductions of a percentage of tariffs on food items imported and exported from Nigeria as would be determined by the Ministry of Finance (MoF) and legislated by the National Assembly (NASS). Implementation of the agriculture capital budgets in a timely manner should be ensured as only such can aid growth in the sector. To this end, the NASS could at the point of budget approval attach time frame to capital budget execution.

Establish ‘One-Stop’ Private Sector-Led Agricultural Extension System.

The AES system in Nigeria could be reformed after the decentralized model of Bangladesh, but with some modifications. To this end, the federal, state and local governments in Nigeria could collaboratively establish and fund farm support centres (FSCs) as ‘one stop’ facilities in each of the 774 Local Government Areas (LGAs) in partnership with the private sector to provide the various services such as training on farming techniques and input support to farmers in each of the centres within their jurisdiction. Government is to subsidize services based on key performance indicator for all ESPs. The performance of the FSCs and farmers would be monitored by public ESAs such as the FMAWR and ADPs as well as the commercial banks assisting with payment for extension services delivered. The FGN would need to promulgate appropriate legal and regulatory framework on activities at the FSCs.

Develop Adequate Infrastructural Facilities. The strategy to mitigate inadequate and poor state of infrastructural facilities critical to boosting food production in Nigeria is substantial capital investment on infrastructural development. In the short to medium term (2013 to 2018), it would be crucial to develop the road network including feeder roads to rural areas needed to grow the Nigerian economy. Also, the dysfunctional railway system need to be refurbished and the 6,180MW electricity supply deficit provided. Public Private Partnership (PPP) arrangement through long term tax holidays could be used to finance the road and railway development as being implemented by FGN to improve electricity supply in the country.

Improve Irrigation Capacity. Improving the irrigation capacity for Nigeria’s rainfed agriculture would require adoption of the Bangladesh model whereby state control over management of medium to small-scale irrigation activities is transferred to the local government and beneficiary/community. The transfer could include financial autonomy with authority to collect water fees while working under strict budgetary limit to enhance the incentive for efficiency and revenue generation. Also, government could encourage private sector partnership in rehabilitation and management of deteriorated irrigation facilities and development of new small-scale and minor systems in disadvantaged areas through long-term tax holidays to enable recovery of costs on investment.

Establish Social Safety Net Programmes. Poverty and unemployment could be mitigated through adoption of Bangladesh model of food and cash support SSNPs. The SSNPs for Nigeria could focus on poor women including widows and children, destitute, the physically challenged and hard core unemployed as well as poor old age individuals above 65 years who are not entitled to formal pension. These groups are largely rural based and among the

poorest in Nigeria. To this end, the federal and state governments could liaise with the local governments to establish a database of eligible persons in each of the above categories to aid planning. Through collaborative funding, the federal and state governments could initiate programmes such as Community Nutrition Programme for women and children, Disability Allowance for the mentally and physically challenged persons, and Food for Work programme for the unemployment as well as Old Age Pension programme for the poor elderly persons. Funding for the programmes could be sourced from dedication of at least 2.5 per cent of the Federation Account as SSNPs Fund (SSNPF). However, the FGN would also need to seek partnership of development partners like World Food Programme (WFP) and NGOs.

RECOMMENDATIONS

Based on the foregoing analysis and findings, the following are hereby recommended:

The federal, state and local governments should increase annual budgetary allocations for agriculture to at least 10 per cent of their annual budgets while the NASS and State Assemblies should fix time frame to capital budget execution.

The federal, state and local governments should collaboratively establish and fund FSCs as ‘one-stop’ AES facilities in each of the 744 LGAs in Nigeria.

The FGN should liaise with the state governments rehabilitate defective national and state-rural roads and construct new, provide 6,180MW of electricity supply deficit and rehabilitate the rundown railway system in Nigeria.

The federal and state governments should respectively decentralize management of existing medium to small-scale irrigation facilities to local governments and beneficiary/communities and to involve private sector participation in public irrigation management.

The FGN should initiate legislative processes to establish SSNPs and seek approval from NASS for dedication of at least 2.5 per cent of the Federation Account as SSNPF.

CONCLUSION

An appraisal of the food security situation in Nigeria reveals that food security is of strategic importance to the sustenance of Nigeria’s economy by its contribution to total GDP annually by an average of 41.65 per cent, employment for over 70 per cent of population, poverty reduction and the wellbeing of

Nigerians. However, Nigeria is food insecure as food demand has not been met even with imports. It is estimated that about 17 per cent of the population of 166M are food-insecure. Unfortunately, the food security initiatives of government have not yielded the desired results.

Some key challenges identified to be militating against the attainment of food security in Nigeria are inadequate allocations and poor implementation of budgets for agricultural sector, weak agricultural research-extension-farmer linkage system, and inadequate and poor state of infrastructural facilities. Other challenges include climate change versus poor irrigation schemes, and poverty and unemployment. Despite the challenges, there is prospect for self-sufficiency in food production towards food security in Nigeria in terms of the abundance of natural resource endowment that could be harnessed.

Strategies to mitigate the mentioned challenges are the increase of agricultural budget allocations by at least 10 per cent of aggregate budget in line with the agreement reached by AU leaders in Maputo in 2003; and to improve efficiency of implementation through legislation by the NASS with the inclusion of time frame for capital budget execution. Government could also establish 'one stop' private sector-led FSCs in each of the 744 LGAs as AES system with the promulgation of appropriate legal and regulatory framework on the activities at the centres. The strategy to mitigate inadequate and poor state of infrastructure is substantial capital investment in infrastructural development such as the provision of adequate road network and 6,180MW of electricity as well as rehabilitation of Nigeria's railway system.

Other strategies include the improvement of Nigeria's irrigation capacity by decentralization of the management of public irrigation systems to the local governments and beneficiary/communities and involvement of private sector through appropriate tax incentives. The strategy to address poverty and unemployment is the establishment of SSNPs and seeking approval from NASS for dedication of at least 2.5 per cent of the Federation Account as SSNPF. It is envisaged that the implementation of the identified strategies would lead to food security for enhanced national security of Nigeria.

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