Review

Convergence of the Nigerian food and agricultural crisis on sustainable development

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Food and agricultural crisis as well as hunger are widespread and getting worse in Nigeria and sub-Saharan Africa. Sustainable development necessitates change in public policies, personal attitudes and behaviors. The issues related to agricultural and food crisis may be solved by reversal of negative policy trajectory. The social welfare needs of Nigeria are grossly inadequate, resulting in many people especially children, women and the aged knowing abject poverty, improper nutrition, housing, health and education including minimal love and care. We need long-term projections based on realistic estimates of future population growth and food production using latest agricultural technologies.

Key words: Food and agricultural crisis, hunger, sustainable development.

INTRODUCTION

Globally, there are variable needs and demands for food supplies, and it is not easy to generalize trends in agricultural development and food production on a general dimension. Several factors impact on the need for, and supply of, agricultural and other food products. There is an extant bleak future for food and agriculture in sub-Saharan Africa. It has become a threat due to the near uncertainties and increasing resource scarcity, heightened risk of climate change, higher energy prices, biofuels demand and speculations regarding the speed of technical progress. The dire food and agricultural crisis in Nigeria has taken the centre stage across the country. As Nigeria strives to overcome its developmental problems, food insecurity and programme policies to attain self-sufficiency in food and agricultural production for its ever-growing population, there is extant domestic hunger, rural poverty, malnutrition, morbidity and mortality, environmental, water and land degradation (Chukwuma, 1994) as the attendant sequelae of food and agricultural crisis in the country.

Although, the demand is basically related to population growth, other factors include anthropogenic and animal pests and predators, diseases, insect defoliation, inter- and intra-species competition for space, light and nutrients. With regard to the issue of food security, Nigeria is yet to sign the Food Reserve Act into Law for sustainable development in future domestic and global change (Chukwuma, 1995). So far, Nigeria presents sustainably as a larger and more complex ecosystem that is more likely to survive by moving from one stable, though temporary condition to another, given enough time and protection from debilitative centripetal and centrifugal forces.

THE PARADIGM FOR FOOD AND AGRICULTURAL PROGRAMMES

Even though, circa 60% of Nigeria’s population is employed in agriculture and food activities which provide the bulk of the country’s food consumption and raw materials, structurally and in perspective various factors
have allowed the country with its abundant resources to converge in food and agricultural crisis that is not sustainable for present and future generations. The small-scale farmer approach is still being generally practiced in Nigeria. For the improvement of the quality of the domestic agricultural programme; the mobilization of peasant farmers is recognized as the appropriate approach for realistic agrarian revolution.

The extant food crisis emanates from the weak agricultural base despite the efforts of the aforementioned agencies and the financial provision of the Nigerian Agricultural and Co-operative Bank (NACB) for agricultural production within the country. This occurred because the State apparatus unwittingly aided in the deterioration of the agricultural base and the economy of Nigeria. The licensed Buying Agents (LBAS), the various community and commodity marketing boards, and the local agents of the multi-national corporations resorted to systematic capital misappropriation and mismanagement of the peasant agricultural workforce by the implementation of direct and indirect taxation combined with other debilitating factors (The Democrat, 1995). Moreover, the oil boom of the 1970s dealt an excruciating blow to the agricultural sector with resultant virtual abandonment of agricultural activities and food production with reliance on an imbalance of food importation.

In Nigeria, there have been Ministries, Departments and Agencies of Agriculture in all the States and the Federal Capital Territory, including agricultural research institutes, national agricultural coordinating unit, the National Agricultural and Land Development Authority (NALDA) and River Basin Development Authorities (RBDA) as well as NAFCON, a fertilizer company established to improve farming inputs and methods in the rural areas. Nigeria has had programmes such as Operation Feed the Nation (OFN), Green Revolution, Accelerated Food Production Programmes as well as a litany of identical programmes and currently the FADAMA project to attain the desired self-sufficiency to avert agricultural and food crisis. Due to the impending food crisis, the government planned a national programme of Food for All by the Year 2000 to complement Health for All by the Year 2000. Several Nigerian families are currently food insecure despite the efforts of the Government, international agencies and the World Bank. Nigeria may not succeed in these efforts in the absence of genuine co-operation of the international community. If the international community is genuinely interested in stemming expansive social deprivation evident as poverty and income inequality, it is pertinent to boost agricultural and food production in the country. The Ministry of Water Resources and Rural Development has tended to promote irrigated agriculture to control the vagaries of weather, climate change and definitely execute development programmes, food security, liaison with certain countries to transfer technical expertise in irrigation and related projects, and public enlightenment campaign to educate farmers on the need for the productive use of the dry season for food production.

RURAL DEVELOPMENT AND POVERTY ISSUES

Peasant and subsistence farming still prevail in Nigeria. The rural farmers do not usually have commensurate economic returns for the human resources input because of inadequate extension services, land tenure system, procuring and distribution system, unsatisfactory agricultural inputs, inappropriate storage facilities, and unproductive established farming procedures. Additional constraints for rural life prosperity are low key commercial activities, insufficient electricity and potable water, decreased industrial establishments and banking services, inadequate health manpower and facilities, absence of recreational, library and communication facilities as well as preponderant white-collar based education in neglect of schools of agriculture (Nwosu, 1986); and easy susceptibility to disease.

Rural development was another approach to solve the country’s agricultural and food crisis with the establishment of the Directorate of Food, Roads, and Rural Infrastructure (DFFRI) which was concerned primarily with rural infrastructure, basic amenities, feeder roads for easy evacuation of farm produce, and procuring of agricultural inputs for the preparation of land, seeds and seedlings for distribution to small-scale farmers. Rural development is a strategy designed to improve the economic and social life of a defined group of populace – the rural poor. It involves extending the benefits of development to the poorest, such as small-scale farmers, tenants and the landless among those who seek a livelihood in the rural areas. It, therefore, translates in improving the living standards of the low income population residing in rural areas and making the process of their development self-sustaining (Lele, 1975).

Rural interests need to argue for development and assistance to communities in rural areas to provide domestic food needs and employment needed to eradicate rural poverty, hunger and high food prices as well as serving family farmers within Nigeria. Although, emphasis has been on the need for rural development in Nigeria, there is still need to positively appropriate a substantial proportion of available human and material resources to remedy the disequilibrium that features in the distribution of essential social services between urban and rural areas. The repercussion of these decades of neglect and inappropriate development strategy is evident in the pathetic condition of our rural area.

During the pre- and post-independence era, community self-help development programmes aimed to improve rural life quality resulted in the availability of fundamental infrastructural facilities in certain areas. Irrespective of these, a substantial proportion of the productive and
social welfare needs are not yet available. The extant economic downturn has dissipated immediate hopes of extricating the rural stagnation in Nigeria. A significant constraint for economic growth in the rural areas is the non-availability of all-season feeder roads. A wide expanse of the endowed agricultural areas in Nigeria have roads that are inaccessible because of deplorable conditions during the rainy season resulting in difficulty to evacuate agricultural produce as well as extend agricultural services and other inputs to rural farmers who are invariably excluded from mainstream domestic market system (Nwosu, 1986).

Poverty is frequently referred to as the consequence of environmental degradation, but the rich world is the greatest imminent danger to the global environment. If the same patterns of production, transportation, and consumption of the industrialised countries are applied in developing countries such as Nigeria, it may plunge into ecological disaster. The rich countries must adopt a thriftier lifestyle in combination with generous and prudently formulated development assistance programmes in which there is integration of environmental dimension in all aspects (Chukwuma, 1996a). Global inequality has been both a necessary condition for and a consequence of the affluent world’s exploitation of the resources of non-industrialised nations. Development co-operation subsists to improve the living conditions of the poor and the promotion of the sustainable use of resources.

The development crisis finds itself in the poverty of the nations lacking even the most basic needs, such as food, shelter, education, employment, adequate health care, means to articulate the social and economic environment. We need policies for the stimulation for equitable sharing and benefits of growth to encourage concerted global actions and responses. During an economic recession, the poor in industrialized nations usually obtain support through unemployment benefits from their government machinery or other forms of social protection, whereas the poor in non-industrialised nations get little or no assistance; and are thus, vulnerable to high food prices.

Information about the relative scarcity or surplus of agricultural produce is provided by the price signal. Invariably, monetary funds for agricultural subsidies are made to farmers in industrialized countries. This frequently results in over-production and surpluses in the industrialized world negating the need for food imports from non-industrialised countries with concomitant further reduction in prices and removal of incentives for expansion of production. These subsidies cost non-industrialised countries variable amounts of income.

**PRICE SUPPORT MECHANISMS AND INCENTIVES FOR AGRICULTURE AND FOOD**

From the 1960s to 1989, the Nigerian agricultural sector was endowed with favourable interest rates. Agriculture paid interest rates between 3 and 6%, as other sectors paid interest rates varying from 7 to 11%. Other incentives, such as the elimination of cattle tax termed “Jangali”, import duties on tractors and other agricultural equipment, and the two-tier system of produce tax were established. In 1973, the Nigerian Agricultural and Co-operative Bank (NACB) was established with a paid up capital of 2 million naira for its precise activities, while banks had to meet fixed credit target to it. In 1977, the Agricultural Credit Guarantee Scheme was established (Alabi, 2008) for the protection of banks from risk and ensure a restitution of 75 per cent of defaulted loans. A marketing board that operated between 1968 and 1986 bought farm produce from farmers for export. In 1984, the Nigerian Agricultural Insurance Company (NAIC) was founded to protect farmers against losses from natural hazards. These measures were also supported by governmental budgetary allocations. All these efforts and other measures could not salvage the declining contribution of Nigeria’s agricultural sector to Gross Domestic Product (GDP). The causes varied from procrastination in loan disbursement and high default; the programmes were more rhetoric, thus resulting as non-productive policy measures. Other constraining effects included the drought of 1972 and 1973 planting season, and the oil boom of the 1970s and 1980s which relegated agriculture and, the strong rural-urban drift that made cities very attractive for search of better welfare.

The ultimate and predominant need of any human being is food, the lack of which may spell individual and societal crisis. Prudence has to be employed not to use society’s available consumable food resources to assess the extent of surplus or deficit. Food manufacturers, for instance, tend to focus on government policy that influence food prices relevant solely to the connections with those who sell to them those who buy them for distribution. On the other hand, food manufacturers and producers may exert a greater policy perception or interest and concentrate on political decisions in the food chain process. This approach is necessary regarding decisions about agricultural price supports which increase food prices as well as consumer health and food safety issues relating to the same pricing effect in Nigeria.

The incessant aspiration of government to increase food supply is a magnanimous concept. However, we have to consider the capability of circa 150 million Nigerians to afford the prices of these basic and essential staple foodstuffs, as well as their caloric and nutritional needs and contents. These factors are necessary in the government’s attempt to regulate the nation’s food and agricultural crisis. Even though, an Agricultural Bank was established with government legislation to commercial banks to augment their credit facilities to farmers, there has been no concrete achievement to provide credit
facilities to farmers. A vast majority of the beneficiaries of these credit facilities have been large-scale farmers, the influential in our society, politicians, who usually divert the loans to other non-related agricultural and food ventures. The worthwhile programmes inaugurated in the 1991 fiscal year were NALDA, community banks as well as small and medium scale storage facilities, government support for Agricultural Universities and, liberalization of tax exmination of interest on agricultural loans.

The dismal performance of agriculture in its contribution to Nigeria’s yearly revenue in the past four decades informed the CBN in conjunction with the bankers’ Committee to increase lending to the agricultural sector from 1 to 5%. This, however, may not add the desired stimulus to the funding gap in the sector. The CBN additionally allocated NGN200 billion into the Commercial Agricultural Credit Scheme (CACS) to fast-track the development of the agricultural sector by providing credit facilities at a single digit interest rate to large-scale commercial farmers. It is estimated that the annual demand for agribusiness financing over the next 40 years is $6.5 billion per annum compared to the extant annual fund supply of $1.5 to $5 billion (Nweze, 2011). The Central Bank of Nigeria (CBN) and banks are working out modalities for the reduction of the agricultural finance gap. They are involved with Alliance for a Green Revolution in Africa (AGRA) and other stakeholders to develop an innovative financing mechanism, tagged Nigeria incentive-based Risk Sharing System for Agricultural Lending (NIRSAL). The scheme is expected to provide farmers with affordable financial products with decreased loan risks within other financing programmes offered by financial institutions. The initiative will enhance the capacity of banks to extend loans for agriculture, deploy risk sharing instruments to lower risks of lending and develop a bank rating scheme for bank assessment on their lending in the agricultural sector. This will help unlock access to bank finance critical to stimulate agric lending and increasing food and crop production; access to agricultural input, market linkages, technical support services, and financial services as avenue to revive Nigeria’s ailing food and agricultural sector. Thus, value chain financing will ensure the flow of financing within the agricultural sector, across all value chain stakeholders, thereby getting agricultural products to the markets. Therefore, opportunities exist for the provision of end-to-end banking solution for agriculture whereby banks can leverage and cross-sell a full suite of products and services in traditional commercial banking and lending, price hedging instruments to crop and weather insurance. The enormous share of agriculture in Africa’s GDP suggests strong growth in agriculture is necessary for economic growth. The need and opportunity exist for investments to develop the middle ground in Africa’s agriculture with its large natural potential. These will empower farmers’ access to funds, collaboration with certain government agencies and multilateral organizations to embark on a veritable agricultural revolution in Nigeria.

POPULATION, EXPORT AND IMPORT FACTORS

Besides the concern of food supply in the present and immediate future, that is apparently been sustained at a minimal level, it is essential to prevent a catastrophe in the additional tremendous increase in the Nigerian population expected within the next century. Agricultural and industrial technologies have inestimable costs which need not be disregarded in predicting the distant future. Provision of a great percentage of food to an indeterminate and uncontrolled population exposes the global community to both pollution and resource depletion. The disproportionate transportation of food from one region to the other would result in an immeasurable productivity decline from elemental loss in the provider countries. In the aspect that Nigerian and Nigerians cannot be dependent on the importation of food as well as the antecedent to imposed restrictions on food extraction from the industrialized world, we have to increase our agricultural base that an enormous reserve is sustainable.

Rapid population growth has resulted in the forfeiture of traditional land management and posed constraints for government to achieve of equitable distribution of health facilities and manpower as well as the development and funding of adequate comprehensive health services with the provision of other amenities. Human birth and mortality rates are neither far from constant nor exclusive, since they are dependent on economic, demographic and environmental factors such as, income, education, health care services, family planning, religion, the age structure of the population, pollution culture, social dynamics and other variables. Nigeria’s annual population growth rate is estimated at circa 3%. At exponential growth, Nigeria’s population may rise to about 1 billion in the year 2086, that is, nearly 1.5 times as the whole of the African population in 1990 (Meadows et al., 1992).

In most of these countries, low production levels are attributable to lack of sustainable availability of pesticides, fertilizers and irrigation. Among the 10 countries with land abundance in Africa, none had an increase in agricultural production as rapid as its population growth rate (FAO, 1982). Poor countries are sustained on 400lb grain/year, whereas more affluent countries use as much as 5 times the same quantity, with a great percentage of it through meat, egg and milk consumption. A modified consumption pattern in the latter population could contribute significantly to food conservation. The widespread substitution of vegetable for animal fats and proteins such as soya protein is beneficial. High-protein vegetables are conceivably a vital source of protein in the diet, and with appropriate information a needed alteration in consumption habits will
be effected (Guthrie, 1980). It is, however, a matter of conjecture, if population control in Nigeria would alleviate the magnitude of domestic hunger in that respect.

The grim situation of the agricultural and food crisis is depicted by the huge amount of money the country spends yearly for the importation of the most basic staple foods, including rice, wheat, fish and sugar. For example, the country spent NGN98 trillion between 2007 and 2010 on food importation; this is about NGN24 trillion annually. In 2010, Nigeria spent NGN632 billion on wheat, NGN536 billion on rice, NGN217 billion on sugar, and NGN97 billion on fish. Estimated yearly fish demand for the country is 2.66 metric tons; but the 2009 annual domestic production was 0.78 metric ton with a supply-demand gap of 1.88 metric ton. Although, livestock output in Nigeria has been increasing at 6 to 7% yearly, it is not able to increase proportionally with demand as a result of poor nutrition, disease and inadequate breed. This caused a spiked increase in meat and livestock prices. This situation was not presenting in the 1960s where agriculture provided the preponderant source of employment, income and foreign exchange earnings for the country. The presence of commercial crude oil exploitation in the mid-1970s, heralded gross decline in Nigeria’s agricultural and food input and output (Oloja and Oyeleye, 2011). Over-dependence on oil resulted in the neglect of the agricultural and food sector, hence decline in the production of food and the farming workforce for the increasing population of the country.

The rapid fluctuations in the global price of crude oil and food crisis in recent years have become issues of concern to policy and decision makers worldwide. Beginning with the initial oil shock of 1974, oil has contributed over 90% of Nigeria’s export income annually. In 2000, Nigeria obtained 99.6% of its export income from oil, thus making it the world’s most oil-dependent country. Despite the enormous earnings from oil, the country is still one of the most insecure countries in the world as regards food and agricultural production. This is even more evident in its domestic sector. Even with its enormous resource from oil, Nigeria’s economic base is threatened with hunger and malnutrition, having circa 70% of its populace living on less than NGN100 per day. From 1970 to 1979, the average yearly deficit in per capita daily caloric intake was 24.4%; with a decline to 23.58% from 1980 to 1989, and dropped to 11.34% in 2006. This has been a recurring issue reporting that an estimated 40% of the population present with food insecurity; and the incomes of most families are inadequate for the basic sustenance of life (Akpan, 2009).

The variance decomposition depicts high imports of food have contributed remarkably in food supply, but not significant to determine food security. There exists urgent need for policies to enhance local production of staple foods and reduce over-dependence on oil resource revenue in Nigeria. Nigeria has proposed to ban the importation of rice and fertilizer to the country by 2014. Despite over 80 million hectares of land available to Nigeria for farming, the country has not been capable to meaningfully effect agricultural production because half is presently being utilized (Adeyemi, 2011). In its resolve to stop food importation, the country plans to harness potentials to ensure massive food production that will feed the country and possibly the entire African continent (Taiwo-Obalonye, 2011). In order to boost agriculture and encourage local production by farmers to tackle the food crisis, there is an extant need for an indigenous crop grown that will bring direct economic benefits to the population. It is pertinent to develop agriculture as a business, and not as it is currently obtained. Currently, agriculture produces enough food for the people to consume, but the whole value chain from production to consumption is relevant. Cassava presents a vast potential for this agribusiness because it has played important roles in the diet of several African populations, yet there has been limited utilization of the crop in different forms (Raheem and Chukwuma, 2001) There is the need to increase the yield per capita because Nigeria has the capacity to do so; and to increase the yield per hectare to equilibrate international standards, especially the processing and manufacturing aspect of agriculture and food.

By creating the profitability to clear land for cocoa growing in Nigeria, exchange rate depreciations have exerted intense pressures for deforestation where ill-defined forest ownership prevails with concern for the resultant environmental impact. Valuing environmental benefits creates the attractiveness of some investments. For instance, a forestry project in northern Nigeria funded by the World Bank indicated that for calculating the economic rate of return, the advantages of enhanced timber production encompassed soil erosion reduction, augmented crop yields, extra fodder and forest products. By means of prevailing and projected market prices, these benefits enhanced the project’s rate of return by a factor of 3 and increased the worth of the investment.

Irrespective of these and other remarkable achievements, a great percentage of the non-industrialised world is in a long-run agricultural and food crisis. In contrast to the mid-1960s, it is reported that in the mid-1980s, amongst the 50 poorest nations, of which 75% are in Africa, 37 really had less food production per capita. In 20 of the 37 nations, daily caloric consumption diminished by as much as 20 to 30%. In 1985, the other 13 nations had moderate to sufficiently increased production per capita, with 7 unable to satisfy minimum subsistence levels. In several non-industrialised countries the mean daily caloric consumption, observable below subsistence levels in 1985, continued declining by 1986, as agricultural productivity declined by 30 to 40% in some regions, while a minimum of 25% of the children presented with mild to severe malnutrition (World Bank, 1983; World Bank, 1988, UNICEF, 1989).
ENVIRONMENTAL IMPACT AND SUSTAINABLE DEVELOPMENT

However, the phenomenal agricultural success in the industrialized community is partly as a result of enormous input of fossil fuel. The energy needed for food production is invariably higher than the caloric value derived from it (Guthrie, 1980). Nigeria needs to maintain a land and food bank for future generations. As with economic growth, food availability in a country must increase proportionally to the population growth rate in order to obviate decline in consumption per capita. If the prevailing caloric intake level is inadequate, it becomes pertinent for food production and imports to increase more than population growth to satisfy minimum caloric needs. In the past decades with the assistance of augmented use of irrigation, pesticides and fertilizers, most non-industrialised communities significantly increased food production (World Bank, 1989).

Sustainable development abhors the overtaxing of environmental, food and agricultural resources; so, there must be availability for present and future generations (Chukwuma, 1996). When sustainable yields of forests, aquifers and croplands are exceeded by populations, they invariably commence to consume the resource base itself (Brown, 1987). Those countries with higher population growth rates have frequently converted land to agricultural uses, thus exerting excessive pressures on land and natural habitat. In most parts of eastern Nigeria, intensification of farming by shorter fallow periods rather than by better inputs and techniques has led to soil resource mining, stagnation or decline in yields. Those who place faith in the concept of sustainable development have not been able to explain the means by which industrial economies can expand in the face of ever-decreasing space and degradation in developing countries (Chukwuma, 1996b).

In a vast proportion of the non-industrialised world, land degradation is a severe problem. Estimates are that 6 to 7 million hectares of agricultural land become unproductive annually as a result of erosion. Waterlogging, salinization and alkalinization destroy a further 1.5 ha. In the early 1980s, it was reported by the United Nations Environment Programme that a total of 1501 million hectares of rangeland and cropland in on-industrialised countries were being subjected to a minimum of medium-scale desertification (UN Population Fund, 1990). Agricultural techniques for soil conservation and improvement like terracing, contour plowing, composting, cover-cropping, polyculture, and crop rotation have been applied for hundreds of years; while other procedures, especially practicable in tropical zones, such as alley cropping and agroforestry are demonstrable on farms and experimental stations (Dover and Talbot, 1987). High yields are realized sustainably in both temperate and tropical regions without high rates of fertilizer and pesticide use (US National Research Council, 1989). Soil-conserving and ecologically effective and efficient agricultural methods have been adopted by several farmers. It is pertinent that farmers acknowledge and practice these enabling procedures. The problem involved is social rather than technical (Crosson and Rosenberg, 1989).

Nigeria is facing water scarcity, a serious environmental dilemma resulting from certain agricultural practices and unsustainable production systems (Chukwuma, 1998). There is a need for pronounced adjustments in agriculture, environmental and macroeconomic policies on both domestic and international fronts to deal effectively with these situations (Cleveland, 2010). We need a future with environmentally and economically sustainable agriculture with full concern for the environment incorporated into new irrigation and drainage projects and similar or diverse schemes. The sustainable futures system is by a more comprehensive approach to water management (Ahaneku, 2010). It needs to be recognized that water and water-dependent ecosystems have to be managed as invaluable natural resources to satisfy multifarious uses rather than just scientific inputs. Development of sustainable agricultural systems cannot be simply limited to agricultural products, but should embrace non-agricultural components as well.

Even though, high crop yields are realized, industrial agriculture leads to energy wastage, genetic diversity reduction, water supply degradation and depletion, soil degradation, wetland dissipation, and human health threat (Chukwuma, 1995). Sustainable agriculture is designed for energy saving, topsoil and irrigation water conservation, as well as reduced consumption of chemical fertilizers and pesticides. It entails crop rotation, poly-cropping, reduced or no tillage, trickle irrigation, legume use for nitrogen fixation, and integrated pest management for pest control utilizing soil-biological system strategies. A variation of sustainable agriculture, low input agriculture (LISA) or designated as best utilization of biological materials (BUBA) entails low dependence on fertilizers, pesticides and other commercial energy inputs; increase agricultural productivity, benefits and profits; energy and natural resource conservation; reduction of soil nutrient loss and erosion; and development of sustainable farming (Tivy, 1990; The Conservation Foundation, 1986, National Resources Defense Counsel 1991). A form of integrated pest management, classical biological control makes use of natural predators for damage management that entails substantial development costs and significant results as clearly illustrative of Africa's cassava mealybug programme. The mealybug which migrated from Latin America in the beginning of the 1970s reduced cassava yields by about 67% by 1983. Biologists ultimately discovered natural enemies for pest control, By the development of mass-rearing and distribution techniques at the International Institute of Tropical Agriculture (IITA) and the International Centre for Tropical Agriculture,
losses were brought under control in over 90% of the cassava-growing areas of Africa. This measure that is devoid of chemical consumption and few environmental risks, saved the cassava crop that provides about 25% of the calories consumed in sub-Saharan Africa at a benefit-cost ratio estimated at 150 to 1 (World Bank, 1992).

**DISCUSSION AND CONCLUSION**

Recent increases in basic food prices are now of dire consequences on vulnerable populations in both industrialized and non-industrialized countries. It has been proposed that the causes of these culminating in widely disparate implications for policy are due to grain shortage resulting from adverse weather, increasing meat consumption in India and China, conversion of maize/corn to ethanol in the United States of America, and investor speculation on commodity markets (NECSI 2011). However, Glenn (2011) posits that the long-term factors that are likely to be linked to increasing food prices include population growth, rising affluence, diversion of corn consumption for biofuels, soil erosion, aquifer depletion, loss of cropland, falling water tables and water pollution, increasing costs of fertilizers (high oil prices), market speculation (market forces), water diversion from rural to urban areas, increasing meat consumption, global food reserves at 25-year lows, increasing droughts – climate change, melting mountain glaciers reducing water flows – climate change and, eventually salt water invading crop lands.

Agriculture and food production constitute the greatest nutrient source to surface waters resulting in eutrophication. Major research areas relevant in Nigeria include monitoring of agricultural loads in representative cultivable lands and their environs, system development for regional variation in agricultural loads, and simulation model development for impact assessment of various management practices, as well as assessment system development that comprises economic evaluation for the mitigation of implementation measure. Research offers the opportunity for enhancing agricultural and food production in Nigeria (Chukwuma, 2011). The problems requiring the focus of domestic institutions including averting the research bias against non-internationally commercialized indigenous crops, development of technologies which are capable of lowering post-harvest losses, effective research and extension systems coordination, and the significant cooperation between researchers, extension agents and local farmers for the assurance of adequate feedback. Food security has to be enhanced in various manners by agricultural trade liberalization. Global price movements can aid in the indication of product shortage, and hence encourage substitute supply. It is by means of trade that variations between domestic production and consumption needs are dealt with, particularly during adverse shortfalls in production (UN, 1993).

The National Agency for Food and Drug Administration and Control (NAFDAC), manufacturing and agricultural communities in Nigeria need to raise significant concerns about the impact of importation of agricultural produce and food items into the country. Due to differences in agricultural chemical consumption, crops grown in other countries may contain higher concentrations of pesticide residues than may be allowable or permitted on crops sold and consumed in Nigeria. Although, agricultural produce and other food products which do not meet the Nigeria pesticide consumption standards may not be imported to Nigeria.

The output of agriculture is directly proportional to capital expenditure on the sector of agriculture but inversely related to the credit facilities for agriculture and food production. It is also important to improve government capital expenditure and expansive latitude for credit policies, institutions and facilities to target rural farmers as beneficiaries (Purokayo and Umaru, 2012). In order to mitigate the challenges of poverty, ignorance, disease, hunger and general development on the continent, Africa must fathom means of processing both its agricultural produce and food resources to add value to its exports. This would not only earn the continent what it deserves for its resources, but also create employment, adequately utilize and reward its labour force, earn more money which could be used in the development of capital projects, and boost industry, create wealth and a state of optimum social welfare benefits for the people (National Life, 2011)

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