

NIGERIA BEYOND OIL: AGRICULTURE AND SUSTAINABLE DEVELOPMENT OPTION

DIKE, C. K. (PhD)

ABSTRACT

The place of agriculture in Nigeria's economy has remained critical over the decades. Prior to the political crisis of 1967-1970, agriculture's positive contributions to the economy were instrumental in sustaining economic growth and stability. The bulk of food demand was satisfied from domestic output, which inevitably reduced the need to utilize scarce foreign exchange resources on food importation as it is in the present day Nigeria. Stable growth in agricultural exports constituted the back bone of a favorable balance of trade. Sustainable amounts of capital were derived from the agricultural sector through the imposition of several taxes and accumulation of marketing surpluses, which were used to finance many development projects. However, the crisis that developed in Nigerian economy during the civil war became more serious in the early 1970s, which coincided with the rising fortunes of the petroleum sector. This has inevitably diverted attention of the Nigerian economy from agriculture which in essence has made Nigeria a monocultural economy. This paper therefore sought to emphasize on the fact that agriculture will be the fastest bail-out for the Nigerian economy beyond the oil sector.

INTRODUCTION

In September 2000 the Heads of States of the world gathered in New York at the United Nations to mark the Millennium as well as the UN General Assembly meeting. In the meeting 60 goals were adopted and one of them was the Respect for Nature. This goal points to the fact that prudence must be shown in the management of all living species and natural resources, in accordance with the precepts of sustainable development. It is only by so doing that the riches provided to man by nature can be preserved and handed over to generations unborn. This therefore indicates that sustainability views the possibility of preserving the future of generations unborn by preserving now.

Sustainable Development is a concerted effort to link the issues of economic development and environmental stability. According to United Nations General Assembly it is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. This concept aims at maintaining economic advancement and progress while protecting the long-term value of the environment. It provides the basis for integrating environment policies and development strategies. Sustainable Development is an effort to link the issues of economic development and environment. Although many definitions abound, the most often used is that proposed by the Brundtland Commission and Cerin, 2006; Dernbach, 2003; Stoddart, 2011. According to United Nations General Assembly it is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Agriculture's footprint on our ecosystem is substantial. In fact, agriculture consumes 70 percent of our world's water for the irrigation of crops. However, advancements in agriculture technology are an important contributor to a more sustainable agriculture system that promotes continuous improvement and less resource use. Investment in agricultural innovation is necessary to enable the world to produce more food with fewer resources and less land.

AGRICULTURE AND SUSTAINABLE DEVELOPMENT

In the years following the Brundtland Commission's report on sustainability the creative ambiguity of the standard definition, while allowing a range of disparate groups to assemble under the sustainable development tent, also created a veritable industry of deciphering and advocating what sustainable development really means. One important study by the Board on Sustainable Development of the U.S. National Academy of Sciences sought to bring some order to the broad literature its members reviewed. In its report, *Our*

Common Journey: A Transition toward Sustainability, the board focused on the seemingly inherent distinction between what advocates and analysts sought to sustain and what they sought to develop, the relationship between the two, and the time horizon of the future.

The concept of sustainable development vis a vis agriculture does not imply limits but limitations imposed by the present state of technology on environmental resources which have the ability of hampering the biosphere and other human activities. Typical of this situation is the activities of oil companies in the exploitation and exploration in the Niger Delta region of Nigeria which in other words hampers agriculture as well as destroying the environment. The implications of such activities run foul of the United Nation's programme on sustainability. The environment is devoured because of the presumptuous nature of the operators to live well today and forget about tomorrow. This type of development is not sustainable as it meets the needs of the present and compromising the ability of future generations to meet their own needs.

Prior to the oil boom in Nigeria, agriculture was the mainstay of the economy, employing nearly 80% of the country's labour force, contributing 70% of GDP, providing most inputs into the manufacturing sector, and dominating the commercial and distribution industry. The monumental projects executed in the three regions were funded mainly from agricultural proceeds. Notable among them were the establishment of the University of Nigeria Nsukka in the East through proceeds from palm produce, the University of Ife in Ile-Ife and the Cocoa House in Ibadan, both in the West, through proceeds from cocoa, and the Ahmadu Bello University Zaria in the North through proceeds from groundnut, and other agricultural products. Today agriculture has been relegated to the background, while the oil sector has taken over the front seat and has piloted the Nigerian economy to the monoproduktivism of the nation's export sector.

Agriculture involves the cultivation of land, raising and rearing of animals for the purpose of production of food for man, feed for animals and raw materials for industries. It essentially includes crop production, livestock, forestry and fishing and the processing and marketing the agricultural products. Any of these activities that does not affect the environment positively can be said to be against sustainable development.

In the views of Emas (2015) the limitations of present state of technology and social organization on environmental resources hampers human activities. Hence sustainable development requires that societies meet human needs both by increasing productive potential and by ensuring equitable opportunities for all. It seems reasonable to interpret sustainable development as development that can continue forever or at least for a very long time or for several generations. Sustainable development is increasing well-being over a very long time. It recognizes that the problems of poverty and underdevelopment cannot be solved unless we have a new era of growth.

In agriculture there is need to feed an expanding population at higher per-capita levels of consumption and straining global soil and water systems (Harris and Kennedy, 1999; Pinstrip-Andersen and Pandya-Lorch, 1998). A transition to more sustainable agricultural systems requires changes on both the production and consumption sides. On the production side, current high-input techniques which are leading to serious soil degradation and water pollution and overdraft must be replaced by organic soil rebuilding, integrated pest management, and efficient irrigation. This in turn implies much greater reliance on local knowledge and participatory input into the development of agricultural techniques (Pretty and Chambers, 2000). On the consumption side, both limits on population growth and greater equity and efficiency in food distribution are of central importance given probable resource limitations on production.

National and international agricultural research centers are stepping up their efforts to improve the productivity of subsistence farming. Emerging technologies such as agro forestry, allied and multiple cropping, improved genetic material, nitrogen-fixing trees and crops, and biotechnology hold much promise. New farming systems are more likely to succeed if they accommodate the existing variability in soils. Several constraints often lead developing countries to resist adopting the concepts and practices of sustainable agriculture.

REVIEW OF RELATED LITERATURE

According to Omawale and Rodrigues (1979), agriculture has been assigned an important role in national development by most developing countries. It has been seen as a means of reducing dependence on certain importations, containing food price increases, earning foreign exchange, absorbing many new entrants to the labour market and increasing farm incomes at times of severe unemployment and rural poverty.

Agreeing with the above views, Johnston (1970) submitted that the appraisal of agriculture's contribution or role in the national economy can be made using four criteria, namely: the proportion of the population engaged in agriculture; the share of agriculture in the Gross Domestic Product (GDP); the proportion of the nation's resources (other than labour) devoted to or employed in agricultural production; and the contribution of the agricultural sector to foreign trade. The ensuing section appraises some agriculture parameters as reflected in their contribution to the overall development of the Nigerian economy. The theory of externalities demonstrate the need for a set of taxes on the generators of an externality or damage to induce them to take proper account of the full range of social costs that their activities entail. In adopting the framework of a market economy and perfect competition, Pigou established that when there are externalities, private and social costs are not equated, nor are private and social benefits equal. Thus, the social costs (which are damages) borne by the receptors of production activities, are not equal with that which the polluter bears. For instance, environmental impacts of gas flaring are clearly externalities which are not fully reflected in potential or actual market exchanges (Porter & Van der Linde, 1995). These externalities are caused by market failures resulting from incomplete markets.

Pardey et al (2006) found that every 1% increase in per capita agricultural output led to a 1.61% increase in the incomes of the poorest 20% of the population. Thirtle et. al. (2003) concluded from a major cross-country analysis that, on the average, every 1% increase in agricultural yields reduced the number of people living on less than US\$1 a day by 0.83%. Hence, development of the agricultural sector, defined in terms of increased production with decreased average cost, becomes prerequisite for the overall development of an underdeveloped economy (Hobbs et al, 2000). Adofu et al (2013) studied improved agricultural technologies on cassava productivity and found a positive impact of improved agricultural technologies on cassava productivity.

Kozári (2007) points out that in several freshly independent African and Asian countries application of inappropriate methods ceased in the course of several years. However from the mid-1970's the national governments with the assistance of international organizations (FAO, World Bank, IFAD, regional banks, etc.) made new efforts to re-organize the agricultural extensions systems in these countries. Auta and Dafwang (2010) point out that Agricultural Development Projects (ADPs) were launched in 1972 in order to increase food production, and to raise the income of small-scale farmers. The success of the pilot schemes led to expansion nationwide by 1984, but nowadays the ADPs in majority of the states stand just as symbols of past glory.

Thirtle *et al* (2003) explored the relationship between agricultural productivity and poverty. They drew on observations between 1985 and 1993 in 48 developing countries and found that a 1% improvement in crop yields reduced the proportion of people living on less than US\$1 per day by between 0.6 and 1.2%.

Fuglie and Rada (2012) showed that despite recent improvement, agricultural productivity growth in Sub-Saharan Africa (SSA) continues to lag behind every other region of the world. Their studies show that growth rates in this region is roughly half of the average rate of developing countries. They concluded that SSA should increase its accumulated knowledge and capital from long term national and international investments in agricultural research and development which will gradually deliver improved technologies to farmers.

PROBLEMS OF SUSTAINABLE DEVELOPMENT AND AGRICULTURE

The main cause of sustainable development problems is always ecological. Environmental problems and degradation stem from externalities and most often they are costs and not benefits. Most of the environmental externalities (as it affects sustainable development) are damages or costs which are not paid for by the polluter or producer under normal market conditions. Externalities are defined as the costs or benefits which arise when the social economic activities or production system of one group of people have a positive or negative impact on another and in which the first group may fail to fully account for the impact. It is very obvious that every economic activity or production of man in any environment has detrimental effects or externalities on the ecosystem. The obvious implication is that every productive enterprise generates externalities to the environment and people in the course of its production.

Poverty pollutes the environment, creating environmental stress in a different way. The poor and hungry will often destroy their immediate environment in order to survive. For instance they will cut down forests, their livestock will overgraze grasslands, they overuse marginal land and in growing numbers they will crowd into congested cities. The cumulative effect of these changes is far-reaching as to make poverty itself a major global scourge. People destroy vegetation in order to get land, food, fodder, fuel, or timber and subsequently the soil is no longer protected. Rain creates surface runoff, and the soil erodes. When the soil is gone, no water is retained and the land can no longer produce enough food, fodder, fuel, or timber, so people need to turn to new land and start the process all over again.

There are many environmental trends that threaten lives of many species upon the earth, including the human species. Each year over 6 million hectares of productive dry land turns into desert. So many hectares of forests are destroyed yearly and converted to low-grade farmland unable to support the farmers who settle it. Acid precipitation kills forests and lakes and damages the architectural heritage of nations and sometimes it acidifies vast tracts of soil beyond reasonable hope of repair. The burning of fossil fuels puts into the atmosphere carbon dioxide which causes gradual global warming. This 'greenhouse effect' has increased global temperatures that shifts and have negative effects on agricultural production areas. Industrial gases threaten and deplete the planet's protective ozone shield to such an extent that the number of human and animal cancers would rise sharply and the oceans' food chain would be disrupted, industry and agriculture put toxic substances into the human food chain and into underground water tables beyond reach of cleansing (OECD, 1984). Another constraint is lack of awareness, not only at the farm level but also at higher levels in the society. Even if the farmers are willing and able, extension services are poor or nonexistent in most developing countries.

A further constraint relates to information base. Implementing sustainable agriculture assumes that reasons for non-sustainability are known, there is sufficient information on the resource base to target activities that will foster sustainability, and the resource base can be monitored to evaluate sustainability. In Nigeria and most developing countries, these conditions are uncertain.

Another serious problem is deforestation. During the twentieth century, forest surface has been cut in half in developing countries, aggravating problems such as soil depletion, flooding, sedimentation, and threatening the life of countless species of plants and animals (Pearce and Markandya, 1994). Desertification involves complex interactions between humans, land, and climate. The pressures of subsistence food production, commercial crops, and meat production in arid and semi-arid areas all contribute to this process. This implies that desertification and deforestation should be avoided in all its ramifications.

CONCLUSION

Nigeria operates mono commodity (petroleum) based economy. She just extracts the oil for export. The generated revenue is not effectively invested on diversification of the economy to develop a robust and stable economy. This is due to some socio-political challenges that border on individual interests and poor

socioeconomic orientations that militate against industrialization of the economy.

The situation exposes the nation to both economic and socio-political instability as the economy fails to accommodate wide spectrum of people and sustain the basic needs of the populace. Nigeria should pragmatically address the challenges of poor industrialization to diversify her economy (Anyaehe & Areji, 2015)).

The Nigerian economy needs growth in order to reduce the financial burden of imports, create jobs to absorb the growing unemployment, grow incomes, reduce poverty and increase prosperity. To achieve social development is really very important in a country which is the most populous one in Africa, and where harmony and peaceful co-existence among various religions and ethnic communities is really fragile. Creating more jobs in rural areas may diminish tensions and also the popularity of radical political groups especially in the young generation.

Although various factors have been adduced to Nigeria's poor economic performance, the major problem has been the economy's continued excessive reliance on the fortunes from the oil market without any meaningful economic diversification (Osuntogun et al.,1997), reflecting the effect of the so called "Dutch disease". Cocoa is one of the products that have been a major export crop in Nigeria dominating the major export of Nigerian economy. However, the production of this export crop in Nigeria has suffered a reduction in recent years owing to a number of factors (Oluyole and Sanusi, 2009). Villalobos (1989) identified some of these factors as: low yield, inconsistent production pattern, disease incidence, pest attack and use of simple farm tools.

Oduwole (2004) in his study identified aging plants as one of the factors responsible for the decline in agricultural output Nigeria. Many farms were over 40 years old and such farms constitute less productive assets to Nigeria..

The dilemma facing the agricultural sector is not only that it is being overshadowed by the oil export trade, but less emphasis by the various governments on non oil exports and loss of market share in the non oil trade. This is the main reason why Nigerian economy has been consistently eroded over the last three decades.

The overall goal of sustainable development is the long-term stability of the economy and environment; this is only achievable through the integration and acknowledgement of economic, environmental, and social concerns throughout the decision making process. Sustainable agriculture cannot be achieved overnight, institution building takes on added significance. Many developing countries do not have detailed information on their resource base and consequently, data bases must be developed and techniques instituted to monitor resources.

The effects of poor environmental management are felt dramatically and drastically in Nigeria. The amount of agricultural land now being lost through soil erosion is estimated at a minimum of 4 million hectares per year (Myers, 1994). This phenomenon is disastrous, since hundreds of years are required to renew a mere 25 millimeters of soil, or the equivalent of 400 tons of soil per hectare (Hudson, 1981). It has been estimated that from 1985 to 2000, losses may reach a cumulative total of 40 million hectares (Sfeir-Younis, 1986).

Failure to manage the environment and to sustain agriculture threatens to overwhelm all countries. Environment and agricultural development are not separate challenges. They are inexorably linked. Agriculture cannot subsist upon a deteriorating environmental resource base and the environment cannot be protected when growth leaves off and does not account for the costs of environmental destruction. These problems cannot be treated separately by fragmented institutions and policies. They are linked in a complex system of cause and effect. This implies that success in one area, such as forest protection, can improve chances of success in another area, such as soil conservation and agricultural output.

RECOMMENDATIONS

Based on this study it is necessary therefore to make the following recommendations:

Loans should be made available to investors and the interests on these loans should be reduced to allow the investors to invest more and consequently increase the volume of export.

Government should provide local investors with infrastructural facilities and create enabling environment for local investors to access in order to reduce over dependence on foreign products.

Fiscal policies should be lessened especially tax on importation of agricultural equipments which will enhance agricultural output.

Agricultural sector has a significant impact on the Nigeria's non –oil sector. Agriculture should be the way forward for the Nigeria economy beyond the oil economy. This is because agriculture provides food for the teeming population, raw materials for the manufacturing sector and jobs for the large army of unemployed in Nigeria.

Even when agriculture was the main stay of the Nigerian economy until the oil boost in 1970 when it drastically dropped out, this study also observed that agriculture still plays an important role on the non-oil export sector. However to improve growth in this sector, more of government expenditure on agriculture should be channeled in the establishment and development of agricultural facilities so that some of the agricultural produce will be exported.

Agricultural research centres should step up efforts to improve agricultural productivity. Furthermore, emerging technologies such as agro forestry, allied and multiple cropping, improved genetic material and crops should be provided to the farmers to enhance productivity.

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