

The Place of Environmental Adult Education in the Enhancement of Rural Occupational Practices and Sustainable Socio-Economic Development to Foster Reversal of Nigeria's Economic Downturn

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Abstract

Unprecedented skyrocketing in global fossil oil (petroleum) prices in the early 1970s launched Nigeria into massive foreign exchange earnings. Gradually, oil became the mainstay of the country's economy to the extent that budgets, salary structures and general infrastructural development became predicated on oil revenue. This virtual economic monoculture gradually diminished Nigeria's economic buoyancy as income from oil progressively dwindled since the 1980s. The ultimate outcome is the economic recession being experienced in the country currently (2016). The situation has induced the Nigerian leadership to evolve a policy of diversification of the economy through large-scale production in agriculture and other internal and foreign exchange revenue yielding livelihood assets (many of which were previously designated rural ventures) as positive bail-out sources for the country's economic recovery. To achieve success, the enhancement of rural occupational/career practices and socio-economic development strategies has been deemed an inevitable component of the economic revitalization process. This paper examines the implications of the new mode and processes of achieving the desired speedy and large-scale production (use of chemicals, mechanization, manufacturing and so on) for human health and the rural environment. The paper harps on and explains the necessity of environmental education as part of the career enhancement process for rural adults who constitute the hub of Nigeria's rural workforce.

Keywords: Economic diversification; rural workforce; environmental education; occupational enhancement; resource sustainability.

1. Introduction

For several years, especially after Independence in 1960, successive governments of Nigeria put up various programmes for the socio-economic development of the country's rural areas. Regrettably, the programmes failed to achieve the desired objectives as a result of various factors, ranging from limiting educational and other demographic characteristics of the rural workers to the faulty structures of the programmes which neglected non-oil sources of revenue. This paper looks, in some detail, into the inherent attributes and objectives of rural socio-economic development and sources of the failure by Nigeria to achieve the objectives over time.

Nigeria's current economic recession has forced the country to work out a policy for enhanced and speedy production processes in the non-oil sector, especially rural agriculture and some other rural-based occupations considered to be possible veritable sources of rural socio-economic development and resuscitation of the ailing national economy. This paper further highlights the place and usefulness of basic categories of environmental education to predispose the rural adult population (who constitute the dominant economically active and productive rural workforce) in Nigeria towards adopting the necessary individual and collective environmentally –friendly occupational modes of the nation's desired large-scale production. Such predisposition, the paper argues, would not only provide needed support for government efforts towards accelerating the pace of rural socio-economic development and serve as a fulcrum for overall national economic regeneration, but would also ensure sustainability of both human and material resources for the current revamping and continued stability and growth of the Nigerian economy.

2. Rural Adult Population in Nigeria as a Workforce for Sustainable Socio-Economic Development

2.1 Concept of Rural Sustainable Socio-Economic Development

The term socio-economic development usually refers to a process of growth in Gross Domestic Product (GDP) and Per Capita Income accompanied by fundamental improvements in living standards of the people which include health conditions, education, longevity and transition from primary to secondary production. Socio-economic development becomes *sustainable* when it is achieved through prudent utilization of currently available resources in such a manner that such resources must be also available to future generations for their own development (Eheazu, 2016). Nyagba (2009:7) explains sustainable rural socio-economic development in the following words:

We must all understand that sustainable development is a strategy by

which communities seek economic development approaches that also benefit the local environment and quality of life. It has become an important guide to many communities that have discovered that traditional approaches to planning and development are creating, rather than solving, societal and environmental problems. Where traditional approaches can lead to congestion, sprawl, pollution and resource over consumption, sustainable development offers real, lasting solutions that will strengthen our future.

In the same vein, Akpomovie (2010:254) sees the major objective of sustainable rural development as encompassing “improved productivity, increased employment and thus high income for target groups as well as improved qualities in the basic needs of life which include food, shelter, job opportunities, health services, education, improved attitudes like political behaviour and so on”.

2.2 Demographics of the Rural Adult Population in Nigeria

The definition of rural area/population has usually been varied and non-encompassing due to the varied indices and characteristics involved. For instance, the National Geographic Society (2016) encyclopedic entry defines a rural area as an open swath of land that is characterized by few homes, not many people, low population density and small settlements with agriculture as the mainstay of the economic activities. Sometimes, nominally similar but statistically non-compatible indices are used to determine rural or urban areas. For example, while the Nigerian Federal Office of Statistics defines rural areas in the country as communities with less than 20,000 people, the United States of America Census Bureau (1995) considers a community with a population not above 2,500 inhabitants as rural.

Whatever parameter is adopted to define a rural area, it has been long established (Unesco, 1980) that the greater percentage of the populations of many developing countries live in rural areas. In the case of Nigeria, current statistics show that the country belongs to a group of developing nations whose rural populations exceed 50 per cent of their total populations. For instance, according to the World Bank (2016), Nigeria’s rural population statistics were 53% and 52% of the country’s total population in 2014 and 2015 respectively. Unfortunately, these rural areas are characterized by a host of social and economic problems, including high levels of illiteracy and low economic returns from occupational endeavours essentially caused by low productivity and inadequate road networks and transportation systems for exchange of goods and services. There are also the problems of inadequate health provisions, improper sources of potable water as well as near absence or reliable source of power and illumination.

Besides, it has been long recorded (United Nations 1972) that over 50 per cent of the teeming rural population in developing countries (including Nigeria) is made up of teenagers many of whom are in school. This revelation appears to be true ever in recent times. For instance, Wikipedia (2009) has recorded that by 2008 almost half of Nigerians were aged 14 years or younger. Again, the CIA World Fact book Population Statistics (2015) indicates that people aged 0-14 years constituted 43.8% of Nigeria’s population in 2014. When applied to the rural areas, this well-articulated population structure clearly leaves a proportionately small adult labour force who, in addition to being responsible for the education of their young, must also care for the aged and the infirm most of whom belong to an apparently limitless extended family system. The resultant general penury and lack of savings associated with the responsibilities of the rural adult often lead to inability to pay school fees and a tendency for many rural youth to drop out of formal education and eventually constitute a large body of unskilled labour (Eheazu, 1990). Such youth face frustrations in their future attempts to fit themselves into available employment opportunities in the rural communities and this serves as a ‘push factor’ for youth migration to urban centres. Thus the comparatively small percentage of rural adult population, most of whom are illiterates, constitute the core of rural labour force and the hub of rural productivity.

Although many of the adults engage in various artisanal and handicraft activities (such as weaving, sculpturing, tannery, blacksmithery, metal works, wood works and masonry), the generality of the rural workforce are agriculturists (farmers, fisherfolk and herdskeepers). However, as mentioned earlier in this paper, the overriding population of rural adult agriculturists is not reflected in their productivity level which, as also explained earlier, is usually low. In effect, poverty in the rural areas of Nigeria tends to be endemic, whether considered on the basis of GDP/GNP per capita or on the basis of Human Development Index. One is therefore not surprised that the International Fund for Agriculture (IFAD) recently (IFAD 2016) recorded that the number of rural poor in Nigeria by 2014 was 50,010,839 out of a total rural population of 94,165,210 (see also Indexamundi, 2015). In other words, 53.1% of the rural population in Nigeria were identified as poor by 2014.

In the light of the above indices, it would be stating the obvious to say that any move to use the rural workforce to turnaround the current national economic crisis in Nigeria would require massive reorientation of the rural workers and remarkable investment in inputs and factors of production.

3. The Structure of Rural Socio-Economic Development Strategies in Nigeria

Since Nigeria's Independence in 1960, successful governments of the country (federal, state and local) have attempted, in varying the degrees, to adopt one form of rural socio-economic transformation or another. Kumar (1979:218) has described the structure of rural development in the Regions of Nigeria just before independence as follows (except words in brackets which are the present author's):

The eastern region built on the Udi experience (of achieving success through a contiguous association of literacy and community development programmes). The western region borrowed the idea of farm settlements from Israel (an idea which had earlier been adopted by the east), while the northern region had a far-reaching programme of 'public enlightenment' which emphasized community development, literacy and women's education. Agricultural extension throughout the country was linked with research by the Federal Government and by the universities. The churches also took an interest in rural betterment; the Catholic Church (dealt) with women's club work stressing health and nutrition, while the Protestant *Faith and Farm* worked in the eastern region and the mid-west...

Since the creation of states in the 1970s, rural socio-economic development in Nigeria has proceeded through a greater variety of government programmes mounted in response to the preferences and particular circumstances of individual states. Generally, however, the emphasis on agricultural extension and community development training projects has been in the centre of these programmes. University departments in the country which ran courses in agriculture and health initiated various schemes to guide the rural education and development programmes. Majority of such university schemes concentrated on the training of youths in improved agricultural methods and the encouragement of farm settlements. Progressively, the schemes incorporated training programmes for the production of community development workers who, after the orientation period, were posted to villages to assist rural inhabitants in the area of literacy and various agricultural and health improvement programmes. Such trained Extension Personnel also served as links between the rural dwellers and the ministries involved in the rural development projects.

Between 1985 and 1993, the Federal Military Government, headed by General Ibrahim Babangida, came up with a more comprehensive programme for the improvement of life and living conditions of the rural populace. Apart from introducing health and capital formation programmes (such as the Expanded Programme on Immunization and rural agricultural loan programmes), the Federal Government created (and also directed states to create) a Directorate for Food, Roads and Rural Infrastructure. Each Directorate was charged with the responsibility to construct, according to needs, dams and water boreholes, and to provide rural electricity under terms that sometimes required the rural communities to provide a certain percentage of the cost of a given project (counterpart fund). There were also schemes for rural housing and small-scale industries. The objective of those rural development programmes, apparently, was to improve the general social and economic conditions of the rural areas.

In more recent times, socio-economic development strategies in Nigeria have included Rural Electrification Schemes (illustrated in plate 1 below) to encourage establishment cottage industries, as well as Credit Schemes to Small and Medium Enterprises (SMEs) for improved productivity in farming and other rural occupations. The latter has led to, among other developments, a smattering of noticeable mechanized agricultural processes and outcomes (see plates 2 & 3 below).

Plate 1: Rural Electrification in Nigeria



Source: silverbirdtv.com

Plate 2: Mechanized process of Rural Agriculture in Nigeria



Source: africonomic.com

Plate 3: Large-Scale Farming: an Outcome of Mechanized Process of Rural Agriculture



4. Nigeria's Current Economic Challenges

Fossil oil (petroleum) was discovered by Shell- BP in Oloibiri in Nigeria's Niger Delta in 1956, four years before the exit of the colonial administration of the country. Between 1960 (when Nigeria got here independence from Britain) and 1969, exploration and exploitation of oil were basically at the minimal level. At the end of the Nigerian civil war in 1970, which coincided with high global rise in oil price, the country began to harness instant riches from her oil. She thus joined the Organization of Petroleum Exporting Countries (OPEC) and established the Nigerian National Petroleum Company (NNPC) in 1971 (NNPC, 2016). Ever since, petroleum production and export have played a dominant role in Nigerian economy – accounting for over 90% of her gross earnings. Agriculture which, before 1970, was the traditional main stay of the Nigerian economy (with great earnings from palm oil, rubber, poultry, groundnut, cocoa and so on) was gradually neglected to the ultimate point of providing less than 10% of the country's earnings. This situation was also true of some other products of rural areas like fish and hides and skins.

Unfortunately, the oil boom of the 1970s was accompanied by serious mismanagement of accruing income through imprudent importation of consumable products, massive growth of an informal sector, corruption and 'capital flight', among other non-economic growth factors. In 2014, the United States of America (one of Nigeria's major oil importers) announced a reduction in her purchase of crude oil from Nigeria. This significantly lowered Nigeria's oil revenue from about 150 to about 87 US dollars per barrel. Again, in the face of emerging moves to discover alternatives to fossil fuel, Nigeria has consistently experienced low oil price which currently (in the fourth quarter of 2016) revolves around 50 US dollars per barrel as against between 145 and 150 dollars per barrel in the 1980s.

5. Nigeria's Current move for Diversification of her Economy through Enhanced Rural Agricultural and other Productivity Processes

The adverse impact of the economic monoculture in Nigeria, fueled by excessive dependence on oil revenue, has now been painfully realized by the country. The Federal Government especially is currently ruminating on how to revamp the agricultural sector and other productive areas hitherto regarded as purely rural undertakings. Although agriculture has suffered neglect over the years of oil boom, nonetheless, the sector is known to still account for over 26.8% of the GDP and two-thirds of employment in Nigeria. (Wikipedia, 2016). Howbeit, the setback experienced in the agricultural sector alone over the years has been succinctly described as follows (Wikipedia, 2016:4):

Nigeria is no longer a major exporter of cocoa, groundnuts (peanuts), rubber, and palm oil. Cocoa production, mostly from obsolete varieties and overage trees, has nevertheless increased from around 180,000 tons annually to 350,000 tons. A dramatic decline in groundnut and palm oil production also has taken place. Once the biggest poultry producer in Africa, corporate poultry output has been slashed from 40 million birds to about 18million. Import constrains limit the availability of many agricultural and food processing inputs for poultry and other sectors. Fisheries are poorly managed. Most critical for the country's future, Nigeria's land tenure system does not encourage long-term investment in technology or modern production method and does not inspire the availability of rural credit.

On 6th October, 2015, the incumbent President of Nigeria, Muhammadu Buhari, during a meeting with a delegation of French Investors, declared that his administration would enact new policies to diversify Nigeria's

economy from oil to non-oil sectors, such as agriculture, mining and manufacturing (Nwabughio, 2015). This declaration has since been followed by various suggestions on how best to effect the diversification. The suggestions include mechanization, massive use of inputs like fertilizers and employment of jobless graduates to expand farm and product sizes. Domestic manufacturing too would involve government support of local (especially rural) workers to produce more for export to increase Nigeria's GDP and foreign exchange earnings. In all, it has been stressed that there should be, among other strategies, emphasis on agriculture and rural socio-economic development to consolidate existing initiatives in ensuring food security and export possibilities, particularly in cassava, rice production, textiles, hides and skins, cash crops, livestock and vegetable oil (Embassy of the Federal Republic of Nigeria, Washington D.C., 2016). Put in other words, Nigeria's current move towards economic diversification obviously recognizes rural socio-economic development as a pedestal for its success.

6. The Need for Environmental Adult Education to Sustain the Pro-Rural Socio-Economic Development Strategy for Nigeria's Economic Diversification

The above highlighted turnaround by government towards improvement of rural agriculture and other rural production processes obviously would require a number of changes/modifications in the processes of rural productivity which would include, among other things:

- i. The use of chemicals (different types of fertilizer) to enhance production of root crops (like yams, cassava, potatoes) and vegetables (eg. cabbages, lettuce, cucumber) to the level of export;
- ii. Mechanization of agriculture for large-scale farming and production of foods for local consumption and export;
- iii. Improvement of aquaculture (including dredging of artisanal waters and use of more modern fishing gear) to increase fish production to further ensure food security and export;
- iv. Review of the various land tenure systems existing in Nigeria to provide large expanses of lands for mechanization of the various forms of agriculture being proposed for economic diversification;
- v. Introduction of new processes of livestock production to obviate current/ongoing rifts and fighting between farmers and migrant herdsman all over the country and to enhance processing of dairy products;
- vi. Establishment of agro processing industries.

The above and other related necessary changes/modifications in rural agriculture and other productive processes for rural socio-economic development and reversal of Nigeria's economic downturn have implications for rural worker health and education and for the protection/conservation of the rural environment and resources for sustainability of the planned socio-economic development and productive processes. These implications arise in the light of the following:

- i. The high level of illiteracy among rural workers (farmers, artisans, fisher folk, herdskeepers) and other demographic characteristics of the rural adult population (who constitute the hub of rural workforce) which, as discussed earlier here, limit the inputs and outputs (including GDP) of the rural workforce;
- ii. The fact that the planned modes of accelerating productivity in rural agriculture and other forms of economic diversification involve application of innovative inputs (chemicals, improved species of crops, animals and fish) and processes (mechanization and manufacturing) which require awareness creation, education and training to enhance the capacity of the rural workforce;
- iii. The possible adverse effects of fertilizers and the mechanization processes on human health, the soil and the entire ecosystem through various types of pollution, deforestation and general environmental degradation that may accompany the processes.

Eheazu (1983) discussed various types and aspects of the educational needs of rural Nigerian workers. He first outlined the needs as follows (Eheazu, 1983:11-13):

Rural Worker Groups	Types of educational needs (at varying levels of sophistication and specialization)
1. Agriculturalists: (a) Subsistence farmers (b) Commercial farmers (c) Landless farm workers	<ul style="list-style-type: none"> • Farmer planning and management; rational decision-making; record keeping; cost and revenue computations; use of credit facilities • Application of new inputs and varieties of improved farm practices for greater yield. • Storage, processing and food preservation. • Supplementary skills for farm maintenance, family improvement and sideline engagements for extra income.
2. Artisans People engaged in (a) tannery (b) carving (c) weaving (d) sculpturing (e) blacksmithery (f) metal works (g) masonry, etc.	<ul style="list-style-type: none"> • New and improved technical skills applied to particular engagements for increased productivity. • Quality control. • General skills for promoting and marketing products.
3. Both agriculturalists and Artisans	<ul style="list-style-type: none"> • Knowledge of existing government services, policies, programmes and targets. • Family improvement knowledge (e.g. health, nutrition, family planning, child care, home economics). • Knowledge of how co-operative movements, local, state and national governments function especially in relation to the individual rural worker's interest.

Much as the above articulation is still relevant to our concerns in this paper, nonetheless, the nature and implications of the new capacity demands on the Nigerian rural worker to fit into the present national desire to diversify and resuscitate the economy calls for a more encompassing educational programme which, in addition to what has been outlined above, begs for environmental education of the rural adult workforce.

Environmental Adult Education, for our purpose here, could be defined as a conscious process of creating awareness among rural workers (who are predominantly adults) of the possible hazards to human health and the environment (including ecosystemic imbalance as in plates 2 and 3 above) occasioned by adopting the essentially new modes of production in the quest to accelerate and extend the scope of productivity in agriculture and other rural livelihood assets. Development of appropriate skills for applying the new and innovative techniques safely and the pre-knowledge of the probable outcome of any mistakes in the process would equally be part of the environmental education programme. In all, sustainability of the resources and processes for obtaining the desired massive outputs needs to be emphasized to ensure that the non-oil resources employed to achieve economic diversification, stability and growth are regenerated through conservation, reforestation and afforestation among other approaches. The introduction of conservation agriculture, for instance, would need to be considered. In the light of the generally low level of education of the rural workforce and the urgency of the demand for knowledge on them, nominal environmental literacy (Ehezue, 2013) should be inculcated in the workforce through non-formal and informal means, using andragogy (involving the adults' participation in the learning process and thus facilitate their learning) rather than pedagogy (the usual process of teaching and imparting knowledge to infants and adolescents).

In addition, the rural workforce need to be made aware of the health risks in improper application of fertilizers and other chemical inputs on farms near their homes. They need to know, for instance, that nitrous oxide from the fertilizers could pose serious health challenges to homesteads surrounded with farms (as in plate 4 below) through air and water pollution.

Plate 4: Application of Fertilizers on Crops
around a Homestead



Source: [https://i.onthe.io/vllkyt6ettaahedrms.
ff8ae624.jpg](https://i.onthe.io/vllkyt6ettaahedrms.ff8ae624.jpg)

7. Summary and Conclusion

Before her independence in 1960 and up to 1969, Nigeria based her socio-economic development on non-oil (fossil fuel) products. Rural agriculture was the pillar of the economy and source of food security and foreign exchange revenue. The discovery of oil in 1956 and the explorations and exploitation of the commodity did not change the country's reliance on such products as palm oil, cocoa and groundnuts as her major exports. Regrettably, the astronomical rise in global oil (petroleum) price in the early 1970s lured Nigerians into gradual neglect of their age-old agricultural and other products that provided food and foreign exchange. Progressively, the country adopted economic monoculture of virtual total dependence on oil revenue. It engaged in massive and imprudent importation of food and various consumables among other uneconomic practices. Consistent dwindling of the revenue from oil since the mid-1980s did not seem to matter to various successive Nigerian governments until recently (the second quarter of 2016) when economic recession hit the country and forcefully jolted her leaders to urgently consider ways and means to diversify the economy and come off the downturn. The present Federal Government has now turned its attention to rural agriculture and occupations/careers to bail the country out of her economic doldrum. Speedy and large-scale production in the said sectors are being encouraged. Mechanization, manufacturing, use of harvest multiplication inputs (like fertilizers and new species of crops) are being favoured as avenues to achieve the urgently needed massive output for food and economic security.

Given (as clearly detailed in this paper) the generally low education level of the rural workforce in Nigeria (made up of mainly adults) and the real and deleterious adverse effects of the new modes of large-scale production on human health and environment, the need for sustainability of human and material resources involved, and in view of the explanations given on the subject of this paper, it would be pertinent to conclude that environmental adult education occupies an indispensable place in the necessary orientation of the rural workforce towards meeting the national target of urgent economic revival and advancement.

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