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IN THE SOCIAL SCIENCES
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SOME FUNDAMENTAL TOPICS

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CHAPTER 16

SUSTAINABLE DEVELOPMENT IN NIGERIA: PROSPECTS AND CHALLENGES

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16.1. Introduction

In the 1980s, the interrelationships between the environment and socio-economic issues of poverty and underdevelopment became more apparent and difficult to ignore. Subsequently the concept of sustainable development emerged in response to this growing realisation of the need to balance economic and social progress with the concern for the environment and the stewardship of natural resources. This led to the publication of "**Our Common Future**" by the World Commission on Environment and Development (WCED) in 1987, in which sustainable development is defined as "a process in which the exploitation of resources, the direction of investments, the orientation of technological development, the institutional changes are all in harmony and enhance both current and future potentials to human management and systems thinking requiring creativity, flexibility and critical reflection".

Stiglitz (1998) introduced the concept of structural transformation to the definition of development by saying that:

"Development represents a transformation of society, a movement from traditional relations, traditional ways of thinking, traditional ways of dealing with health and education, traditional methods of production, to more 'modern' ways.... The changes that are associated with development (that) provides individuals and societies with more control over their own destiny....and (that) enriches the lives of individuals...."

Sustainable development connotes the ability to keep going and keep up the progress made in the social, economic and ecological segments of the society without making the future generation worse off. In the words of Brundtland (World Bank, 2003), development is sustainable if it "meets the needs of the present without compromising the ability of future

generations to meet their own needs". Among all other definitions, that of Soubotina appears the most comprehensive. To Soubotina (2004), for development to be sustainable, it should balance the interest of different groups of people, within the same generation and among generations, and do so simultaneously in the economic, social and the environmental dimensions of life. In essence, sustainable development is anchored on three pillars of sustainability: environment, economy and society (social and cultural) (Ogunyemi, 2005). The socio-economic-ecological framework in Figure 1 depicts the consonance among social, economic and environmental dimensions of life showing some specific areas of human life that must be taken into consideration for development to be sustainable (Babatunde, 2013).

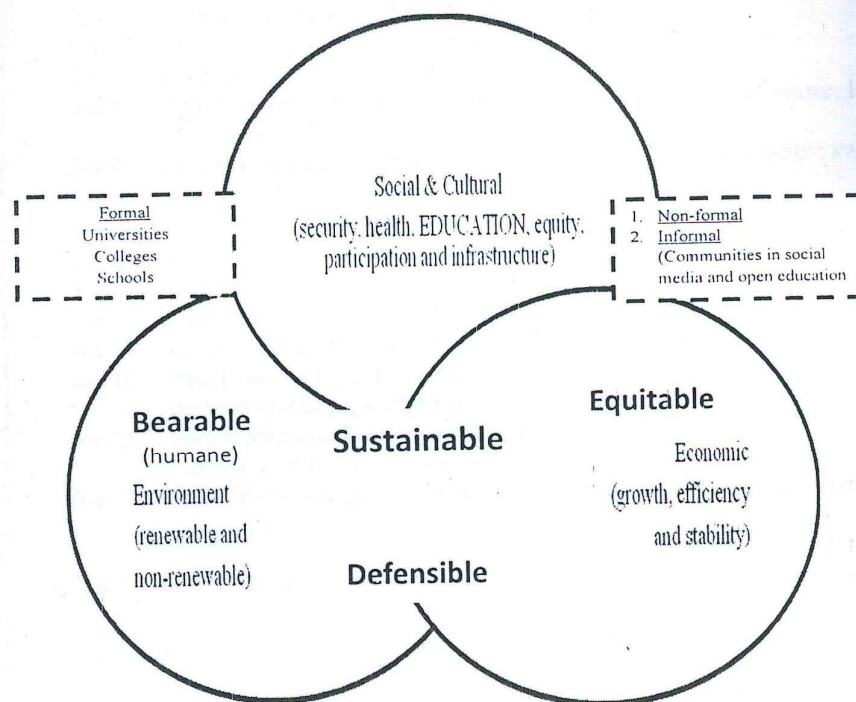


Figure 16. 1: Sustainable Development (Socio-economic-ecological framework)

There are four principles or conditions of sustainable development (SD) accompanied with associated educational skills for attaining them (UNESCO, 2003). The first condition is "recognition of the challenge": this requires skills in "learning to know". Secondly, SD demands "collective responsibility and constructive partnership": the skill needed here is "learning to live together". The third condition for attaining SD is "acting with determination: this calls for skills in "learning to do". The last principle of SD is "the indivisibility of human dignity": with the educational task of "learning to be".

Sustainable Development Goals (SDGs) that were launched in 2015 are also good yardsticks in determining the prospects of sustainable development in Nigeria. SDGs are extension of

the Millennium Development Goals (MDGs) that ended in 2015. Unlike the MDGs that has eight goals, SDGs has seventeen goals with a deadline of achievement put at 2030. The Goals are shown in Table 1.

Table 16. 1: Sustainable Development Goals (SDGs)

Goal No.	Sustainable Development Goals 2030
Goal 1	End poverty in all its forms everywhere
Goal 2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Goal 3	Ensure healthy lives and promote well-being for all at all ages
Goal 4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
Goal 5	Achieve gender equality and empower all women and girls
Goal 6	Ensure availability and sustainable management of water and sanitation for all
Goal 7	Ensure access to a affordable, reliable, sustainable and modern energy for all
Goal 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
Goal 9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
Goal 10	Reduce inequality within and among countries
Goal 11	Make cities and human settlements inclusive, safe, resilient and sustainable
Goal 12	Ensure sustainable consumption and production patterns
Goal 13	Take urgent action to combat climate change and its impacts
Goal 14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development
Goal 15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
Goal 16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
Goal 17	Strengthen the means of implementation and revitalize the global partnership for sustainable development

Source UNDP, (2016)

These SDGs are also succinctly captured in graphical forms as shown in Figure 2 below.



Figure 16.2: The Sustainable Development Goals (SDGs) of the United Nations (UN, 2016).

The goals of Sustainable development are to be achieved by:

- promoting sustained inclusive and equitable economic growth;
- creating greater opportunities for all;
- eradicating inequalities;
- raising basic standards of living;
- fostering equitable social development and inclusion;
- promoting integrated and sustainable management of natural resources;
- promoting an ecosystems that supports economic, social and human development;
- and
- facilitating ecosystem regeneration and restoration and resilience in the face of new and emerging challenges.

Lastly, the notion of sustainable development also include the theme of inter-generational equity which involves the following:

- development that meets the needs of the present generation without compromising the ability of future to meet theirs;
- ensuring equitable consciousness in consumption patterns of generational resource and developmental exploitations to prevent untold or negative consequences in the utilization of same resources by future generations;
- sustainable use of natural resources, implying replenishing and precautionary use of earth's resources to avoid depletion;
- intra-generational equity which include equitable utilization of shared resources; and
- principle of integration which stipulates environmental considerations are integrated into the developmental objectives of the state.

16.2. Objectives of the work:

At the end of the lecture, the students should be able to:

1. understand the concept of Sustainable Development (SD);
2. state the 17 SDGs as defined by UN;
3. understand the three pillars of SD;
4. identify and know the roles of agencies and organisations responsible for entrenching SD in the Nigerian polity; and
5. understand how the implementation of SD goals can promote growth and development in Nigeria.

16.3. The Environmental (Ecological) Dimension of Sustainable Development

The Oxford Advanced Learners Dictionary defines environment as “condition, circumstances, influences etc. affecting people's lives”. Udia (2003) refers to the environment as the “sum total influence, which modifies and determines the development of life and character”. It is the complex of physical, chemical and biotic factors that act upon an organism or an ecological community and ultimately determines its form and survival. This embodies the entire atmosphere and biosphere. The atmosphere is the layer of gases which envelopes the earth, while the biosphere is a thin layer of solids, water, and air in which all lives exist. The natural and built environment embodies all the land features, land uses, associated infrastructure, and recreational space which enhance the people's standard of living.

Since the industrial revolution beginning from the 18th century, which led to an unprecedented exploitation of raw materials, there has been a global concern to balance human quest for development with the need to preserve the environment from which the resources which fuel it are extracted. It is the further entrenchment of this concern that led to the concept of 'Sustainability'. The idea is to ensure that anthropogenic activities aimed at achieving specific development goals do not hinder the ability of the environment to continue to support life and supply raw materials for future development.

Sustainability as a concept literally implies the ability of a system to continue itself perpetually or for a long time (Encarta Dictionary, 2009). The Encyclopaedia (2006) views it as a systematic concept, relating to the continuity of economic, social, institutional and environmental aspects of human society, as well as the non-human environment. Dunster and Dunster (1996) defined sustainability as the ability of an ecosystem to maintain ecological processes and functions, biological diversity, and productivity over time. According to Zwahler (1995), sustainability is the equitable inter-generation sharing of resources to provide for the needs of today without disadvantaging future generations. Sustainability is intended to be a means of configuring civilization and human activity so that society, its members and its economies are able to meet their needs and express their greatest potential in the present, while preserving biodiversity and natural ecosystems, and planning and acting for the ability to maintain these ideals in a very long term.

The concept of sustainability is invariably related to the term “Sustainable Development”. Both terms are often used interchangeably, and relate closely to the same goals. The term “Sustainable Development” was adopted at the Agenda 21 programme of the United Nations following the Conference on Environment and Development (Earth Summit) held in Rio de Janeiro, Brazil in 1992 (UNCED, 1992). According to Mamman (1996), the concept of sustainable development has its origin in the report of the Club of Rome titled “*Limits to*

Growth” published in 1972. This report by the Club of Rome was the first to consider the links between global economic growth and natural resource scarcity. In particular, the author of the report put forward a “world model” looking at the viability of continuous growth. This consideration was in many ways connected with the publication by Ward and Dubos (1972) of their book “*Only One Earth*”.

Drawing from the above-mentioned books and reports, as well as the charge of the United Nations to the Stockholm Conference on Environment in 1972, was the need to define in unmistakable terms what should be done to maintain the earth as a place suitable for human life not only now, but also for future generations. Thus, Brundtland (1987) in the World Commission on Environment and Development (WCED) report of 1987 titled “Our Common Future” defined sustainable development as development that “meets the needs of the present generation without compromising the ability of future generations to meet their own needs”. Barrow (1994) also defined sustainable development as any activity that raises social welfare with the maximum amount of resource conservation and the minimum amount of environmental degradation, allowable within given economic, social and technical constraints. The 1995 World Summit on Social Development (WSSD) further defined this term as “the framework for our efforts to achieve a higher quality of life for all people in which economic development, social development and environmental protection are interdependent and mutually reinforcing components”.

It is commonly viewed that development and environmental issues are inversely related, in that developmental drives consciously or unconsciously lead to over-exploitation of natural resources. However, the Earth Summit in Rio posited that integration of environment and development concerns and paying greater attention to them will lead to the fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future. In furtherance to this idea, the 2002 World Summit on Sustainable Development in Johannesburg identified three objectives of sustainable development to include: (1) eradicating poverty; (2) protecting natural resources and; (3) changing unsustainable production and consumption patterns.

In view of the foregoing, the concept of sustainability and/or sustainable development is viewed as a positive concept that has as much to do with achieving well-being for people and ecosystems as it has to do with reducing stress or impacts. Therefore, several authors have pointed to various practices and philosophies in the world today as being harmful (Zhao *et al.*, 2005; *Dohrenbusch*, 2006). Zhao *et al.* (2005) posited that the philosophy of infinite economic growth and infinite growth in consumption are completely unsustainable and will cause great harm to human civilization in the future. Thus, in recognition that the earth is finite, there has been a growing awareness that there must be limits to certain kinds of human activity if life on the planet is to survive for the foreseeable future.

Since the 1992 United Nations Conference on Environment and Development (UNCED), otherwise called the Earth Summit, in Rio de Janeiro, Brazil, there have been extensive efforts to operationalize sustainable development by governments and other stakeholders. These include the Johannesburg Plan of Implementation (JPOI), the United Nations Millennium Declaration or Millennium Development Goals (MDGs), the United Nations Framework Convention on Climate Change (UNFCCC), United Nations Convention on Biological Diversity (UNCBD), United Nations Convention to Combat Desertification (UNCCD) in those countries experiencing drought and/or desertification, particularly in Africa, and non-binding targets of the Forestry Principles. In 2015, the new

global agenda for sustainable development (i.e. the sustainable development goals- SDGs) was also agreed to (Table 16.1 and Figure 16.2).

16.4. Environmental Sustainability in the Nigerian Context

There are three pillars of sustainable development: economic, social and environment (Figure 16.1). The economic and social pillars are discussed in the subsequent sections. With respect to the environment, the Nigeria National Environment Policy of 1999 is a key policy document that stipulates the principles for environmental sustainability for sustainable development in Nigeria. The policies and programmes under broad categories of the environmental pillar are related to forestry, biodiversity, pollution control, land degradation, water management, climate change, marine and coastal environment, clean energy, and environmental crime. Specific agencies have been created to provide more focussed attention to some specific environmental issues. They include the *National Oil Spill Detection and Response Agency* (NOSDRA) and *National Environmental Standards and Regulations Enforcement Agency* (NESREA), which were created respectively in 2006 and 2007 respectively.

NOSDRA has the mandate to implement the national oil spill contingency plan. NESREA has responsibility to enforce all environmental laws, guidelines, policies, standards and regulations in Nigeria, as well as enforce compliance with the provisions of all international agreements, protocols, conventions and treaties on the environment to which Nigeria is a signatory. From 2007 to 2012, NESREA has developed twenty four Environmental Regulations which have been gazetted and are in various stages of operationalization. These regulations have key provisions for environmental control, clean-up and remediation. Other institutions include the Forestry Research Institute of Nigeria (FRIN), the Nigeria National Parks Service (NNPS), and Environmental Health Officers Registration Council of Nigeria (EHORECON). FRIN is mandated to conduct research into all aspects of Forestry, Wildlife Management, Agro-forestry and Forest Products Utilization; as well as train technical and sub-technical personnel for the forestry and agro-allied services in the country through its colleges. The NNPS has a mandate to preserve, enhance, protect and manage vegetation and wild animals in the National Parks, while EHORECON is charged with the responsibility of regulating Environmental Health profession in the country.

Despite the above-mentioned efforts, the key environmental issues facing Nigeria can be captured broadly in terms of land degradation and air and water pollution. Much of Nigeria's arable land is being sapped insidiously of its productive potential through overuse and inappropriate technologies. Rapid deforestation, resulting from unsustainable use of forest resources for human survival is a major contributing factor to land degradation. The end result of deforestation and other agricultural activities, including intensive grazing, over-ploughing and over-cultivation, is severe land degradation, usually referred to as desertification, particularly in the northern part of the country.

Fossil fuel use, particularly oil and gas exploration, has also aggravated the problem of ecological damage in the Niger Delta region of the country. Similarly, indiscriminate, inappropriate, and illegal mining of mineral resources in many parts has left some areas of the country bare and unproductive. There is a growing concern about air and water pollution,

associated with continued urbanization and industrialization in the country. Nigerians in general are increasingly being exposed to the hazards of highly polluted gaseous and dust emissions from industries and vehicles and dangerous industrial wastes that are constantly being discharged into the environment (Oladipo, 2008).

Natural and human-made threats, socio-cultural problems as well as direct and indirect consequences of socio-economic development, have contributed to the erosion of biodiversity at all levels. Within the last 30 years, about 43 percent of the forest ecosystem has been lost through human activity. Close to 96 percent of the original 20 percent forest cover has been cleared and only 2 percent of what remains is undisturbed. This has resulted in massive loss of the very rich and diverse forest flora and fauna, including indigenous tree species. Large parts of the savanna are also being ravaged by man-induced desertification, causing ecosystem impoverishment and biodiversity loss. It is estimated that 0.4 percent of the plant species are threatened and 8.5 percent endangered, with 0.14 percent of the animals and insects threatened and 0.22 percent endangered. In addition, about 10-12 species of primates are threatened (Environment and Sustainable Development Report, 2009).

Flooding is a common occurrence in many parts of Nigeria. Generally, floods result mostly from heavy and high intensity rainfall, coupled with poor watershed management. Human activities such as unplanned rapid urbanization, blockage of river/drainage channels, land clearing for agricultural purposes, poor dam construction and deforestation all contribute to flooding. Erosion from flooding results in the depletion of farmlands, loss of forest resources and reduction in agricultural outputs. It also results in loss of land resources for other developmental purposes, destruction of properties and social amenities, as well as loss of lives.

The total dependence of manufacturing industries on diesel-powered electric generators is the main driving force of air pollution in major industrial centres in Nigeria. In 1998, FEPA reported that the air pollution load for Lagos state industries was about 51,800 metric tonnes, consisting of sulphur dioxide (37.6%), nitrogen oxides (31.5%) and particulates (26.5%). Although many of the industries have closed down, pollution has by no means abated as those functioning still rely entirely on diesel-powered generators and the country has witnessed a tremendous upsurge in the number of automobiles and commercial motorcycles on our roads and streets as well as electric generators in homes and offices. These contraptions have become the new and widespread sources of pollution in Nigeria. The major pollutants from automobiles, motorcycles and electric generators are carbon emissions into the atmosphere, expended oil and battery acid, which are dumped haphazardly within and on the outskirts of towns and excessive noise from all the three. It has been estimated that about 80 million litres of used crankcase oil from mechanic workshops, industries, power stations and commercial houses are dumped directly into drains and ground surfaces in urban centres. Studies elsewhere have identified excessive exposure to noise as detrimental to the neuro-endocrine, cardiovascular, respiratory and digestive systems. In addition chronic exposure to noise has been found to cause fatigue, reduced concentration and work efficiency.

Pollution from oil exploration activities in the Niger Delta remains of concern. Oil spills from leaking underground pipelines and storage tanks are a regular occurrence, rendering vast tracts of land and water bodies unproductive in the region. NOSDRA recorded in the first half of 2007 a total of 424 spill incidents involving 33,799 barrels of oil. Of these spill

ncidents 196 were due to equipment or operation failure, 143 were caused by sabotage while he sources of the remaining 85 were in contention. As well, pollution from gas flaring goes on daily because the flare-free deadline set by government has been postponed four times. The resultant heat stress and acid rain continue to degrade the ecosystem.

n Nigeria, waste is indiscriminately disposed without control, such that solid waste dumps of the urban landscape. In fact only about 30-50% of waste in Nigeria is collected (Osibanjo, 2008). It has been estimated that by the year 2000, Lagos metropolis alone will be generating about 998,081 tonnes of solid waste per year. Another estimate indicate that the total amount of domestic waste per annum in Nigeria is about 63million tonnes (1.45kg/capital/annum)(Osibanjo, 2008). Many of the urban areas in Nigeria are yet to have effective system of refuse collection. As a result, most urban households resort to open dumping of refuse, although a few engage private refuse collectors or burn or bury solid waste. The common arrangement, in the very few urban communities where a system is in place, is for waste management authorities to collect refuse from households and public containers on a regular basis. In general, the volume of solid wastes is overwhelming urban administrators' capacity to plan, evacuate and dispose wastes.

an emerging and rapidly growing source of pollution is e-waste from developed countries being dumped in Nigeria. This form of waste consists of old computers and other electronic gadgets which are laced with deadly chemicals and toxins. The poor regularly sort through waste dumps to scavenge for anything they could sell and so unwittingly expose themselves to toxic hazards and health risks.

Scenario analysis for Nigeria by the Climate Systems Analysis Group at the University of the Town using statistical downscaling method to extrapolate the empirical data of about meteorological stations in the country (BNRCC, 2011) suggest trends towards a warmer climate in the future. The report indicates a 2.0–2.2°C increase from south to north for the period 2046–2065, with a much more rapid increase in the range of 3.5–4.5°C at the end of 21st century. An inverse relationship between temperature increase and rainfall increase in the country in the two periods considered was also predicted. Overall, starting with no change in the extreme north-eastern part of the country, rainfall is expected to increase by a small range of 0.2–0.4mm/day from the central part to the southern portion of the country by the end of this century, with some expected marked spatial variations. A study by D (2009) predicts a possible sea level rise from 1990 levels to 0.3 m by 2020 and 1m by 2050 for the country.

1 Addressing Development Challenges in the Environment Dimension in Nigeria

One of the main challenges of environmental sustainability is the production of food to meet needs of the growing population while minimizing the clearing of land for agriculture. Heavy dependence on chemical pesticides and fertilizers, particularly in the northern part of the country. Others are unsustainable use of natural resources, and inability to meet the rapidly growing energy needs of present and future population. There is also a direct link between environmental resource exhaustion and population pressure. There is also a direct link between poverty and environmental resource depletion, thus with increasing impoverishment of people, achieving environmental sustainability could be a phantasm. From their inherent consequences, the challenges of environmental sustainability are likely to derail the national path to sustainable development if left unchecked. Therefore, there is a need to identify opportunities for dealing with the myriad of

environmental issues in the quest for sustainable development.

Effective environmental governance is critical for sustainable development, and Nigeria has an impressive policy documents and guidelines in this regard. For instance, the National Environmental Sanitation Policy, the National Environmental Standards Regulatory and Enforcement Agency (NESREA), and Policy Guidelines on Solid Waste Management, among others. What is required is full implementation of the provisions of these policy documents and guidelines and full empowerment of the various agencies in charge

Furthermore, Nigeria is blessed with abundant resources. It is a country with vast land resources containing rich, arable soils of various kinds while there are various forest species that can be planted in afforestation programmes in order to regain the country's forest cover loss. There is a full-fledged Forest Research Institute of Nigeria (FRIN) which has conducted various researches on forest production, the findings of which could be useful. What is required is the political will to invest in afforestation schemes.

Apart from this, Nigeria has a total water resource estimate of 267.3 billion cubic meters. It has surface water resource estimate of 26.7 billion cubic meters and ground water resources estimate of 51.9 billion cubic meters (Federal ministry of Water Resources information profile, undated). The Water Supply Master Plan prepared in 1995 puts water requirement for the country by 2015 at 16.9 billion cubic meters with irrigation requiring 13.5 billion cubic meters and water supply requiring 3.4 billion cubic meters. This means the country has more than enough water resources to meet the needs of the population if well managed. Again, what is required is to curb corruption in the implementation of various projects and ensure fairness and equity in the location of water projects.

16.5. The Social (Socio-cultural) Dimension of Sustainable Development

The socio-cultural aspect of sustainable development focuses attention on the people and seeks to maintain a stability of social and cultural systems, including the reduction of destructive conflicts (Munasinhe and McNeedy, 1995). It must be realised that the global system is largely made up of smaller units of local home environments. The foundation of sustainable development lies in the idea that people or social groups can and will alter their environmental ethics when they realise that it will make things better. The assumption is that such people and social groups can work together for common goals when there is need for such. Socio-cultural aspects of sustainable development relate to protecting and making rational use of available natural and human resources. This further implies conserving resources for development. These efforts would increase and guarantee human welfare of present and future generations. It would also imply increasing human welfare and prevent the destruction of the world's ecosystem capacity to support life.

More than ever before, there is a great awareness on sustainable development among most nations of the world today and their people. This awareness started since the Brundtland Report and the Rio de Janeiro World Conference on Climate Change in 1992 and the drawing of the Charter on Millennium Development Goals (MDGs). The failure to meet the target of these goals has led to a renewed focus on the Sustainable Development Goals (SDGs).

Generally, sustainable development occurs when the outcome of development efforts meets the needs of the present generation without endangering the ability of the future generations to meet their own needs. Consequently, it is expected that critical obstacles that impede the realisation of such goals must be removed so as to ensure sustainability. These obstacles

include poverty, inequality, social conflict and environmental degradation. The key socio-cultural issues include: education, health, security and gender equity.

16.5.1. Education and Sustainable Development

Education is commonly thought of as denoting a formal, conscious, systematic training. The emphasis of education is both on teaching and learning as the process involves the active participation of both the teacher and the learner. The provision of education to the people is widely acknowledged as one of the cardinal objectives of development. No wonder then that most nations of the world today, aspire to fulfil the realisation of this objective by making practical efforts to provide functional education to their citizens.

Forms of Educational systems

Scholars have identified two broad types of educational systems namely:

- (i) **Formal education**
Formal education involves the transfer of knowledge through systematic and organized ways usually in institutions. Formal education takes place in different stages right from the elementary to tertiary stage. The forms of education in these institutions are based on designed curricular and have designated years for each level.
- (ii) **Informal education**
Informal education includes all non-formal means of disseminating knowledge and skills to people usually in non-organised forms. Informal education has existed across societies since the dawn of civilization. However, in recent times, informal education has come to include the activities of social media (print and electronics) as well as channels of open education. Essentially, informal education provides educational opportunity to individuals who do not have access to formal education. Again, through informal education, some critical segments of the population (such as the elderly, working class, etc) have the opportunity to acquire knowledge.

Education exists primarily for the purpose of preserving both social and cultural achievements of a group within a specific society. Education is therefore an important tool for sustainable national development as demonstrated in the following ways:

1. **Completing the socialization process:** The child gets his first contact with the society through the family which maintains an intensive and continuous relationship with him he reaches maturity. The family therefore becomes the most critical institution for the moulding of the child's behaviour. The school system helps to complete this important process by making up for the deficiencies in home training (of morals and manners). The school then perform the responsibility of transmitting those aspects of culture that are essential for competent social participation. Transmission of norms, values, beliefs and symbols found within a society. For instance, the school system emphasises on such values as diligence, obedience, personal cleanliness, punctuality, discipline, good posture, and respect for elders, among others.
2. **Transmission of specialized skills:** In pre-literate societies, "education" is carried out by the same natural process of socialization by which parents teach their children

how to walk, eat and talk. In this instance, cultural transmission is done in an unconscious manner through daily living. This form of learning does not involve education. Education involves a conscious transfer of knowledge in a formalized setting. In modern and rapidly changed world, the transmission of knowledge can no longer takes place through informal process. The reality of modern living dictates that specialized knowledge and skills are required by members for them to be able to cope with its demands. As such, contemporary society requires technical and scientific manpower which involves complex division of labour and is time-consuming and tasking. The educational system performs this role in every modern society.

3. Research and development: There is the need for the development of new knowledge to cope with the rising and complex demands of modern society. Through research activities of the school system, discoveries are made while important breakthroughs are recorded in different aspects of the society.
4. Promoting high-quality education: Education can only facilitate sustainable development if the quality is high. This effort requires solving the existing inefficiencies in the nation's educational system through:
 - (i) Introduction of stronger performance incentives to both the learner and the learned.
 - (ii) Extensive experimentation of the educational programmes.
 - (iii) Improvement in instructional methods.
 - (iv) Evaluation of the existing curricular and enriching them to meet present and future needs of the people.
 - (v) Regular teacher training programmes.
 - (vi) Decentralization of decision making on educational development.

16.5.2 Health and Sustainable Development:

Health is defined as a state of complete physical, mental and social well-being and not merely the absence of diseases and infirmity (WHO, 1986). Based on the above definition, to be healthy describes more than not having diseases or infirmity but to be in harmony with oneself and the environment. Healthiness then implies more than physical, mental and social well-being, but a harmonious condition of the body which involves the following:

- Maintenance of body balance;
- Physical and emotional balance;
- Cultural and political balance;
- Spiritual and ideological balance.

Factors affecting health

Personal/Individual Factors: These are factors that operate at the individual level and which exert influence on human health. These factors include the following:

- (a) Dietary habit/behaviour: There are three major ways by which eating behaviour can affect personal health – lack of food, insufficient nutrient and overeating. Each of these can negatively affect individual's health state.
- (b) Sexual behaviour: Negative sexual behaviour such as unprotected sex predisposes individual to a number of health risks e.g. HIV/Aids and other sexually-transmitted diseases.
- (c) Physical activities: Individuals with sedentary lifestyles (without physical activities) are prone to some health problems – cardiovascular diseases, diabetes and obesity.
- (d) Smoking and drug use: Smoking and excessive drug use constitute health risks to individuals. Stevenson (2005) cited in Ogundiya and Hamzat (2015) observed that alcoholism predisposes individuals to health risks such as heart diseases, cancer, gastrointestinal problems, neuro-cognitive deficits and emotional problems.
- (e) Social factors: Social environmental factors which include policy of discrimination against some groups within the society based on educational level, marital status and gender and other factors.
- (f) Physical environmental factors: These include place of residence, crowding condition. Physical factors also include physical hazards in the home, community and workplace, availability of safe drinking water etc.
- (g) Governmental policies: Policy on Primary Health Care (PHC), provision of health facilities and personnel, health funding etc.

It must be noted that the interaction between these factors determines the morbidity and mortality of people.

16.5.3 Security and Sustainable Development

An important aspect of sustainable development goals is the security of the people. As part of efforts to ensure sustainable development is the improvement of the living conditions of the people through improving the security of their lives. Human security programmes focus attention on the people and their communities and these include the following:

- A guarantee that the government shall secure the lives of the citizens;
- The provision of basic needs to the majority of the population- food, water and shelter;
- Employment opportunities, especially for the youth who are mostly affected;

- Prevention of insecurity caused by violent attacks by terrorists and violent groups (Boko Haram, Al-Shabab, ISIS, etc);
- Taking practical measures to forestall insecurity caused by violent attacks on innocent citizens (for instance, suicide bombings and other violent attacks by Boko-Haram in North-East Nigeria and armed militancy and kidnapping in the Niger-Delta region).
- Provision of conducive environment to the citizens so that they can be able to carry out their daily activities without hindrance.

16.5.5 Gender Equity and Sustainable Development

The SD goal number 5 (see Table 16.1 and Figure 16.2) seeks to achieve gender equality and empower all girls. There is a strong interrelationship between gender and sustainable development. These can be demonstrated in the following ways:

- ✓ The role of women in maintaining the domestic or home towards sustainable living. There is a close relationship between womanhood and the environment which is very crucial to woman's everyday living.
- ✓ In providing the basic domestic needs such as firewood, water, food and other domestic needs, women play very important role in destroying or sustaining the environment.
- ✓ Women bear the greatest brunt of the degradation of the environment and climate change, as demonstrated by the fact that they have to cover increasing distances to obtain resources such as firewood, water, food, herbs and vegetables for the use of their households.
- ✓ In most developing countries where rural economies are common and men are unable to provide sufficiently for their families, the negative effect is felt mainly by women who have to provide for the family nevertheless. They then resort to unsustainable practices such as tree-felling for firewood, and wood burning for cooking; both of which have undesirable effects on the environment.
- ✓ Women exploit natural resources such as water and firewood for their families' domestic use. Deforestation and pollution can occur due to the pressure of overexploitation on the environment.
- ✓ In Nigeria and some other developing countries, female-led households are on the increase and these types of households are known to be the poorest (Moser and Statterthwaite, 1985). Where these women are not educated and economically empowered, the consequence is that the environment is quickly degraded by their activities.
- ✓ A focus on the feminine gender for sustainable development would therefore be invaluable towards enhancing the resource value of the women. The approach would involve efforts towards sustaining the environmental resources through a break from the past habits and patterns and instil practical steps towards maintain a safe environment.

- ✓ One of such practical steps is in form of environmental education for the women where they can acquire appropriate knowledge and skills in environmental protection and management of available local natural resources such as knowledge of threatened tree species.

16.6. The Economic Dimension of Sustainable Development

The prospects of sustainable development in Nigeria from the point of view of economics is best captured from the perspective of the socio-eco-ecological framework of sustainable development as provided in Figure 1 and from the paradigm of Sustainable Development Goals (SDGs) which is an extension of the Millennium Development Goals (MDGs) that is to terminate in 2030. The economic components of the framework provide for economic growth, efficiency in the working of the economy and its stability.

Linking this to Nigeria requires a discourse on the existing state of Nigeria's economic growth, its efficiency and stability over the years. A starting point therefore, is a discourse on the key determinants of economic growth, its efficiency and stability put together. Some of the key determinants or indicators of economic growth, which in turn determine the efficiency and stability of a nation's economic growth, are:

- ✓ Gross Domestic Product (GDP), per capita income, welfare of the citizens and availability of social services, accessibility and affordability by the people to these services. Gross Domestic Product is referred to as the total output of final goods and services produced in a country during any given period of time by residents of a country irrespective of their nationality. Per capita income is the total national income divided by the population of a country. Welfare is usually determined by the increased and sustained flow of goods and services consumed by the people with the resultant effects of an increase in life expectancy at birth, reduction in infant and maternal mortality. It also involves availability as well as accessibility and affordability of social services to the people, such as, health care services, education and clean safe water (Todaro and Smith, 2011; AfDB, 2016a; World Bank, 2015).
- ✓ Macro-economic stability includes situations of low inflation, stable interest rate and exchange rate and a state of little or absence of debt overhang. The stability of these variables is vital to economic growth. For instance, low or lower rate of inflation would in the long-run provide a stable framework for long-term planning that encourages saving, investment and efficient development of resources. A steady real exchange rate would reduce risks inherited in tradable production and thus contributes to openness. Prudent fiscal policies would help increase the flow of resources into productive investments and prevent the development of a debt overhang that could frighten investors (Edwards, 1985; World Bank, 1991; Petri, 1993; World Bank, 1993; Dollar and Kraay, 2000).
- ✓ Improvement in the capabilities of the people and enhancement of their freedom which in turn depends largely on their income, the access they have to basic goods and services and human rights. The growth and equal distribution of income is one of the critical elements since it provide the access to resources, (e.g. food, education, safe water and sanitation and health care) for a decent living standard. Human rights

No.

represent the claims that individuals have on the conducts of individual and collective agents and on the design of social arrangements that facilitate or secure these capabilities and freedoms (Sen, 1985; Narayan *et al.*, 2000; Narayan *et al.*, 2000; UNDP, 2000; Adeyemi *et al.*, 2006).

- ✓ Investment in technology equips people with better tools that makes them more productive and prosperous. For instances, the internet, the wireless telephone and other information and communications technology has enable people to communicate and obtain information in ways never before possible, dramatically opening up possibilities to participate in decisions that affect their lives (UNDP, 2001; Adeyemi *et al.*, 2006). Technology has also supported advances in health, nutrition, crop yields and employment. It has a multiplier effect by creating a virtuous cycle of increasing people's knowledge, health and productivity and raising incomes and building capacity for future innovation. As illustration, biotechnology can dramatically improve global fortunes as Ahmed El-Imam (2017) reported the successful application of a food waste abundant in Nigeria, sorghum bran, for the production of a fuel and an industrial chemical. Similar reports abound in literature. This could potentially improve the value chain of sorghum (of which Nigeria is a leading global producer), improve farmers' lives, generate employment opportunities and help the attainment of several SDGs, notably SDGs 1 and 2.
- ✓ Inclusive growth or participatory development is also essential since participation in development involves partaking, sharing and at times owning a particular project by the people. It is also a process and a means towards an objective. As a process, it denotes individual's involvement in the group activities. As a means towards an objective, it encompasses the social interaction that characterised a group, as well as, their contribution towards a designed end result (Picciotto, 1992; Adam and Riethergen-McCraacken, 1994; Vieira da and Pena, 1997; UNDP, 1993; Ijaiya, 2002a; Ijaiya, 2007).
- ✓ Global partnership to development via development assistance like provision of international aid to ease financial constraints faced by nations and development of international trade, most especially exports of labour-intensive goods that have the potential of increasing the share of the world's poorest countries and people in global prosperity (Adeyemi *et al.*, 2005; UNDP, 2005).
- ✓ Access to state-provided infrastructural facilities e.g. roads, railway, waterways and electricity are significant because economic and social infrastructures are essential overhead capital and key elements in national wealth. When these facilities remain dysfunctional, disconnected, run down and inadequate, private and public firms will not get established nor function effectively and efficiently for them to improve the overall quality of life of the people (Lanjouw, 1995; Ijaiya, 2002b; Adeyemi, 2006; Ijaiya and Saad, 2009).
- ✓ Existence of good governance and value orientation are also pre-conditions for improved and sustainable growth. Good governance is reflected on the responsibility of the government in involving its citizens in the development decision that affect their lives and the government's responsibility to ensure accountability, openness and transparency for their actions so that resources can have maximum impact in benefiting the people. Good governance also allows for civil and economic liberties. Civil liberties, such as, the freedom of individual expression and a pluralistic and free media. The ability of groups to organise and

freedom of dissent and criticism are also essential elements of civil liberties, since they facilitate greater citizen voice and enhance more effective government action on development. Economic liberties, on the other hand, foster entrepreneurship, market activities and economic growth since there could be fewer regulations and fewer obstacles to individual economic opportunities. Value orientation is anchored in the imperative to restoring the fundamental values of the people which has been weakened over the years. The elements of this value system include respect for elders, honesty and accountability, cooperation, industry, discipline, self-confidence and moral courage (Boeninger, 1991; Brautigan, 1991; Landell-Mills and Serageldin, 1991; Ishamet *et al.*, 1997; NPC, 2004; Adeyemi *et al.*, 2006).

The sustenance of development in Nigeria depends on the factors listed and discussed above and the nation's ability to achieve the Sustainable Development Goals (SDGs) before the year 2030 deadline. However, when critically viewed and given the existing situations and evidences available on the state of the nation's economy and the living standard of the people, some amount of skepticism sets in. For instance, apart from in the 1960s to the earlier 1980s, when with the introduction of the First, Second, Third, Fourth and Fifth National Development Plans and the inauguration of the export promotion and import substitution policies, the nation's manufacturing sector grew rapidly at an annual average growth rate of 17.5 percent, because then these Plans and the policies/programmes that came with them were geared towards the diversification of the agricultural and industrial bases of the nation and the creation of industrial linkages. Increase in oil earnings within these periods also enabled the government to establish such basic industries as iron and steel, petrochemical, pulp and paper, fertilizer, machine tools and Liquefied Natural Gas (LNG) industries. Example of industries established were vehicle assembly plants in Kano (Fiat), Kaduna (Peugeot), Bauchi (Styer trucks and tractors), Anambra (Mercedes Benz trucks), Lagos (Volkswagen); Jebba Paper Mill; Steel Rolling Mills in Jos, Oshogbo, Kastina and Alaja; Bashita and Savanna Sugar Companies, Oil refining industries in Port Harcourt, Warri and Kaduna, Ajaokuta Steel Industry; Jos Tin Mining companies, etc. The nation also witnessed a massive infrastructural development (e.g. roads constructions across the country (e.g. Lagos-Ibadan expressway) and the construction of irrigation facilities managed by the various River Basin Authorities (Ijaiya, 2000).

However, between 1990 and the year 2016, the nation witnessed an unprecedented decline in both economic growth and social development. Some of the reasons behind this include the huge fall in the price of crude oil in the international market (the key foreign exchange earner of the nation) from US\$109 per barrel in 2008 to US\$37 per barrel in 2015, exchange rate volatility that led to excessive devaluation of the nation's currency (Naira) from N125.81 per US\$ in 2008 to N192.44 per US\$ in 2015 at official rate, increase in inflation rate from 9 per cent in 2014 to 18.5 per cent in 2016 (AfDB, 2016b; CBN, various issues).

Other reasons established for the decline in the nation's economy include; macroeconomic policy inconsistency, instability and policy reversals, conflicts of macroeconomic policy goals, budget contraction, public sector dominance in production of goods and services, weak institutional capacity for economic policy management and coordination, lack of effective coordination among the three tiers of government, increasing security challenges in the North East and the Niger Delta that limited revenues, investment and output in both the

real and oil sectors, a huge external debt overhand, deterioration in terms of trade, deterioration in the state of infrastructural facilities (most especially electricity power supply), bad governance, pervasive rent seeking and corruption. For instance, the rate of corruption in the country has been so massive that the country was rated 136th most corruption nation in the world out of 176 countries. The country is more corrupt than Cape Verde (38th out of 178 countries), the least corrupt country in Africa (TI, 2016).

The nation's external debt burden has also continued to heighten since the debt problem erupted in 1982 (when debt arrears accumulated owing to inadequate foreign exchange inflows). By 1981, Nigeria's outstanding external debt stood at about N2.33 billion. Despite attempts to effectively manage the debt, it has continued to grow persistently rising from N633.02 billion in 2001 to N2111.53 billion in 2015 (CBN, various issues).

The consequences of these situations are reflected in the nation's inability to remarkably improve and sustain her economy as expected. As indicated in Table 2, the nation's per capita income had witnessed some decline from US\$652 in 1980 to US\$260 in 2000 with some marginal increase at US\$390 in 2004. At an increased amount of US\$5520 in 2011, the nation's per capita income witnessed yet another decline in 2012 put at US\$2470. The incidence of poverty in Nigeria has been on the increase too with the rate increasing from 28.1 percent in 1980 to 75.5 per cent in 2009. The state of the nation's Human Development Index (HDI) (which comprises longevity as measured by life expectancy at birth, educational attainment as measured by a combination of adult literacy and improvement in standard of living as measured by the real GDP per capita income) was not far different from the nation's level of economic growth, because Nigeria with a HDI of 0.500 was ranked 153rd out of 187 countries. This situation when compared with that of country like Mauritius that had a HDI of 0.769 and ranked 63rd out of 187 countries provides a pathetic situation and doubts on the possibilities of the nation achieving efficient and stable economic growth and achieving the targets of the SDGs by the year 2030 (UNDP, 2014, 2016).

Table 16. 2: Some Selected Socio-Economic Indicators in Nigeria (1970- 2015)

Year	Poverty Rate (%) ^a	Primary School Enrolment Ratio (Gross) (%) ^b	Low Birth Weight Babies (% of Births) ^b	Infant Mortality Rate per 1000 ^b	Maternity Mortality Rate per 1000 ^b	Population 15-49 with HIV/AIDS (%) ^c	Access to Water (%) ^b	Access to Sanitation (%) ^b	Inflation Rate (%) ^b	Total CO ₂ Emissions ('000 MT) ^b	GNI Per Capita (\$)	HDI (0 to 1 out of 187) ^b	External Debt (\$Billion) ^d	Average Exchange Rate (National Currency per US\$) ^b
		Female	Male											
1970	-	32.2	55.3	-	148.2	-	-	-	-	41277.5	232.0	0.230	-	36.8
1975	-	40.3	63.0	18.0	138.5	-	-	-	-	54289.2	550.0	0.318	-	36.2
1980	28.1	108.8	122.6	20.0	130.0	1500.0	-	-	40.0	65800.4	652.0	0.376	2.33	35.5
1985	46.3	103.6	115.0	16.0	123.5	1500.0	16.9	62.1	-	70432.2	292.0	0.386	17.80	35.1
1990	44.0	91.4	104.0	-	119.5	1000.0	40.0	63.3	67.0	70420.5	220.0	0.406	298.61	34.6
1995	60.0	93.0	103.0	-	117.4	-	49.9	57.3	-	22555.6	210.0	0.418	716.87	35.1
2000	74.0	92.0	114.0	-	115.3	800.0	57.0	63.0	6.9	36149.0	260.0	0.462	3097.37	35.7
2001	83.1	80.0	114.0	-	114.8	-	5.5	-	18.9	36149.0	300.0	0.463	3176.26	35.7
2002	88.0	107.0	132.0	-	114.4	-	-	-	12.9	36149.0	300.0	0.466	-	35.8
2003	-	-	-	-	113.1	-	5.4	60.0	14.0	36149.0	350.0	0.453	3932.88	-
2004	-	-	-	-	111.9	-	5.4	-	15.0	36149.0	390.0	-	4478.33	-
2005	-	92.6	109.0	-	110.6	-	2.9	58	17.9	36149.0	660.0	-	4890.27	-
2006	-	-	-	-	-	-	-	-	8.2	10599.7	-	-	2695.07	-
2007	-	-	-	-	-	-	-	-	5.4	-	-	-	451.46	-
2008	-	79.0	88.3	-	87.3	-	61	31	11.6	99159.0	1160.0	-	438.89	125.81
2009	-	80.6	89.2	26.7	84.3	829.0	62	31	12.5	75956.0	1160.0	-	523.25	118.55
2010	75.5	80.6	88.3	-	81.5	883.0	63	31	13.7	73764.0	1460.0	-	590.44	148.90
2011	-	-	-	-	78.8	867.0	64	30	10.3	83131.0	5520.0	0.493	689.84	150.30
2012	-	-	-	24.4	78.2	824.0	66	30	12.0	86398.0	2470.0	0.499	1026.90	154.74
2013	-	-	-	-	73.8	819.0	67	30	8.0	-	2700.0	0.505	1373.58	157.50
2014	-	-	-	31.0	71.5	821.0	68	29	7.4	-	2970.0	0.510	1631.52	157.31
2015	-	-	-	19.8	69.4	820.0	69	29	9.5	-	-	0.500	2111.53	158.55
2016	-	-	-	-	-	814.0	-	-	-	-	-	-	-	192.44

Sources: (a) FOS /NBS various issues, AfDB 2016a; (b) AfDB 2016a, 2016b; UNDP, 2014; (c) PRB 2005 and 2006; and (d) CBN, various issues, NBS, various issues

16.7. Conclusion

This chapter examined the prospects of sustainable development in Nigeria from the perspective of the socio-economic-ecological framework of sustainable development and from the paradigm of SDGs. When linked to the existing state of Nigeria's economy, the determinants of economic growth, its efficiency and stability put together become imperative. Some of the key determinants or indicators of economic growth, which in turn determine the efficiency and stability of a nation's economic growth are Gross Domestic Product (GDP), the nation's per capita income, access to education, access to safe water, access to health, macro-economic stability, improvement in the capabilities of the people and enhancement of freedom, investment in technology, inclusive growth or participatory development, global partnership to development, access to state-provided infrastructural facilities and existence of good governance.

The sustenance of development in Nigeria depends on these factors and the nation's ability to achieve the SDGs before the 2030 deadline. However, this is not likely to be given the state of the nation's economy that was brought about as a result of macroeconomic policy inconsistency; instability and policy reversals experienced over the years; conflicts of

macroeconomic policy goals; budget contraction; public sector dominance in production of goods and services; weak institutional capacity for economic policy management and coordination; lack of effective coordination among the three tiers of government; increasing security challenges in the North East and in the Niger Delta regions that limited revenues; investment and output in both the real and the oil sectors; a huge external debt overhang, deterioration in terms of trade; deteriorating state of infrastructural facilities (most especially electricity power supply); bad governance and pervasive rent seeking; and corruption.

The chapter therefore concludes that addressing these challenges requires pragmatic policy measures that would include among others stable macroeconomic policies, heavy investment in infrastructure especially in power, rail, road and water ways, massive investment in agriculture, mining and manufacturing industries, a strengthening of the nation's institutions, fighting corruption, allowing for good governance, including the people in the design and implementation of the policies/programmes/projects that affect their lives and most important a positive change in attitude by both the leaders and followers.

Revision Exercise:

1. What is Sustainable Development (SD)?
2. Highlights the three pillars of SD and their outlook in Nigeria.
3. List the 17 SDGs and briefly discuss how they can be achieved in Nigeria.
4. Identify five agencies of government and state their roles in entrenching SD in Nigeria.

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