

## Population and Environmental Policies in Nigeria: A Part of the Whole of the Global Environmental and Population Challenges

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### Abstract

Policy for social-political action is an important factor that directs the socioeconomic and political activities in every nation, and acts as a guide for the nation in question into the future. Population and environmental policies at the global and domestic levels were necessary reaction to the ever growing human population and environmental consequences. Although the development apologists have argued that improvement in technology and science is the answer without controlling the human population, evidences abound that population growth is a serious challenge to the global and domestic environment (atmosphere, hydrosphere and lithosphere). Having ignored the position of the development apologists in pursuit of controlling human population growth and environmental degradation simultaneously, the United Nations have aimed at developing and reinforcing policies in order to get the member nations keep their population and environment under check. Nigeria as a member of United Nations has subscribed to these policies in principle however; the policies in practice are yet to show positive results. This paper focused on investigating Nigerian environmental and population policies since her independence, the extent of implementation, the relationship between population growth and environmental degradation in Nigeria and implication of the present situation of the environmental and population policies in Nigeria, to the global environmental and population challenges. In view of the findings, the paper recommended a new approach to the formulation and implementation of environmental and population policies in Nigeria for better future of the nation and the globe.

**Keywords:** Environment; Policy; Population; Climate change

### Introduction

From simple to complex social life, man has been waivered by different challenges to attain a height in social growth and development. The challenges which include the pre- and post-development challenges surface at different stages of development. While pre-development challenges are those circumstances surrounding the initial stages of initiation and implementation of development program and policies, the post development challenges are those unforeseen circumstances arising from the already executed development program and policies. Back in the 18<sup>th</sup> century, the global attention was on the pre-development challenges which were more of what was perceived as a hindrance to wealth creation and satisfaction of human needs such as food, clothing and shelter. In response to this perceive challenge, science and technology was embraced just for the maximum exploitation of nature without consideration of the likely undesired consequences. However, after the undesired consequences of development started taking its toll on the interaction between man and environment, the post development challenge such as, what could be done to minimize or avert the unfortunate reaction between science/technology and natural environment became the order of the day [1-3]. Environmental degradation resulting from population expansion and uncontrolled exploitation of natural environment via common human activities and science/technology, is the current challenge facing the globe. While exploitation of nature via science/technology is majorly seen as the immediate and major cause of environmental degradation, human population expansion is acknowledged as the remote cause of environmental degradation [4]. Even though Malthus in a more classical argument raised the alarm about the unforeseen consequences of population growth against the available natural resources; using mathematical equation (geometric progression for human population & arithmetic progression for food production) [5], he envisaged a time human population growth will become a problem, creating undesired changes. Indeed, his prediction and suggested adaptation

strategies were limited in scope and usefulness because of his time and surrounding factors; he did raise in advance silent issue which certainly became salient issues beyond his time. On the contrary, the pronatalists such as Condorcet have seen no problem around the same century, in the growth of population and other challenges rather; such assumed fears according to him can be taken care of, by advancement in human rights, freedom and technological progress and preservation.

The population explosion which was either as a result of the inability of the antinatalists (Those who agitate for controlled birth rate) to convince at large, the global system or, the vigorous efforts of the pronatalists (Those who are against controlling the birth rate) to hold the stage in most part of the globe, resulted in the dependent on science and technology for food production and other advanced human wants. We produced more fertilizers, pesticides, and other chemicals to ensure food production, while the need for energy and technology/electronic appliances skyrocketed. All these resulted to the environmental degradations including the atmosphere, the hydrosphere and the lithosphere [6-8].

In a quest to confront the post development challenges, environmental and population control became the answer. While the global system via United Nations dictated the direction of policies to curtail these challenges, the member nations bear the huge

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responsibilities of realizing these policies via domestic institutions and policies such that, the failure of the domestic policies became a part in the whole of the global environmental challenges.

In view of the above, Nigeria as a nation has a niche in the overall responsibility of protecting the global environment and future generations. To this effect, her domestic environmental and population policies and their implementations have not only domestic impact, but global impact as well. The present paper is focused to trace the failure of the population/environmental policies in Nigeria, and their implementations; unraveling its consequences both domestically and globally. The present study relied on the historical and administrative (secondary) data, in tracing the origin of population and environmental policies in Nigeria since her independence, comparing the logic of these policies at the global level to the situation in Nigeria and making inference on the lapses and their implications domestically and globally.

## Concept Clarifications

### Human population

This is the number of human beings living in a particular geographical setting comprising the young and old males and females at a particular point in time. Beyond the mere number of people living in a particular place in a particular time, population for the sake of this paper involves the level of development which surfaces in the type of technology and consumption among the people, which determine the extent of pollution obtainable within their environment. This is because, every individual contribute directly or indirectly, to the overall environmental pollution resulting from the use of renewable and non-renewable energies available to the group [9].

### Environment

The natural environment encompasses all living and none living things occurring naturally on earth or some region there off. It is environment that encompasses the interaction of all living species, climate, weather and natural resources that affect human survival and economic activity [10]. According to Miller [6], the world inhabited by humans is classified by the scientists as the biosphere (ozone of the earth in which life is found); this comprises the atmosphere, the hydrosphere and the lithosphere within which the ecosystem is found.

### Environmental degradation

According to the United Nations international strategy for disaster reduction (2004), environmental degradation is the reduction of the capacity of the environment to meet social and ecological objectives, and needs. This includes the damage to the lithosphere, hydrosphere and the atmosphere which result to ozone layer depletion via greenhouse effect [1,2,4,11-13]. According to Nnadozie [14], the potential effects of environmental degradation varies and may contribute to an increase in vulnerability and frequency and the intensity of natural hazards. Some examples according to them are: land degradation, deforestation, desertification, wild land fires, and loss of biodiversity, land, water and air pollution, climate change, sea level rise and ozone depletion.

### Policy implementation

According to Jega [15], public policy can be viewed as definite course or method of action selected from among available alternatives and in the light of prevailing circumstances to guide and determine present and future decisions and actions intended to deal with particular situations or problems by a [16], maintained that: Its importance lies in the fact that it serves as the political, legal and administrative context

and framework within which functionaries of government (elected and appointed) and the organs of government (especially the legislative and executive branches, and their constituent units of ministries, extra ministerial departments, parastatals and so on) interact with a myriads of nongovernmental stake holders, and synthesizes ideas on how to satisfy identified needs and aspirations of citizens, convert these into executable policies, and mobilize resources to provide goods, products and services aimed at addressing the identified needs and aspirations, as efficiently and effectively as possible [15].

### The negative relationship between population expansion and environmental degradation: Assumption or reality?

Though some development and technology apologists have argued that population growth is unconnected to environment challenges and other unforeseen consequences [17,18] others arguing that such negative relationship between population and environment degradation varies and are relative in comparison [19] empirical documentations currently have established that there is a negative relationship between population growth and environmental degradation. Using the term Impact equation, [20] summarized in mathematical equation, the relationship between population and environmental degradation. According to the equation Impact (I) = population (p) × Affluence (A) × Technology (T) i.e.,  $I = P \times A \times T$ . Here impact refers to the amount of particular kind of environmental degradation; population refers to the absolute size of the population; Affluence refers to per person income; and technology refers to the environmentally damaging properties of the particular techniques by which goods are produced.  $I = PAT$  was originally formulated [20-22] as a starting point for investigating the interaction of population, economic growth and technological development [21,23,24]. In view of the promise the formulation holds in explaining to some extent, the relationship between population and environmental degradation, it has passed through a number of review and modifications resulting in the subsequent equations by other authors such as  $I = \text{population} \times (\text{economic good}) / \text{population} \times \text{pollutant} / (\text{economic good})$  [20];  $\text{Population size} \times \text{per capita consumption} \times \text{environmental impact per unit of production} = \text{level of pollution}$  [21];  $\text{Pollution} = (\text{population}) \times (\text{production/capita}) \times ((\text{pollution emission}) / \text{production})$  [19];  $\text{Environment disruption} = \text{population} \times \text{consumption/person} \times \text{damage}/(\text{unit of production})$  [19].

To bring the  $I = PAT$  equation into regression analysis and to bridge the gap between biological and social sciences in the study of global climate change, [25] developed STIR PAT which means Stochastic Impacts by Regression on population, Affluence and Technology. This was formulated into an equation thus:  ${}_a P^b A^c T^d e$  where the variables a-d can be either parameters or more complex functions estimated using standard statistical procedures and e is the error term [24]. The  $I = PAT$  equation since its inception has immensely contributed in the study of the relationship between human population growth and environmental degradations including the climate change and energy related carbon emission. It has played a prominent role, particularly in the intergovernmental panel on climate change assessment [13,24,26,27]. Having justified the ground for empirical investigation into the relationship between population growth and environmental degradation, many scholars on this basis and other advanced methodologies have studied and found consistently, the evidences proving the negative relationship between population growth and environmental degradation. Using seemingly unrelated regression equation (SURE), [28] found that if there is 1% in population density, arable land use increases by almost 0.062% in Pakistan, 0.041% in India and 0.01% in Sri Lanka; population growth and population

density caused the increase of CO<sub>2</sub> emission in Pakistan. The overall result of the studies carried out in South Asia Regional cooperation countries (SAARC) for the years (1985-2009) concluded that excessive population growth rate has a deleterious impact on environment. Studying the impact of population growth on land, water, forest and energy resources in India, [29] discovered that the increasing population of India has resulted in rapid growth of energy production and consumption; in extension, causing degradation of the lithosphere, the atmosphere and the hydrosphere [30] found a declining trend among food productivity, population growth and natural resources, which deplete soil productivity resulting in vicious circle of population, poverty and environmental degradation. Rapidly growing population not only increases pressure on marginal lands, over-exploitation of soils, overgrazing, over cutting of woods, soil erosion, silting, flooding; but also increases excess use of pesticide fertilizers causing land degradation and water pollution. Population growth accounts for 35% of greenhouse gases in the atmosphere [31]. A study by Mabogunje [32] found a relationship between population growth and natural resources in the United States. According to them, the composition and scale of activities in the United States are changing the Chemistry of the nation's land, water and atmosphere so dramatically that these changes are adversely affecting its natural capital and thus, the ecosystem services are required to support its population. In a study involving Bangladesh, India, Indonesia, Pakistan and Japan [31], on interaction between population growth and environmental degradation, the finding revealed among other things that long run coefficients of population growth and population density have significant positive impact on environment, 1% increase of population and population density yielded 0.11% and 0.34% increase in CO<sub>2</sub> respectively. Furthermore, the long run elasticity of population growth and density resulted in 0.18% and 0.29% increase in arable land use.

According to Holdren [26], while greenhouse gases resulted in global warming at the earth surface in the lower atmosphere, they result in a cooling of stratosphere, thereby increasing ice-cloud formation there. These ice-clouds speed up stratospheric ozone depletion by freezing up nitrogen compounds that would otherwise inhibit the ozone depletion reactions. Thus the greenhouse effect will worsen the problem of stratospheric ozone depletion [33]. The negative relationship between population growth and environment is a reality than assumption and one of the serious challenges facing the globe currently.

## Population and Environmental Policies in Nigeria Till Date: The Unplanned Adventure

Both the environmental and population policies in Nigeria are relatively new compared to the Nigerian independence and other global factors that provoked reactions to the environmental challenges. Due to the synagogue of blind men set up by the colonial administrators, and the successive breeding of blind men and women as political leaders, certain policies in virtually all the areas of the economy were in the interest of the politicians and their staunch allies who handed over the system to them. In effect, where the politicians see no danger against their class and that of the former colonial administrators, there was no reason for parliamentary discussion over such issue even if it is affecting the Sociological majority of the population. According to Onyeabor [34], the first 40 years (1960-2000) of Nigeria's post-independence economic development policies were restricted to the rehearsal of the colonial development era.

Prior to 1972 United Nations Organization (UNO) conference on human environment held in Stockholm, Nigeria as a nation did

not establish a legal or economic framework for the supervision and monitoring of environmental issues rather, much attention was given to industrialization, indigenization and full exploitation of the available raw materials [35].

Although Nigeria as a member of international organizations such as United Nations has been covered by certain conventions on environment by these organizations such as the 1968 African convention on conservation of nature and natural resources; 1972 UNO conference on the human environment (Stockholm declaration); 1976 Vancouver conference on human settlements; 1985 Vienna convention on protection of the ozone layer etc.; it was not until 1988 in reaction to the dumping of toxic waste in Koko Delta state, that Nigeria wake up to the realities of environmental issues. This resulted to the first ever drafted environment act of 1988 [35-37]. The environmental act was followed by the 1992 environmental impact assessment and the establishment of Federal ministry of environment in 1999 [35,38]. The environmental impact assessment of 1992 and subsequently the full establishment of federal ministry of environment led to the development of more detailed subsectors of environmental management focusing on different aspects of environmental concern such as Social Impact Assessment (SIA), Health Impact Assessment (HIA), Rapid Urban Environmental Assessment (RUEA), Environmental Risk Assessment (EnRA), and Environmental Technology Assessment (EnTA) [37,39,40].

In the case of population policies in Nigeria, there are evidences of adhoc policy adoption and implementation. The initiation of population policy in Nigeria started in 1988 which was roughly three decades after independence and seven decades after amalgamation of the nation by the colonial administrators. Again, this policy wasn't as a result of proper comprehension of the situation on ground and focus towards the objective essence of population control but, was as a result of stimulation from outside and in a bid to fulfill all righteousness as the Mexico 1984 world population conference has demanded from the attendees [41].

According to Shofoyeke, after the 1984 Arusha Tanzania in which Nigeria acknowledged the Malthus proposed law of population (population growing faster than the food production) in manifestation in her economy, they join the Mexico world conference in 1984 in which the world body resolved that it is necessary all nations that want to adopt population policy should do so without delay. This sprang forth the Nigerian first formulated population policy which targeted the lowering of the population growth rate via encouragement of the couples to have at most, 4 children. Unlike the environmental policy in Nigeria, the 1988 Nigerian population policy remained the only policy till date with review of its effectiveness and achievements from time to time and the focus on benchmarks such as the 1995/2000 benchmark and expected growth rate in 2015 [42-44].

## Population and environmental policies and implementation in Nigeria, the expectations in principle and the obtainable and realities

Generally, policies are simply the wave of human brains which are captured as concepts and brought to written code for documentation, evaluation (in the course of deliberation) and implementation to confront, unforeseen circumstances which are expected to arise in future time. The socio-political and economic aspects of policies if properly formulated and implemented, are as powerful as clinical power of a drug which surfaces in minutes or hours after the intake. Well-articulated policies are as good as powerful drugs which if taken, according to the physician's directives with proper observation, deal

with the particular ailment, restore the system or boost the system against unforeseen diseases. In the case of well-articulated policy, the efficacy lies on the strict adherence to the principle of policy implementation [44]. According to Ebigbo [45], there are five stages of policy making processes among which are policy agenda/initiation, policy formulation, policy adoptions, policy implementation and policy evaluation. These serve as mechanism through which policy can move from human brain wave into material substance or life style of a group for the betterment of the society.

In view of the above situation, all of the environmental and population related policies in Nigeria are assumed to have first, moved from the conceived better ways of actualizing development agenda (brain wave), to activities towards a realizable objectives. Secondly, it is assumed that these policies must have been comprehensive enough to curtail the perceived challenges and unforeseen challenges to the nation in such areas they dominate and thirdly, these policies have followed at some level the conventional stages of policy making and implementation which, is bound to ensure the effect of policy concept on the socio-economic system of Nigeria. Indeed, the above assumptions as the expectations of a common man and preferably, scholars, are more of ideal situation than the reality on ground.

To start with, the 1988 approved policy on population for development, unity, progress and self-reliance has faced with some level of challenges even before its initiation. For example, the starting point for the policy which was connected with the 1984 world population conference in Mexico showed some evidences of fire brigade approach which later led to inconsistency in both the structure and implementation of the policy. This indeed led to the inconsistent results which followed the implementation of the policy. The 1988 population policy reviewed in 1995 which was focused, to achieve among other things, the down ward slope of the growth rate towards 2% or below, seem to have achieved less than expected. The evidences from the year 2000, which was the year for the beginning of the evaluation of the policy, showed that the growth rate was still hovering around 2.67%. Only in the subsequent years such as (2004) 2.45%; (2005) 2.37%; (2006/2007) 2.38%; (2008) 2.03%; (2009) 2%; (2010) 1.97% and 1.94% (2011), that there were evidences of changes in down ward direction of growth rate. However, from 2012 (2.55%); 2013 (2.72%); 2014 (2.17%); 2015 (2.68%) and 2016 (2.68%); the evidences showed a reverse towards up ward direction, wiping off the gains that has been made from 1988 when the policy was initiated [41,46]. Again, in the area of fertility rate, given the years of achieving the target, evidences on ground still indicate that such has been realized; where there is a near achievement of the target, the subsequent years wipes it off [41,46].

Due to lack of interest by the political leaders which may be attributable to corruption, illiteracy and lack of foresight, the issue of population took the back seat among other issues making it, more complicated even when there are sophisticated policies developed by the scholars.

In the case of environmental policies, the same situation is obtainable in terms of the initiation and implementation of the policies. While the first environmental policy in Nigeria (1988) was in reaction to the dumping of the toxic waste in Koko Delta state, its implementation and the implementations of other subsequent policies were faced with some level of challenges resulting in poor and inconsistent results. Although Nigeria as a sovereign nation has initiated a number of environmental policies, weak and uncategorized legal frame work made them vulnerable to strategists in all fronts by selfish individuals

and groups, who are looking for a way to evade responsibilities as a result of their operations and establishments. Due to the obsolete nature, inconsistency and vulnerability of the environmental policies in Nigeria as a nation, the realities on ground in terms of achievement is in opposite to the principle and expectation of the policies. Hence, environmental degradation at all levels continue and Nigeria facing with the problems. On the domestic environmental policies which are aimed at controlling the surrounding of the inhabitants of the areas in question, both the government agencies and the inhabitants collaborate to sabotage the policies. For instance, the drainage system and garbage outside and within the habitations of the urban dwellers and even rural dwellers in Nigeria are death incubators where all kinds of microbes and bacteria develop and find their way into human population. While the inhabitants find it difficult to carry out their responsibilities in keeping the environment clean, the government agencies turn the weaknesses of the inhabitant into lucrative opportunities by collecting bribe from them to subvert the interest of the government policies on maintaining cleaner environment. On the internationally related environmental issue such as air pollution and greenhouse gas etc., the government agencies responsible for the implementation of such policies are only interested in revenue collection without proper evaluation of the industrial activities and their regular contribution to the domestic and global environmental problems. As the industrialists are interested in their profits and economic growth, they simply focus on the bribing the agencies and averting rigorous policy implementations and evaluations which may likely affect the rate of their industrial activities.

### **Poor and uninformed poly framework and their exploitation by the strategists**

Most of the environmental policies in Nigeria till date are obsolete, inconsistency and untimely due to uninformed policy makers in the area, who rely on the colonialists' adhoc approach and reactionary approach. These, make the environmental policies vulnerable to those who are always working out modalities to evade the tax, regular evaluation of industrial activities to curtail environmentally hazardous activities and other responsibilities by the government in protecting the environment.

On the side of the multinational corporations, the reaction to all the developed environmental policies is hostile in nature as they are out to undermine even the minor aspect of it. Most of these multinational corporations irrespective of awareness of the deadly impacts of poor technology and inefficient operational strategies are not ready to respect the rights of the inhabitants of their host communities, the sovereignty of the nation and the international outcry against environmental degradations [34,47-49]. While the developed nations are busy transferring the environmental burden such as e-waste, toxic waste and air pollution to the developing nations under the disguise of transferring antiquated ICT equipment's, heavy equipment's, establishment of heavy industries that are considered environmentally hazardous in some locations; both the indigenous and foreign sponsored industries are devising a means to weaken the domestic environmental policies via bribery, denial of responsibilities and exploitation of the poor knowledge about environmental issues/lack of human and material resources by the environmental management system [35,50-52]. According to Eneh [34] most of the industries operating within Nigerian territory engage in concealment or selective interpretation of quantitative information about impacts; collude with the regulatory agencies to actively subvert the original intention of legislations. Due to obsolete nature of some environmental policies and untimely review of these policies, including the fact that the baseline for analyzing and evaluating the data are alien

to domestic management system; compromising the information and falsifying data became easier for the industrialists and their staunch allies elsewhere [37,52,53]. Nevertheless, the structural inconsistency in terms of environmental policy implementation becomes a hitch in realizing the accurate objectives of these policies. For example, the domestic environmental policies in Nigeria still lack specification of objectives and levels of implementations between the federal and state levels even the local government levels on different sub policies dealing with some categories of pollutions and assessments. These have created opportunity of bumper harvest for corrupt individuals and groups who have access to the management system and those who are poised to evade responsibilities in their regular industrial operations. While the corrupt officials at federal, state and local government levels are active in the area of revenue collection, the implementation and evaluation of what is on ground are ignored and undermined as responsibilities. In spite of all the lofty and laudable environmental policies in Nigeria, gas flaring are still on the rise, water pollution as a result of industrial activities are still threatening the lives of the citizens in some parts of the country, Nigeria is still the destination for millions of e-waste from Europe, America, and Asia; Nigeria still harbors thousands of obsolete technological equipment's that generate substantial amount of air pollution; the poor power grade in the country still encourages the source of alternative energy (such as power generating sets) which contribute largely to the emission of carbon dioxide, carbon monoxide and other forms of environmentally hazardous elements. In addition, the relative quota for carbon sink which Nigeria contribute to the global system by virtue of her location, are fast depleting as deforestation is on the rise.

### **The global environmental and population policy: The logic behind the move and the agreement in principle**

The negative relation between population growth and environment has multiple effects on the health, economy, and the social well-being of the members of the society both at the domestic level and the global level. Multiple studies have revealed the fact that the more the human population increase, the lesser the quality of our natural environment. Although the pronatalists argue that there are harvest opportunities in population expansion such as more wealth by using the human resources, creating of a harmonized social system which will carter for all, sending the burden of human population to other colonies/territories where they will bring back home the wealth from other lands. A vision of the European ancient philosophers towards the third world nations which is now in the reverse order as the citizens of the third world nations are now going to Europe to send back wealth to their lands, and encouraging the advancement of technology for the creation of more food and satisfactions. The reality indeed has eluded such imaginations. Malthus was a prophet (though without specific focus and prediction) when he expressed his concern about the relationship between human population and natural resources, as unequal. While humanity reacted to population expansion by developing science and technology to create more food and comfort, the inelasticity of the natural environment revolted against man by exposing him to unfavorable surrounding which resulted in a number of challenges. However, in reaction to these challenges, reversal to certain behavioral factors becomes the panacea among other strategies, and the only way to actualize this was through policies which are meant to reverse, encourage or hold in stand still, the attitudes towards the factors responsible for the present challenges.

The entire global system has accepted in principle, to respond to the challenges posed by the environment to human by hosting a number

of conferences both on the side of population and the environment. Among these conferences are World population conference (1974); Mexico international conference on population and development (1984) and the Cairo international conference on population and development (1994).

Among the environmental conferences are Vancouver conference on human settlement (Habitat I-1976); Vienna conference on protection of ozone layer (1985); Lugarno convention on civil liability for damage resulting from activities dangerous to the environment (1993); Istanbul conference on human settlement (Habitat II-1996); the Kyoto protocol on climate change (1997); Paris agreement (Cop 21-2016); etc. [54,55]. All these conferences and many more not mentioned here, were geared towards developing policies to save the natural environment and by implication, man from the adverse reaction from environmental degradation. Logically, these were informed by the already felt adverse effects of environmental degradation on human societies across the globe and were agreed in principle by the United Nations member nations.

### **The population and environmental policies: The implementers, the defaulters and the implications domestically and to the global community**

Indeed, since the inception of these conferences and the subsequent agreements there has been an improvement generally and particularly for the nations that practically followed up the outcome of the conferences. For instance, following the Montreal protocol which was focused to eliminate chlorofluorocarbons, which cause the ozone depletion, there are changes which indicate the healing of ozone layer such as increase in ozone column amounts, changes in the vertical profile of ozone concentration and decreases in the real extent of the ozone hole [56]. In particular, certain nations across the globe such as United States of America, Russia, Britain, Switzerland, etc. who have carefully observed and implemented the population and environmental policies, are relatively far from common hazards from environmental mismanagement. In these nations, there are incentives and other technical measures adopted to encourage family planning and individual and group participation in birth control. The level of enlightenment in these nations has come to the point of making individuals and civil society groups to take it upon themselves to see that these empirically informed policies are encouraged by all and sundry. For instance some of these nations have given birth to some organizations such as Green Peace, Friends of the Earth, etc. for the sustenance of the fight against environmental degradation. In much of these nations such as USA, Germany, Britain etc., government involvement in environmental protection has been very strict that even carbon emission from automobiles are controlled via the manufacturers and followed up in the transport system with advanced technology. The eagerness with which these nations have followed the outcome of the environmental and population conferences and discussions, they have relatively assumed control over the environmental degradation and population growth.

Meanwhile in most other nations, irrespective of their participation in the conferences and discussion about environmental and population issues they are still on the path of pursuing developmental and other interests without regard for the implication of environmental degradation and over population. While the quest for industrialization and economic development take preeminence against environmental interest in some of these nations, religious dogma and corruption become a stiff resistance to the interest of population control in others. In most countries where environmental and population policies have

failed or were not acknowledged, such as China, India, Pakistan, Sri Lanka, to mention but a few, there has been a record breaking environmental disasters resulting in the loss of thousands of lives and properties worth billions of dollars domestically. According to the Chinese Academy for Environmental Planning (CAEP, 2013), the Chinese government lost about \$230 billion (1.3% of her GDP) in 2010 to environmental degradation mainly as a result of pollution and damage to ecosystem. According to a global burden of disease study, air pollution contributed to 1.2 million premature deaths in China in 2010. According to Financial times (2013); World Bank (2013), environmental degradation costs Indian government \$80 billion dollar annually approximately 6 percent of her annual GDP. In the case of Pakistan, environmentally related problems financially and otherwise pose a serious threat to the nation's development. According to the report by the World Bank (2014), about 6 percent (Rs 365) of the Pakistan annual GDP are lost to environmentally related problems. In real human impact analysis, environmental pollution in Pakistan is connected to the ever growing terrible diseases in the country such as eye, throat and nose infections, damage to lungs, acute and chronic asthma, emphysema, lung cancer, etc. (A Report by the Department of Pharmacology & Toxicology, Pakistani University of Veterinary and Animal Sciences, 2011). In the aforementioned nations, irrespective of their development and achievement in real time economic analysis, hunger and poverty is still threatening the citizens.

Nigeria is not an exception as the country had been made vulnerable to environmental related problems such as diseases. Environmental problems are among the multiple effects of population expansion. High population growth rate in Nigeria is responsible for high level of poverty (which contribute to deforestation), conflict (which is fueled in some part of the country by environmental degradation), high level of maternal mortality, infant mortality, environmental pollution and the environmental pollution related diseases [41]. While population expansion is the remote cause of the aforementioned, failed and inconsistent population and environmental policies happened to be immediate and direct cause of the problems in particular. At least well-articulated and strictly implemented population policy will ensure relatively controllable and manageable number of human beings and their welfares, while an environmental policy in this direction will ensure the protection of the environmental health and by implication, the protection of man from adverse reaction of the environment due to human socio-economic activities.

As at 2016, the Nigerian gross reproduction rate stood at 2.4%, while the total fertility rate was at 5.13. The birth rate was 38.03/1000 population; this put Nigeria at the 13<sup>th</sup> position among the world 100 nations with high fertility rate (Geoba.sc, 2016). The unemployment rate is at 12.1%, poverty rate (33.1%); total dependency ratio (89.2%), physician's density rate (0.4/100); hospital bed density (0.53/1000) (CIA Fact book, 2016). On the side of population and environmental pollution, Nigeria is among the middle and low income countries whose 98% of their cities with population of up to 100000 do not meet the World Health Organization air quality guidelines. In these cities, the level of fine particulate matters are between pm 2.5-pm 10; the atmosphere is polluted by sulfate, nitrates, and black carbon, which to large extent are responsible for the risk of stroke, heart disease, lung cancer and chronic/acute respiratory diseases (WHO, 2016; Phoebe, 2016). By 2006, Nigerian cities such as Lagos, Port Harcourt, Abuja, Onitsha, Kaduna etc., have hit 8.5 pm due to industrial activities and even private business owners that used power generating sets due to inadequate power supply by the major power suppliers. This situation was responsible for the first time, the presence of smog in 2005 which lasted for about six hours (WHO, 2006).

Nigeria has the highest deforestation rate in the world having lost her 55.7% of the primary forest. This is due to annual deforestation rate of 3.5% (approximately 350000-400000 hectares per year). While the global temperature mean increase from 1901-2005 was 0.74°C, that of Nigeria was 1.1°C. This was accounted for by the level of deforestation in the country which had been attributed with the 87% of the total carbon emission of the country [57].

The relationship between population growth and environmental challenges cannot be overemphasized. This is evident both at local and global levels. While poverty is positively related to population growth, it moves to the subsequent stage of creating environmental challenges. This is responsible for the large extent of deforestation in Nigeria [58]. Majority of the poor in the urban and rural settings largely depends on the non-renewable energy such as charcoal and fire wood which escalate the issue of deforestation activities. The higher the population, the more the use of fertilizers, pesticides, and other chemicals which degrades the soil natural capacity and in extension, pollutes the inland and coastal waters [28,58,59]. Poverty as the substance of population growth in Nigeria, holds a remarkable position among other challenges which are facing Nigeria on daily basis such as high maternal mortality, infant mortality, high level of crimes of all sorts, land boundary/ environmental conflicts, high level of environmentally related diseases, etc. [59,60]. Beyond the negative impact of population growth on the environment vis-à-vis the quality of live among a population domestically; the situation in Nigeria is also a concern at the global level. Evidences have shown that the higher the populations, the higher the emission of CO<sub>2</sub> especially in countries like Nigeria with a volatile policy frame work. By implication, the population expansion in Nigeria is a future challenge to the global effort in protecting the ozone layer if nothing is done to control it. In addition, the high level of deforestation connected to the increase in population growth, is fast depleting the Nigerian quota of global carbon sink by virtue of her position and this of course, is contributing largely to the higher amount of CO<sub>2</sub> emission. Nigeria by virtue of being a member of the United Nations, is contributing to the burden of the World Health Organization both in the direction of weakening her effort in controlling environmentally related diseases and increasing her load on the chances of health emergencies among other things. The high rate of poverty connected to continuous increase in the Nigerian population is another burden to the World Bank and the United Nations generally, as it is one of the factors which have placed enormous stress on the coffer of the United Nations via its various bodies. Indeed, the negative relationship between population growth and environmental degradation is a challenge which goes beyond the local level and even the present time.

## Conclusion

Presently, Nigeria made up the 2.35% of the world population with every 43<sup>rd</sup> person calling himself a Nigerian anywhere in the world [61]. This also goes with the fact that all things being equal, Nigeria holds 2.35% in the global environmental pollution orbit according to the Ehrlich equation ( $I = PAT$ ) where every individual count in the final analysis of environmental degradation. This means that, the higher the population of Nigeria, the higher the quota of her contribution to the global environmental degradation. Indeed, scholars have envisaged such more than a century now. Such was a latent force which became active in the 19<sup>th</sup> and 20<sup>th</sup> century arguments against uncontrolled human population expansion resulting, in unanimous agreement to save the future of man (habitat) through population and environmental policies. Nigeria as a nation even after participating in these conferences leading to these policies in principle, has done virtually nothing to make the

visions and objectives of these conferences worth it, as her population growth rate is still staggering at 2.67% (the position at which it was in 1988 when she initiated the first population policy). The environmental policy in Nigeria till date is a mere ceremonial commentary and avenue for individual private gains. The situation in Nigeria presently is both a domestic and global challenge which must be confronted to avoid extreme emergency situation in the future like in places such as India, China and Pakistan where human socio-economic activities have set the environment against human existence.

## References

- Seager J (1990) *The state of the earth*. Atlas, Simon & Schuster, New York.
- Vanderpool C (1995) *Integrated natural resource systems*. Michigan Agricultural Experiment Station, Michigan State University, East Lansing.
- Goudie A (1990) *The human impact on the natural environment*. MT Press, Cambridge MA.
- Brown L (1998) *The future of growth*. WW Norton and Company, New York.
- Malthus TR (1965) *An essay on population*. Augustus Kelly, New York.
- Miller GE (1998) *Environmental science: Working with the earth*. Wadsworth publishing Co, Belmont, CA.
- Revelle R (1984) *The effect of population growth on renewable resources*.
- Carlson E (1981) *Government struggle to keep farms away from developers*.
- Ehrlich PR, Ehrlich AH (1970) *Population, resources and environment*. Freeman, San Francisco.
- Johnson DL, Ambrose SH, Bassett TJ, Bowen ML, Crummey DE, et al. (1997) Meanings of environmental terms. *J Environ Qual* 26: 581-589.
- Rozelle S, Huang J, Zhang L (1997) Poverty, population and environmental degradation in China. *Food Policy* 22: 229-251.
- Seitz JL (1995) *Global issues: An introduction*. Blackwell, Cambridge MA.
- Zaman Kh, Khan H, Khan M, Saleem Z, Nawaz M (2011) The impact of population on environmental degradation in South Asia: application of seemingly unrelated regression equation model. *Environmental Economics* 2: 80-88.
- Nnadozie OU (2010) *Public policy process and development in a neocolonial society: Issues in Nigeria development process*. Tropical Issues in Social Sciences. REK Books, Nigeria.
- Jega AM (2007) *Democracy, good governance and development in Nigeria*. Spectrum Books, Ibadan.
- Boserup E (1965) *The condition of agricultural growth*. Aldine, Chicago.
- Maier D (2015) The great myth: Why population growth does not necessarily cause environmental degradation and poverty. *The Public Sphere*, pp: 150-158.
- Harrison P (1993) *The third revolution: Population, environment and sustainable world*. Penguin books, London.
- Ehrlich PR, Holdren JP (1971) Impact of population growth. *Science New Series* 171: 1212-1217.
- Commoner BM, Corr Stamler PJ (1971) *The closing circle: Nature man and technology*. Knopf, New York.
- Commoner BM, Corr Stamler PJ (1971) The causes of pollution. *Environment* 13: 2-19.
- Dietz T, Rosa E (1994) Rethinking the environmental impacts of population, affluence and technology. *Hum Ecol Rev*, pp: 277-300.
- Chertow MR (2001) The IPAT equation and its variants. *J Ind Ecol* 4: 13-29.
- Dietz T, Rosa E (1998) Climate change and society: Speculation, construction and scientific investigation. *International Sociology* 13: 421-455.
- Houghton JT, Ding Y, Griggs DJ, Noguer M, Dai X, et al. (2001) *Climate change 2001: The scientific basis*. Cambridge University Press, Cambridge, UK.
- Holdren J (2000) Environmental degradation: Population, affluence, technology and sociopolitical factors. *Environment* 42: 4-5.
- Ray S, Ray IA (2011) Impact of population growth on environmental degradation: Case of India. *Journal of Economics and Sustainable Development* 2: 72-77.
- Cleaver, Schreiber (1994) Reversing the spiral; The Population, agricultural, and environmental nexus in Sub-Saharan Africa. World Bank, Washington DC.
- Ahmad MH, Azhar U, Wasti SA, Inam Z (2005) Interaction between population and environmental degradation. *The Pakistan Development Review* 44: 1135-1150.
- Dasgupta P, Lubchenco J (2000) Economic pathways to ecological sustainability. *Bioscience* 50: 339-345.
- Harte J (2007) Human population as a dynamic factor in environmental degradation. *Popul Environ* 28: 223-236.
- Mabogunje AL (2000) The camel without a rider: A tale of development policy in Nigeria over the years. United Nations Development Program, University of Ibadan.
- Eneh OC, Agbaeze VC (2011) Protection of Nigeria's environment: A critical policy review. *J Environ Sci Technol* 4: 490-497.
- Onyeabor EU (2000) *Industrial activities and Industrial laws in Nigeria*. Anambra State Environmental Protection Agency, Onitsha.
- Nwafor JC (2006) Environmental impact assessment for sustainable development: The Nigerian perspective. Environment and Development Policy Center for Africa Enugu.
- Ifeanyi A (2002) Environmental impact assessment as a tool for sustainable development: The Nigeria experience. Proceeding of the FIG XXII International congress, Washington.
- Sadler B (1994) *Environment assessment and development policy making*. World Bank, Washington DC.
- Goodland R, Tillman G (1995) Strategic environmental assessment: Strengthening the environmental assessment process. In *Environmental assessment process in Africa*. Mastr L World Bank, Washington DC.
- Shofoyeke AD (2014) An appraisal of the 2004 national policy on population for sustainable development. *Mediterranean Journal of Social Sciences* 5: 2520-2529.
- Adekunle AO, Otolorin EO (2000) Evaluation of the Nigerian population policy – myth or reality? *Afr J Med Sci* 5: 305-310.
- Savage S (2004) Nigeria adopts new population policy to improve quality of life.
- Okunlola MA, Olutayo AA, Okonkwo NS, Akingbola TS (2010) Pattern of contraceptive use among women with sickle cell disease in Ibadan, South-west Nigeria.
- Wadt GVD (2001) Public policy analysis. In: Nickerk V (ed.). *Governance politics and policy in South Africa*. Oxford University Press, Oxford.
- Okafor SO (2016) Misconception of population census and vital registration in Nigeria: A factor in socio economic and political stagnation. *International Journal of Novel Research in Humanity and Social Sciences* 3: 63-73.
- Ebigbo PO (2008) Appraising the impact of economic reform program on micro and small and medium scale enterprises.
- Eneh OC (2008a) The national development goals where stands Nigeria? *Knowledge Review*, pp: 146-158.
- Eneh OC (2008b) Sustainable development. *International Journal of Development Study*, pp: 100-103.
- Eneh OC (2011b) Effects of water and sanitation crisis on infant and under five children in Africa. *J Env Sci*, pp: 103-111.
- Toby M (1998) Technologies of truth: Cultural citizenship and the popular media.
- Nkamnebe AD (2010) ICT consumption and the challenges of environmental sustainability in Sub Saharan Africa, Hanoi, Vietnam. Proceeding of the 11<sup>th</sup> International conference on Beyond Global Markets. International society of markets and development.
- World Bank (1990) *Towards the development of an environmental action plan for Nigeria*. World Bank, Washington DC.
- Chappel B (2016) Nearly 200 nations adopt climate agreement at COP 21 talks in Paris.
- Eneh OC, Okezie YC (2009) Development and growing sustainable micro, small and medium enterprises-Global template. *Sustainable Human Development Review*, pp: 67-92.

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54. Solomon S, Ivy DJ, Kimison D, Mills MJ, Neely RR, et al. (2016) Emergence of healing in the Antarctic ozone layer. *Science*.
  55. Omofonmwan SI, Osa-Edoh GI (2008) The challenges of environmental problems in Nigeria. *J Hum Ecol* 23: 53-57.
  56. Odjugo PA (2010) General overview of climate change impacts in Nigeria. *J Hum Ecol* 29: 47-55.
  57. Stein TH, Prem LS (1998) Population pressure, agricultural change and environmental degradation in the western Himalayan region of India. *Forum for Development Studies* 2: 271–300.
  58. Olayiwola LM, Adeleye OA (2005) Rural infrastructural development in Nigeria: Between 1960 and 1990 – Problems and Challenges *J Soc Sci* 11: 91-96.
  59. Amokaye GO (2012) Environmental pollution and challenges of environmental governance in Nigeria. *British Journal of Arts and Social Sciences*.
  60. Lawal T, Oluwatoyin A (2011) National development in Nigeria: Issues, challenges and prospects. *J Public Adm Policy Res* 3: 237-241.
  61. Geoba Sc (2016) Nigeria-2016 statistics and ranking.