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# POLITICS, ECONOMICS AND THE DYNAMICS OF ENVIRONMENTAL DIFFUSION

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**Abstract**
This paper which is exploratory in nature examines analytical abstractions and diffusions in the study and understanding of the environment. It contends that the environment is all of the external factors affecting an organism including man and that there is an interaction of organisms within the ecosystem. It was deduced that species which coexist in the ecosystems must have evolved together for many generations and as such establish balanced interactions one with the other in such a taxonomy that all populations in the area remain relatively stable, though, natural or human disruptions could occasionally occur bringing with it unforeseen consequences to populations in an ecosystem. It is at this point that environmental abstractions manifest bringing with it environmental diffusions which show how much the sub-sets of the environment interact with the overall environmental set. This paper notes that man has greatly modified the natural process that control stability and balance within the ecosystem, which the environment cannot absorb. It then argues that it is this interrelatedness and interactions that show man's ability at analytical attempt as prerequisite for him to synthesize and from such syntheses the composition of phenomena from their component elements and processes which have risen to serve human civilization. Accordingly, the world is increasingly uniting in the campaign to make the utmost of the environment and ultimately to secure it for the future generation through the instrumentality of sustainable development. This has led to a trans-border initiative to help solve environmental problems by way of international policy convergence which is a global regulatory pattern in environmental policy through a global effort.

**Keywords: taxonomy, abstraction, diffusion, ecosystem, sustainable development**

## Introduction

Understanding the analytical abstractions of environment, should be viewed from the standpoint or within the context of separation of environment into its constituents to find out what it contains, to examine individual parts or study the structure of the whole. It therefore includes the formation of general ideas or concepts from concrete examples including a philosophical process by which people develop concepts either from experience or from other concepts. It is on this basis that the environment becomes less intense resulting in its diffusion thereby leading to more of its understanding. DeCooman (2023) is in agreement with Balasubramanian (2008) who opines that it is necessary and yet pertinent to point out that the environment is an abstraction that helps in the isolation, study and understanding of the realities of the environment. To further understand the issue at stake, it is of utmost importance to isolate or abstract any or combination of elements of the environment for a much closer observation,

examination, scrutiny or interrogation. The whole essence of such exercise is to facilitate policy making in that direction such that from the generalization of the entire environment, one is able to more specifically interrogate that aspect of the environment such as economic, health, geographical, education, political etc in a bid to create or find solutions to those challenges of the environment that have been identified.

**Contextual Discuss**

One important question anybody may want to ask in other to appreciate the topic under discussion is; what is environment? Environment is therefore all of the external factors affecting an organism including man. These factors according to Balasubramanian (2008) and Zimmerman (2009) may be other living organisms (biotic factors) or nonliving variables (abiotic factors), such as temperature, rainfall, day length, wind, and ocean currents. The interactions of organisms with biotic and abiotic factors form the ecosystem. The ecosystem as noted by Zimmerman (2009) and Robbins (2017), is that science of the ecology which attempts to explain why plants and animals live where they do and why their populations are the sizes they are. Understanding the distribution and population size of organisms helps social scientists in general and political scientists more specifically to evaluate the health of the environment. Ukpong (1994), Malmstrom (2010) and DeCooman *(2023),* have noted that organisms and their environment constantly and continually interact and both are changed by this interaction. This interaction can be parasitic, symbiotic or even neutral as the case may be. Like all other living creatures, Saferenvironment (2014) aver, that man has clearly changed his environment, but they have done so generally on a grander scale than have all other species. Some of these human-induced changes-such as the destruction of the world's tropical rain forests to create farms or grazing land for cattle-have led to altered climate patterns. In turn, altered climate patterns have changed the way animals and plants are distributed in different ecosystems.

Political Scientists and environmental economists according to Drezner (2001) study the long-term consequences of human actions on the environment in general and then abstract or isolate a specific aspect that will help to make policy for the overall wellbeing of the environment. Environmentalists on the other hand, who are professionals in various fields, as well as concerned citizens advocate ways to lessen the impact of human activity on the natural world. Zimmerman (2009) reported the empirical findings of Justus von Liebig, a German chemist in 1840 who first proposed that populations cannot grow indefinitely and hence the basic principle now known as the Law of the Minimum. Biotic and abiotic factors, singly or in combination, ultimately limit the size that any population may attain. This size limit, known as a population's carrying capacity, occurs when needed resources, such as food, breeding sites and water, are in short supply. To exemplify this, Zimmerman (2009) stated that the amount of nutrients in soil influences the amount of wheat that grows on a farm. If just one soil nutrient such as nitrogen is missing or below optimal levels, fewer healthy wheat plants will grow, it is by this means therefore that environmental diffusion comes into play; political behaviour therefore takes effect as a direct consequence of interactions of various environments.

Furthermore, Weiner (2021) agree with Zimmerman (2009) who made more empirical findings and thus posited that population size and distribution may also be affected directly or indirectly by the way species in an ecosystem interact one with the other. This is in line with the late 1960s experiment conducted by American ecologist Robert Paine in the rocky tidal zone along the pacific coast. This experiment studied an area that contained 15 species of invertebrates,

including starfish, mussels, limpets, barnacles, and chitons. Paine found that in this ecosystem one species of starfish preyed heavily on a species of mussel, preventing that mussel population from multiplying and monopolizing space in the tidal zone. When Paine removed the starfish from the area, he found that the mussel population quickly increased in size, crowding out most other organisms from rock surfaces. The number of invertebrate species in the ecosystem soon dropped to eight species. Paine concluded that the loss of just one species, the starfish, indirectly led to the loss of an additional six species and a transformation of the ecosystem.

Similarly, Weiner (2021) agrees with Zimmerman (2009) in his additional empirical findings which discovered that some 17th-century sailors routinely introduced goats to isolated oceanic islands, intending for the goats to roam freely and serve as a source of meat when the sailors returned to the islands during future voyages. As non-native species free from all natural predators, the goats thrived and, in the process, overgrazed many of the islands. With a change in plant composition, many of the native animal species on the islands were driven to extinction. A simple action, the introduction of goats to an island, yielded many changes in the ecosystem of the island; this clearly demonstrates that all members of a community are closely interconnected and further explains the ecological and evolutionary dynamics of interconnectedness. As a matter of fact, it can be deduced that species which coexist in the ecosystems must have evolved together for many generations and as such establish balanced interactions one with each other in such a taxonomy that all populations in the area remain relatively stable. Occasionally, though, natural or human-made disruptions could occur bringing with it unforeseen consequences to populations in an ecosystem.

To further show the dynamics of environmental diffusion, Porter (1995), Jorgens (2001), Halila (2006) and Weiner (2021) agree that to better understand the impact of natural and human disruptions on the Earth, in 1991 the National Aeronautics and Space Administration (NASA) in Seattle, United States began to use artificial satellites to study global change. NASA's undertaking, called Earth Science Enterprise, is part of an international effort linking numerous satellites into a single Earth Observing System (EOS), which collects information about the interactions occurring in the atmosphere, on land, and in the oceans, and these data help both natural and political scientists, lawmakers and policy makers to make sound environmental policy decisions. According to Orubu, Odusola and Ehwarieme (2004), one of the greatest challenges facing humanity is environmental degradation, including deforestation, desertification, pollution and climate change, these has been a major threat to socioeconomic sustainable development, thereby, raising so much concern for the international community. This issue of environmental degradation increases the vulnerability of the society as it affects and contributes to the scarcity of resources. Furthermore, Orubu, Odusola, & Ehwarieme (2004) opines that this has made people to become more conscious of the varieties of problems like global warming, ozone layer depletion, acid rain, famine, drought, flood, scarcity of fuel, fire wood and folder, pollution of air and water, etc. modern man has initiated a number of abrupt changes beyond the capacity of the ecosystem to adopt and adjust.

Oreja-Rodriguez and Yanes-Estevez (2006) and DeCooman (2023), are of the view that rapid industrialization is heading to significant contamination of soil and ground water. Man has greatly modified the natural process that control stability and balanced within the ecosystem, which the environment cannot absorb. The knowledge gained in regard to greenhouse effect, acid rain, ozone hole etc has made man realized the danger that he is bringing to himself. Because

of man's massive use and dissipation of energy, there is a climatic change and greenhouse effect, which is responsible for melting of ice caps resulting in submergence of coastal areas. Similarly, Oreja-Rodriguez and Yanes-Estevez (2006) posited that this is in addition to the fact that the explosive growth, expansion, and needs of the world's population accompanied by new technological advances have modified the earth's landscape. Man has exploited the natural resources in such a way that it has led to the over exploitation and lose of the ecosystem balance resulting in environmental degradation.

It is sine qua non according to Saferenvironment (2008) that a living organism man inclusive cannot live by itself alone. There is some interrelatedness and relationships for which organisms interact among themselves. Hence, all organisms such as plants, animals and human beings as well as the physical surroundings with which we interact form part and parcel of the environment. All these constituents of the environment as pointed out by Meyer, Frank, Hironaka, Schofer and Tuma (1997) and *DeCooman (2023),* are dependent upon each other and it is by these realities that they maintain a balance in nature and/or in the ecosystem. As we are the only organisms that try to modify the environment to fulfil our needs; it is our responsibilities to take necessary steps to control the environmental imbalances. In like manner, Malmstrom (2010) agrees with Meyer, Frank, Hironaka, Schofer and Tuma (1997) when he argued that, it is this interrelatedness and interactions of these organisms that result into man's political behaviour as direct outcome of his interaction with the environment. The implication of this scenario is that whenever man acts or reacts politically, such behaviour may derive from his geographical or climatic origin including his social background as well as economic circumstances. To this extent, man cannot be partial, to the contrary, however, man is always complete and total, indeed, a product of a diffused circumstance and any attempt to isolate any of the circumstance out of him, may result in an inadequate understanding of his behaviour and character and therefore inadequate utilization of his potentials. Part of the potentials of man as posited by Meyer, Frank, Hironaka, Schofer, and Tuma (1997) Kerstin, Per-Olof, and Helge (2002), and Malmstrom (2010) is his ability to appreciate when his environment needs help i.e., when the deteriorates by a way of environmental degradation which is the process by which our environment i.e., air, water and land, progressively contaminated, over-exploited and destroyed.

Degradation can be mainly grouped into;

a. Ecosystem imbalance
b. Forest deterioration
c. Fresh water degradation
d. Soil degradation
e. Air pollution
f. Global warming.

In other words, Kerstin, Per-Olof, and Helge (2002) insists that when the environment becomes less valuable or damaged, environmental degradation occurs. There are many forms of environmental degradation. When habitats are destroyed, biodiversity is lost, or natural resources are depleted, the environment is hurt. Environmental degradation can occur naturally such as act of God or through human processes. The largest areas of concern at present are the loss of rain forests, air pollution and smog, ozone depletion and the destruction of the marine environment. Pollution is occurring all over the world and poisoning the planets oceans. It is on the basis of the foregoing that one can conveniently conclude that in as much as man is a product

of or outcome of diffused environment, possibilities exist that some environment may be more influential than others in understanding political behaviour such as policy of restrictions of building construction on water-front etc.

According to Igwe (2005), abstraction is the isolation of phenomenon from its integrity, the process and consequence of a mental analysis probing into the contents of phenomena, their connections with their environment's indispensable attributes and the nature of their interrelations. As a matter of fact, implicit in any purposeful abstraction is mental construct of phenomena. In as much as abstraction create simpler or smaller images from more complex or bigger objects, they form an aspect of model-building, both of which are intricately interwoven with classification, conceptualization and generalization. Indeed, Igwe (2005) posited that as a form of model building, that which is not immediately possible in the realm of practice become possible in the realm of abstraction and thus becomes the basis for creating new forms of reality that help to enrich practice.

Abstraction, may be considered scientific or unscientific, generally on the basis of the methods involved and the objectives intended. In understanding environmental diffusion, it is very germane to identify the analytical dimension of abstraction in a bid to deeply appreciate the essence of the environment. As a matter of fact, the analytical dimension of the environment is the orderly separation of a phenomenon into its constituent elements, this being the preliminary stage in understanding its structure, as well as gaining knowledge of the nature of the interrelationships between those component elements and the principles or laws that govern the process. It can as well mean predicting the future behaviour of the phenomenon under study including being an avenue through which policies are made and built or such other actions on the bases. Igwe (2005) contends that sometimes the entire activities of man within his environment or within the ambit of the entire activities of man in his endless attempts to derive meaning out of the plethora of the apprehensions of his consciousness. Man's ability at analytical attempt has become an essential prerequisite for him to synthesize and from such syntheses, the composition and recomposition of phenomena from their component elements such that man is able to have drugs, machines of all types and several other instruments and processes which have risen to serve human civilization.

It does appear that the world is increasingly uniting in the campaign to make the utmost of the environment and ultimately to secure it for the future generation through the instrumentality of sustainable development. To that extent, a global convergence of regulatory patterns in environmental policy have been forged through a global effort. According to Kerstin, Per-Olof and Helge (2002) this is a trans-border initiative to help solve environmental problems by way of international policy convergence. For them therefore, empirical data indicate that global convergence of environmental policy can take place in the absence of any international regime. As a matter of fact, Kern, Jorgens and Janicke (2001) and Jorgens (2001) aver that policy convergence goes far beyond the area of trans-border or global environmental problems which are being addressed by international environmental agreements. It often occurs with regard to environmental problems that primarily need to be solved at the regional as well as national level such as surface and ground-water pollution, urban air pollution, or waste management. Another explanation could be that governments orient their own environmental policies to what is already being practised in other countries. Furthermore, Jorgens (2001) is of the view that the global convergence of environmental policies, then, could to an important extent be explained as a result of the international diffusion of ideas, approaches, institutions and instruments in the field of environmental protection.

**Environmental Diffusion Policy**

In order to fully appreciate and explore the potential of the concept of policy diffusion for explaining global convergence in the field of environmental policy it is necessary to determine the principal mechanisms by which policy diffusion occur as well as its main driving forces. These are mentioned and briefly discussed here under. However, the first factor has been given a little more discussion to better place its understanding in perspective.

i. ***Dynamics of the International System***

By looking at the dynamics of the international system we intend to answer the question: How and why do environmental policy innovations spread internationally? The research focus is on channels of communication or interaction which link national political units with each other. Growing inter-linkages between nation states both in terms of economic and trade relations as well as the institutional and societal interweavements may create channels for diffusion.

ii. ***National Factors***

By focusing on national factors we can give an answer to the question: Why do some countries adopt policy innovations earlier than others? The research focus, here, is on endogenous variables which may account for the propensity and national capacity to adopt environmental innovations.

iii. ***Characteristics of the Policy Innovation***

Characteristics of the policy innovation have to be taken into account when answering the question: Why do some policy innovations spread more quickly than others? In the following these groups of factors are described in more detail.

**Dynamics of the International System**

Economic, political and societal inter-linkages between nation states according to the WTO (1999), Drezner (2001) and Porter and Linde (1995) offer channels for the transfer of policies across countries. These channels differ with regard to the dominant mechanism by which policy transfer occurs. Economic inter-linkages are often perceived to create a pressure to modify regulatory policies in order to sustain or improve national competitiveness in a global economy. However, while the theoretical prediction of a downwards convergence often lacks empirical evidence the assumption that regulatory competition sets incentives to adopt innovative measures at an early stage in order to gain "first mover advantages" has not been able to identify the necessary conditions for anticipating these prospective advantages which – according to the "Porter-Hypothesis" basically motivate the pioneer policy. First mover advantages of institutional or economic nature according to Hurst and Kirby (2004) who agree with Heritier, Knill and Mingers (1996) and Porter and Linde (1995) can be stated only after the political or technological innovations had diffused beyond the national context where they were initiated. Yet, diffusion is not an automatic process. A theoretical prediction of policy convergence driven by a "race to the top"-competition between nation states has to consider a number of dynamics of globalization.

First of all, Weiner (2021) is in agreement with Kern (2000), that the degree of vertical integration in the international system, or in other words, the existence of trans-national communication channels, is crucial for the course of policy diffusion. Their existence increases the prospects of policy diffusion. Communication has to be seen as the fundamental mechanism

of diffusion as innovations must be communicated in order to diffuse. The increasing globalization of communication via international organizations, transnational advocacy coalitions or global scientific discourse offers channels for the diffusion of knowledge, best practice, perceptions of problems or the creation of common needs and beliefs.

Meyer, Frank, Hironaka, Schofer and Tuma (1997), Hurst and Kirby (2004) as well as Weiner (2021), have pointed out that the global spread of environmental discourse and organization-apart from the central role of non-governmental actors-was especially stimulated by the development of the United Nations (UN). The rise of this organizational system, with an agenda broad enough to include environmental issues, in conjunction with a more scientific perception of nature is considered as being the main driving force for the development of what has been labelled as World Environmental Regime. One of the first clearly visible results of international organization and discourse according to Jorgens (1996) in the environmental field was the first UN Conference on Environment in Stockholm 1972, which in many countries set the agenda for the development of environmental policy as a distinct policy area.

It can be seen for all intents and purposes that the growing body of literature on policy convergence as well as policy diffusion and policy transfer according to Kerstin, Per-Olof and Helge (2002) and Orubu, Odusola, and Ehwarieme (2004) indicates that these processes are neither coincidental nor driven by any one simple mechanism which can easily be identified. Instead, a complex interplay of different factors has been found to influence the international spread of policies and the subsequent convergence of national policies. Taking into account these studies according to Porter and Linde (1995), it defines three groups of factors which can be expected to affect the pattern of diffusion to include, speed, scope as well as the degree of policy convergence. The perception of environmental abstraction together with the perceptible environmental diffusions will further help in the understanding of a combination of the set and sub-sets of the environment. Accordingly, it is on the basis the foregoing that this paper interrogates the degradation of the environmental sub-sets and its attendant implications on the entire set.

**Environmental Degradation and its Effects**

Hurst and Kirby (2004), Orubu, Odusola, and Ehwarieme (2004), Wamwara-Mbugua and Cornwell (2008) agree that environmental degradation is a result of socio-economical, technological and institutional activities. Degradation occurs when earth's natural resources are depleted. These resources, which are affected, include water, air, and soil. The degradation also affects wild life, plants, animals and micro-organisms. This goes to show how and to what extent the environment is diffused and it is impacted by such degradations.

**Impacts of Environmental Degradation**

When factories produce harmful chemicals and consequently release toxic waste into bodies of water especially surface water, humans suffer. Pesticides and fertilizers can also get into the entire water system and pollute it as such, drinking water becomes contaminated. Situations like the one described are usually prevalent in the Less Developed Countries often referred to as the third world countries most of which are in Africa, Asia and Latin America. These unhealthy practices cause illnesses and avoidable deaths both in children and in adults. The United Nations Environmental Programme –UNEP- (2014) argues that as humans dump waste products, use chemicals, over graze the fields of vegetation and over fish in the oceans and seas, areas of beauty such as corel reefs are damaged and at times, the destruction is so great that it cannot be

reversed. Similarly, UNEP Annual Report (2022) emphasised the urgent need to halt the decline of biodiversity and the fragmentation of habitats. Other issues on nature covered under the report in addition to biodiversity, include health, sustainable lake management, and a universal definition of nature-based solutions. The emphasis of the report on resilient infrastructure, a greener recovery from COVID-19 and the environmental aspects of minerals and metals management reinforce the importance of circular economies.

**Major Environmental Problems and their Effect on Health and Productivity**

***Water Pollution***: The work of Uchegbu (1998) shows that this has been identified over the years, and has further highlighted the various sources of water pollution which includes;

1. Organic water from industrial plants
2. Inorganic wastes from industrial plants
3. Unknown chemicals
4. Heat from industrial discharge
5. Municipal waste
6. Sediment from land erosion
7. Acid rain
8. Oil spillage and contributions from routine operations
9. Agricultural wastes.

Inorganic wastes from industrial plants according to Uchegbu (1998) are much trickier to control and potentially more hazardous than industrial organic wastes. The later as potent as they may be are at least treatable, in or out of the plant. Chromium and Mercury are examples of troublesome inorganic substances. Another side of the problem caused by industrial wastes is that which has to do with the unknown chemicals. There is no way to tackle the problems caused by them as their formulas are not known much less their acute, chronic or genetic toxicity. Ukpong (1994) is of the view that municipal waste is yet another source of water pollutant especially in cases where combined sewers are used to empty both storm water and sanitary waste into the same surface water body usually without being treated. According to the UNEP (2014) estimation, more than two million deaths and billions of illness annually are attributable to water pollution. Water scarcity compounds these health problems thus productivity is affected by the costs of providing safer water due mainly to shortages on environmental resources, such as declining fisheries and aquifer depletion leading to irreversible compaction.

***Air Pollution***: This is the contamination of the air with gas, smoke, particles, dust and other substances. Air pollution according to Uchegbu (1998) and UNEP (2014) is the presence in the outdoor atmosphere of one or more contaminants such as dust, fumes, gas, mist, odour, smoke or vapours in such quantities characteristic and duration as to make them actually or potentially injurious to human, plant or animal life or property or which unreasonably interfere with the comfortable enjoyment of life and properties. Air pollution is basically of two types namely; natural sources which emanate from volcanic eruption, landslide, earthquake, cyclones etc. while the artificial sources are from the emission of gases and particles. In Nigeria, according to Uchegbu (1998) and Orubu (2004), the reduction in air quality is traceable mostly to overcrowding, traffic congestion, and general deterioration of the urban environment. The degradation in the quality of air is a major concern in Nigeria, hence the need to redress such imbalances by the establishment of the Federal Environmental Protection Agency (FEPA) to regulate the amount and quantum of pollutants released into the atmosphere by the various

industries, homes, commercial and industrial areas in Nigeria. Some of the indications and signs that an area has been affected by air pollutants are the presence of fumes in the atmosphere, the obnoxious smell in the air, the irritation of the eyes and respiratory system such the nostrils and lungs, the reduction in visibility, colour changes in vegetation and so on.

***Sources of Air Pollution***

a. Pollen grains
b. Fungus spores
c. Salt spray
d. Smoke from forest fire
e. Dust from volcanic eruptions
f. Automobiles
g. Industrial processes
h. Aircraft, ships, locomotives and other cumbersome engines
i. Domestic fires, domestic refuse incineration and bush burning

***Effects of Air Pollution***

Uchegbu (1998) and thedailystar.net (2014) both agree that air pollution could degrade the environment, contribute to increase in hospital admission, lead to absence from work and the work place, school and could ultimately increase mortality rate. UNEP estimates that urban air pollution is responsible for about 300'000-700'000 deaths annually and creates chronic health problems for many more people globally. Restriction on vehicles and industrial activity during critical periods could adversely affect productivity, as does the effect of acid rain on forest and water bodies.

***Effect on Human Health***

Zimmerman (2009) agree with WTO (1999) that sulphur dioxide, one of the main pollutants acts as a pungent suffocating irritant gas on the upper respiratory tract under moderate exposure, which could lead to the damage of the respiratory system. These sulphur compounds also affect visibility reduction of sunlight, unpleasant smells, irritation and smarting or stinging sensation in the eyes, nose, and throat. The ozone layer depletion by gases such as chlorofluorocarbon (CFCs), nitrogen dioxide, sulphur dioxide etc. leads to more ultra-violet (Beta-rays) radiation from the sun. The consequences of all these for example, includes the rise in all kinds of skin cancer by as much as 16%.

***Effect on Animals***

Orubu, Odusola, and Ehwarieme (2004), thedailystar.net (2014) and saferenvironment.worldpress.com (2014) posits that an animal health may be in danger when the animal feed on plants contaminated by toxic particles such as fluorine. Fluorine compounds when absorbed into plant or animals can bring about mottle and mottled teeth and a condition of the joints known as exostosis leading to lameness and ultimately death. Similarly, livestock like cattle and sheep are also known to have been victims of arsenic poisoning. Some other animals such as chickens, pigs, ducks, and dogs are known to be ill or die because of exposure to the hydrogen sulphide gas.

***Effect on Atmospheric Properties***

Uchegbu (1998) and Zimmerman (2009) are of the view that air pollutants affect atmospheric properties in the following ways; visibility reduction in the atmosphere, fog formation and precipitation, solar radiation and alteration in temperature and wind distribution. These visibility

reduction effects are primarily associated with the urban atmosphere because of increase in population. Visibility reduction is not only aesthetically unpleasant but may also lead to safety hazards. This visibility reduction also leads to a perception of a prominent dark object in the day and an intense light source at night.

***Effect on Vegetation***

The gaseous pollutants such as sulphur dioxide according to Uchegbu (1998) and Zimmerman (2009) enter the plant via the stomata in the course of their normal respiration leading to the destruction of the chlorophyll and the disruption of photosynthetic activity of the plant. Damages to plants range from collapse of the leaf tissues, bleaching or colour changes, reduction in growth rate to complete death of plants some other gaseous pollutants responsible for these damages include chlorine, hydrogen chloride, ammonia, and mercury. All these gaseous pollutants that attack vegetations are known as photoxicants. In order to survive our environmental crisis degradation and maintain the earth as a place for human habitation, we must reduce the massive pollution of the biosphere.

***Deforestation***: According to Orubu (2004), forest clearance on massive scale for agricultural development, urban growth, industrial expansion, and general pressures from increasing population have reduced the extent diversity, and stability of forests especially in Nigeria. WTO (2014) estimate that Nigeria through circles of exploitation and husbandry, destroys reforestation efforts of about 25'000 hectares a year but replenishes only about 4% of the loss. The constant practice of deforestation can bring about the extinction of plants and animals in Nigeria. The constant practices of deforestation are caused by the gaps in source of building materials, the quest for fuel and energy, hunting and the gathering of natural products. All these have added to the cause of low productivity in agricultural production in Nigeria. Death and diseases can result from localized flooding caused by deforestation. Loss of sustainable logging potential and of erosion prevention, watershed stability and carbon sequestration provided by forests are among the productivity impact of deforestation.

***Desertification****:* This is the process according to Ukpong (1994) where the lands are reduced to desert like conditions and the areas mostly affected by desertification are the savannas. Desertification of an area is usually caused by nature and fabricated activities. The natural activities include short rainfall and longer dry season, while the fabricated activities include over-grazing, over cultivation, deforestation, bush burning and general environmental misuse. Some of the effects of desertification include loss of vegetation, soil erosion, famine, hunger, disease and landslides. One of the remedial measures against desertification is the discouragement of members of the public from using fire wood as fuel by the government and in turn subsidize the price of gas. Again, government should enforce laws against the practice of bush burning and deforestation.

***Atmospheric Contamination***: This is according to Ukpong (1994) the reduction in quality of the air environment. This is caused by natural and fabricated activities. Some of the natural causes include volcanic eruption, whirl winds, earthquake etc. while the man-made causes are inappropriate solid waste disposal, gas flaring, oil exploration, industrial pollution, coastal erosion etc. the above-mentioned causes according to Uchegbu (1998) are known to affect both aquatic and terrestrial lives and contribute to bio-diversity loss. Furthermore, Uchegbu (1998) posits that ozone depletion is responsible for perhaps300'000 additional cases of skin cancer

annually and 1.7 million cases of cataracts. Global warming may lead to increase in the risk of climatic natural disasters. Productivity impacts may include sea rise damages to coastal investments, regional changes in agricultural productivity and disruption of the marine food chain.

***Loss of Bio-Diversity***: Bio-diversity according to Uchegbu (1998), Ukpong(1994), Zimmerman (2009) can be defined simply as a variety of life and its processes. Bio-diversity includes all life forms such as fungi, prozoa, bacteria, and organisms such as plants, insects, fishes, and mammals According to Ukpong (1994), loss of biodiversity is mainly caused by the destruction of habitats, as land is cleared for agricultural and development purposes. Ukpong (1994) further stated that the greatest loss is the disappearance of the world's tropical forests, which houses some 40% of plants and animal species. In Nigeria, the biodiversity loss is prominent in the oil producing areas like Rivers state, Abia State, Akwa-Ibom State, Delta State, Cross River State etc. In addition, the extinction of plant and animal species will potentially affect the development of new drugs. Biodiversity loss leads to extinction of endangered species of plants and animals. The effect of these losses is the disappearance of basic natural resources of food, fishes, tubers etc.

***Soil Degradation***: According to saferenvironment.worldpress.com (2014) degradation is the process of something being damaged, or made worse. Depleted soils increase the risk of malnutrition for farmers. Productivity losses on tropical soils according to Orubu, Odusola, and Ehwarieme (2004) are estimated to be in the range of 0.5-1.5% of GNP, while secondary productivity losses are due to siltation of reservoirs, transportation channels and other hydrologic investments. Uchegbu (1998) and Malmstrom (2010) have noted that the boomerang effect of soil degradation is direct assault on nature such that infectious diseases wingback to plague the people including those responsible.

**Conclusion**

That behaviour of man whether political or otherwise has a direct relationship with his interaction of his environment cannot be denied. That is why the government attempt at all times to formulate policies that serve as guide to man in his environment and by so doing help man to sustain the environment and society for the present time without compromising the future environment. Most of these policies are usually trans-border because it is aimed at securing a uniform measure that will secure and protect the global productive practices, that way sub-sets by way of environmental abstractions are better appreciated and the best ways of ensuring its protection are applied resulting into policy convergences and diffusions and this certainly makes for a fuller and better understanding of the Environment

**Recommendation**

The following measures serve as recommendation of this paper as a measure to counteract environmental.

a. ***Going Green***: This relates to preserving, restoring, or maintaining the environment, producing energy from renewable sources such as solar, improving and cleaning up pollution and greenhouse gases, reducing carbon emissions resulting from productive and industrial activities and conserving natural resources.

b. ***Reuse, Reduce and Rethink***: saving resources for the next generation and sharing resources with others should be the principle of green economy. This is one sure way of bringing about sustainable development. We should reduce our over-consumption, reuse

our natural resources, rethink about our over consumptive lifestyles and turn to the principles of simplicity. We need to plant gardens, conserve energy, and work co-operatively, with our neighbours to sharp resources and build resilient communities.

c. ***Green Policy***: Environmental abstraction can be related to the home, garden, food, health, technology, policy, politics, administration, economy, tourism, industrialization, urbanization, and transportation, including several other environmental sub-sets such that man in his society can make his life safer by being environmentally conscious especially through policy and legislation thus provide guide ourselves to go green. When we do something, it is essential that those activities benefit the green and our economy, so that every single step of an individual helps to solve our social and environmental problems.

d. ***Green Investment***: we shall be happy to see small business grants and loans made to green companies- those companies engaged in recycling of materials to produce new commodities, so that they can survive, thrive increase their profit margin thereby having the capacity to provide more jobs and thus help keep the unemployed out of crime.

e. ***Green Waste Management***: Waste especially solid type can be reused to generate clean and renewable power or energy. Municipal solid waste can become a source of blessing rather than cause. Green waste management puts into action the four R's- Reduce, Reuse, Recycle and Recover the resources.

f. ***Green Agriculture***: Green agriculture is the use of on-farm resources including crop residues, organic fertilizers, cropping diversification, mixed cropping, crop rotation and no use of chemicals for the maintenance and enhancement of biodiversity to make the agricultural system environmentally sustainable. Above all, to avoid plant and animal genetic modification so as to keep the biosphere in its natural equilibrium for purposes of sustainable development.

g. ***Green Transportation***: Green transportation is any sort of transportation or vehicle, which has no negative impact on the environment. Walking, bicycling, electric scooters and bikes, green vehicles (powered by solar, electricity, hydrogen, wind or bio-fuels), car sharing, public transports (buses or trains, subways) are considered as green transportation. This is because less dangerous gases emitted into the atmosphere owing to fewer vehicles being on the road. In addition, walking and bicycling are healthy exercises for the human body.

h. ***Pure Food Security***: The goal of pure food security is to ensure that the public food supply is safe from disease caused by infection from human handling or by contamination which can occur during all phases of food production including cultivation, harvesting, processing, packaging, storage and cooking.

i. ***Biodiversity Conservation***: The main threat to our biodiversity is habitat loss, habitat fragmentation, habitat degradation, over exploitation of natural resources, poaching, piracy, urbanization, industrialization, shifting cultivations, over population, dependency on natural resources and climate change. Adaptive collaborative management integrated conservative and community-based co-management can improve the current scenario.

j. ***Ecotourism***: The universal definition of ecotourism is "responsible travel to natural areas that conserves the environment and improve the well-being of local people" the nexus

between conservation, local people and sustainable travel in ecotourism are; minimum impacts, environmental and cultural awareness and respect including direct financial benefits for conservation and local people especially arising from monies spent by tourists in such areas.

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