

## **A Philosophical and Historical Enquiry into the Nature of Environmental Problems**

**By**

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### ***Abstract***

*Environmental problems constitute challenges to ecological prosperity. This study analyses such problems and their implication for environmental ethics. The study argues that most of the resources of nature are not readily available for human ends. For this reason, people exploit and modify the environment to ensure congenial living. This utilitarian intervention, inevitably, leads to some inseparable negative consequences, which now put the environment and its inhabitants in danger of survival and harmonious living contrary to their original aim and intention. The study stipulates that environmental problems are not new, except the intensity and the amount of attentions they now attract. It embarks on a wide-range analysis of some of these problems,*

*including some of their economic, social, political, health, moral and intellectual implications. It further argues that the dangers, which these problems portend, are enormous, and they are threatening. It also argues that environmental problems are not only anthropogenic (human induced); some non-human parts of nature do intercept other parts; and such interceptions do lead to some environmental problems and the consequent degradation of natural resources. But the impact of non-anthropogenic factors is negligible in comparison to that of anthropogenic agents. The study holds that nature is at risk of losing its regenerative capacity mainly due to the intensity of human induced problems. It, therefore, concludes that there is the need for a careful moral relation with the natural environment to assuage these problems, prevent reoccurrence, and ensure environmental sustainability, human survival and harmonious living.*

**Key Words:** Environment, Utilitarian purposes, Human intervention, Ecological threats, Survival threats, Moral care.

## **Introduction**

The natural environment contains all the resources needed for human well-being. But these resources contained in nature are, most often, not readily available for human end-use. Therefore, man has to interact with nature in order to make them meet his needs, minimize his pain, and maximize his pleasure. This feat was achieved because in the course of time, humans have devised, through trial and error, experimentation, chance occurrence, and necessities, ways to make these abundant resources of nature available for his survival and comfort, through agriculture, lumbering, hunting, fishing, urbanization, genetic engineering, science and technology. However, human interaction with nature, has not only altered the natural environment, it has also generated some problematic degradation of environmental resources.

From the point of history, the challenges posed by certain changes in the environment, due to human interaction, constitute topical issues in our contemporary time. Human exploitation of the environment began with the use of primitive stone tools. A higher level of sophistication was attained in the Neolithic revolution, when man progressed in the direction of sedentary agriculture and domestication of animals. This was followed by the metal age which climaxed in the invention and use of iron for utilitarian purposes. Further progress in the 18th century ushered in the industrial revolution, which marked the adoption of the laws of physics, mechanics and chemistry in production processes and in manipulating nature. Science and technology have become so efficient and sophisticated that they now aid genetic engineering through which new variants of biological species are created. Therefore, science and technology, over the years, have enhanced man's capacity to exploit natural resources and alter the environment, and often, with detrimental consequences: Man's activities have increasingly degraded the environment. The intensity of degradation has increased as technological interventions became more sophisticated and elaborate, to the extent of vitiating nature's capacity to sustain life and guarantee sustainable development. This is compounded by the growth in human population, which has been estimated to be seven billion.<sup>1</sup>

Prior to the era of industrial revolution, natural resources were, to a large extent, adequate; interaction with nature was relatively simple, and nature had better prospect of replenishing itself. It was then believed that natural resources were boundless.<sup>2</sup> But as world population has continued to grow, and as human need is on the increase, the demand on natural resources increased correspondingly. Notably, these demands have intensified human interaction with nature beyond the capacity it could regenerate by itself efficiently. Nature has, therefore, begun to manifest signs of being overstretched, and this is a threat to its continued existence. These threatening signs (which are the focus of analyses here) include pollution, erosion, desertification, overpopulation, acid precipitation, resource depletion, global warming, depletion of the ozone layer, land

degradation, garbage treat, climatic change, flooding, loss of biodiversity, and extinction of species, among others.<sup>3</sup> Some of these problems overlap. Although interactions with nature has led to some improved living conditions, but given the negative consequences (with which we are now faced), do these gains worth the trouble?

Environmental problems have been with humanity since antiquity. Therefore, it is correct to say that environmental problems are not new; what is new is the increase in the degree of impact on nature, the degree of the resultant problems, and the amount of attention which people are now willing to devote to them.

Pieter Glasbergen and Ron Corvers<sup>4</sup> relate environmental problems in ancient Mesopotamia many centuries ago. Here, large-scale irrigation led to the salinization of fertile agricultural land. According to them, this occurrence was one of the factors which ultimately brought about the decline of Mesopotamian civilization. They also write that in medieval times, many people living in towns and cities suffered greatly as a result of widespread smoke pollution and contaminated water supplies. Similarly, the industrial revolution, which started at the turn of the 19th century, had a dramatic effect on the quality of the physical environment, not only in terms of public health, but also of the disappearance of all sorts of age-old natural features. Pieter Glasbergen and Ron Corvers put it that in these instances of environmental problems, certain changes took place in the physical environment, which were either difficult or impossible to reverse.

William Cunningham and Mary Ann Cunningham write that Plato lamented land degradation that denuded the hills of Greece in the fourth century B.C. Plato complained that Greece once was blessed with fertile soil and clothed with abundant forests of fine trees. As the trees were cut to build houses and ships, heavy rain washed the soil into the sea, leaving only a rocky "skeleton of a body wasted by disease. Springs and rivers dried up while farming became all but impossible."<sup>5</sup> Cunningham and Cunningham argue that, "[a]lthough many earlier societies had negative impacts on their environments, recent technological innovations have greatly increased our

impacts.”<sup>6</sup> Environmental problems can best be seen today as global issues and problems and they could be understood from the following perspective.

### **Anthropogenic Induced Environmental Problems**

This section is devoted to the analyses of the kinds of environmental problems, which result from human intervention with the natural environment.

**Overpopulation:** Until a few hundred years ago, human population was small, compared to what we now have.<sup>7</sup> Reproductive technology, gene therapy, improved dietary system, medical breakthrough, social security, political stability, sanitation, provision of drugs, as well as genetic engineering, among others, have contributed to the increase in population. Population constitutes an environmental problem when available resources are inadequate for the available number of people. Consequently, there is pressure on the resources available to meet human needs. This is referred to as overpopulation. The problems of environmental resources, *vis-a-vis* population growth, are cyclical and they fortify each other. While the availability of nature’s resources for human use triggers population increase, population increase intensifies the exploitation of nature’s resources and the consequent environmental feedbacks.

The view of Han Fei Tzū, a Chinese philosopher and legalist of antiquity, between 300 and 200 B.C., indicates that the problem of population, against the backdrop of a world of limited resources, is not new. He traces the problems of scarcity, poverty, poor standard of living, hunger, and social vices to population increase. According to him, it is not human wickedness that is responsible for social ills but the inadequacy of the resources of nature to meet the need of an increasing human population. Han Fei Tzū captures this thus:

In the past when men did not plough, they had plenty of natural kernels and grains to eat. When women did not weave, they had plenty of furs and

feathers to wear. Though not engaged in labour, they lived on rich food. All that was *possible* because men were few and things *were* many (italics mine). Therefore, there was no quarrel among the people. So it was that even without large rewards and heavy punishments, the people could be kept in peace. Now, suppose there is a man who has five sons, each of whom in turn has five. Then, even during the life of the grandfather, there are already twenty-five descendants. Suddenly, therefore, men are many and things few. The people, though they work hard, live on poor food. This leads to quarrels among the people.... Thus, the moderns strive against one another not because they are wicked but that things are few.<sup>8</sup>

From his submission, we can infer that Han Fei Tzū would blame some social ills of today, such as bribery, corruption, embezzlement, kidnapping, oil bunkering, and some other similar ills of our time, on limited natural resources. This shows the evident connection among overpopulation, environmental scarcity and social disorder.

Tertullian's position also shows that the problem of population pressure over available resources is not new. As far back as A.D. 200, he holds that:

Most convincing as evidence of populousness, we men have actually become a burden to the earth, the fruit of nature hardly suffice to sustain us, there is a general pressure of scarcity giving rise to complaints, since the earth can no longer support us. Need we be astonished that plague and famine, warfare and earthquake, come to be regarded as remedies, serving, as it were, to trim and prune the superfluity of population.<sup>9</sup>

Reverend Thomas Malthus thinks along this line with respect to the England of his time. He observes that while population was growing in geometric proportion, food supply was growing in arithmetic proportion. He, therefore, feared that if this trend of diametrically opposed growth continued, people would run out of food and famine would ensue and people would face hunger, disease, and war. But most people criticized Malthus' position as a pessimistic and utopian prediction by pointing out that a perpetual state of worldwide misery had never occurred, and that, among others, it is possible to supply food to England from other nations. This criticism, however, is not tenable because, if the trend continues, the supplying nations would also run out of food. They would, consequently, be faced with the problem that was originally England's. Besides, when the problem becomes globalized, there will be no succour from anywhere. Secondly, the fact that perpetual state of worldwide misery has not occurred does not mean it will not or will never occur. To think this way is to logically rely on inductive faith; but illogically undermining the fact that induction can at times be dubious, and thus produce results contrary to expectations or its accepted procedure. Nature can be wringed or manacled contrary to inductive expectation. Existentially speaking, and pragmatically too, the glaring nature of hunger, poverty, malnutrition, among others, and their associated problems of diseases, conflicts, wars, illiteracy is evident. These problems cannot rationally be denied in most parts of the world today.

Some scholars argue that the world can accommodate many more people. They point to the example of the Netherlands. John Zeaman writes in 2002 that "[t]he Netherlands is a small country with a population density of 385 people per km<sup>2</sup> (that is 13 times the density of the United States and 128 times the density of Canada). Yet it enjoys a very high standard of living. Most people have enough to eat, good housing, good jobs, leisure time, good medical care, and so on." Therefore, the overpopulation sceptics argue that we have nothing to fear from high population. This is what Demographers call the 'Netherlands fallacy'. Demographers "point out that

the Netherlands uses roughly seventeen times more land than there is within the country for food and energy alone. The Dutch are importing or *borrowing*, carrying capacity from someplace else." They, therefore, argue that "[i]f the rest of the world tried to live with 385 per km<sup>2</sup>, the way the Netherlands does, there would be no extra land for anybody to import from. In other words, the Netherlands can exceed the carrying capacity of its own land only because other countries are living below the carrying capacity of theirs."<sup>10</sup> This can be explained with another example.

According to the United Nations, America and Western Europe are the highest consumers in the world. They live many levels above the subsistence level. They constitute the world's richest people and few per cent (1/6) of the world's total population, but consume 80 per cent of the world's resources, while the 5/6 poor consume only 20 per cent. According to the United Nations, "if the entire population of the Earth were to consume as much as the average American or West Europeans, it would take three planet Earths to supply the necessary resources.... [T]he developed countries have so far been able to live the way they do because so much of the world does not live that way. But what happens when they do?"<sup>11</sup> According to John Zeaman, the fact that we are rapidly using up some resources that will take thousands or hundreds of thousands of years to replace alarms many scientists and environmentalists who believe we are overshooting the Earth's carrying capacity and squandering a precious inheritance.

In 1968, Paul Ehrlich, a biologist and the best known of the modern-day Malthusians, wrote *The Population Bomb*. In this book, Ehrlich holds fast to his Malthusian position that humanity is courting disaster and cannot expect to keep pulling new tricks out of its hat. Unlike Malthus, Ehrlich goes beyond the relationship between population and food supply, to examining the capacity of the entire planet, its ecological systems and all its resources to support its entire population.<sup>12</sup> In *The Population Bomb*, Paul Ehrlich describes a stark future for the planet with too many people, dwindling resources, massive starvation, and environmental calamity.

Ehrlich argues that we have the biological urge, reinforced by culture, for more reproduction. He puts it summarily that the world's population will continue to grow as long as the birth rate exceeds the death rate. The basic problem, therefore, is that there is not enough food today. How much there will be tomorrow is open to debate. If the pessimists are correct, massive famines will occur soon. According to Ehrlich, so far, most of the evidence seems to be on the side of the pessimists. He, therefore, admonishes that we plan on the assumption that they are correct. Again, he argues that unless we take the "birth rate solution," in which we find ways to lower the birth rate, then, the "death rate solution," in which ways to raise the death rate –war, famine, and pestilence – will find us.<sup>13</sup> This is a worse solution.

There are many issues raised against this book, concerning failures of predictions and the gloomy character of the book. But forty years after *The Population Bomb*, Paul Ehrlich and Anne Ehrlich published *The Dominant Animal: Human Evolution and the Environment* where they had the opportunity to revisit some of the claims made in *The Population Bomb*, respond to some criticisms, and project new views relentlessly. This book is an examination of how the humans of today are creating the world of the humans of tomorrow, and what it will take for our civilization to survive. The central message of this book is that "[w]e, as the dominant animal, have so altered the environment and so damaged our life-support systems, that the stresses on the living world are similar to those produced by a meteor strike in many ways. We may be facing the same kind of massive extinctions and changes in climate that the Earth saw when dinosaurs were wiped out by an extra-terrestrial body."<sup>14</sup> In assessing the merit of *The Population Bomb*, and in response to some of the criticisms of the book, Paul Ehrlich holds that the book is too optimistic because there are many calamities which have occurred, and some dangers with which we are now faced with, which he never predicts in that book. Ehrlich maintains his Malthusian position that humanity is courting disaster and cannot expect to keep on manipulating the situation or tricking nature successfully all the time. Some

of the insistent problems, which result from overpopulation over the centuries, include degradation and depletion of natural resources, famine, disease, violence and war.

**Resources depletion:** The depletion of natural resources is one of the major problems, which humanity contends with today, in order to meet human needs. Most other environmental problems are connected with it in one way or the other. As a result of human interaction, the resources of nature, whether renewable or non-renewable, have been seriously tampered with. Due to overuse, most agricultural lands lose their fertility. While fields are overgrazed, forests turned into grassland. These excesses precipitate erosion and desertification. Besides, bushes are overhunted of animals and rivers overfished while chemical usages degrade the quality of land, water and air. There is also the problem of deforestation due to over-logging, bush burning, farming, grazing, urbanization, industrialization, and so on. Deforestation is a threat to tropical rain forests. The magnitude of these impacts make the environment to lose its resources and regenerative capacity, and, thus, unable to meet human needs. These depletions pose threat to human survival and environmental sustainability. Just like the population problem, the problems of resource depletion, which we are faced with today, are not new. Sometimes, resources are depleted mildly or excessively, either due to greed, negligence, ignorance, or due to real human needs. In whatever way they are excessively depleted, feedbacks are always devastating, leading to scarcity, violence, war, social disorder, and even the collapse of civilization.

As noted earlier, some scholars argue that the environmental problem of resource depletion is not new. Jared Diamond investigates the cause of collapse of civilization, due to depletion of resources, using deforestation as a case in point. This investigation by Jared Diamond<sup>15</sup> is concerned with how the human impact on the environment has led to the collapse of past societies. According to Diamond, there is overwhelming recent evidence from archeology, and other disciplines, affirming that some

mysterious collapse consisted of self-inflicted ecological suicides. Some societies that destroyed themselves in the past, because of their inability to master their environmental problems, include the societies of the Fertile Crescent, where agriculture and metal tools arose, Mycenaean Greece, Easter Island and some other Pacific Islands, the Western Roman Empire, Classic Lowland Maya civilization, the Anasazi in our Southwest, Angkor Wat in Cambodia, Great Zimbabwe in Africa, Cahokia near modern St. Louis, Norse Greenland, Harappan Indus Valley civilization, and so on.

As Diamond argues, these collapses are relevant to the environmental problems that we face today. Some current environmental problems, many of which destroyed past societies, and which are the main threats to us today include water problems, problems of deforestation, the impending end of the tropical rain forests, overfishing, soil erosion, soil salinization, global climate change, full utilization of the world's fresh water supplies, our approach to a photosynthetic ceiling, exhaustion of cheap energy resources, accumulation of toxic chemicals in water, food, and soil, increase in human population, and increase in the per capita impact of our population. Diamond focuses on deforestation, which is one of the major environmental threats that we face today. He uses Easter Island in the Pacific Ocean, which was originally covered by a tropical forest, as an example of a society that did collapse because of inadvertent deforestation.

What is the ecological cause of the collapse of Easter Island society?<sup>16</sup> After their settlement in A.D. 800, the inhabitants of this Island cleared the forest for a number of reasons, such as farming, firewood and production of dugout canoes for fishing. They hunted for land and sea birds, and cut palm trees for food and to transport statues. Roads were prepared to transport their works - statues. In short, they exhaust all other available resources for their purposeful activities. By the time Easter's population grew after its settlement in A.D. 800, until it reached between 15,000 and 30,000 people around 1620, most of the trees had been cut down and several species of birds had disappeared from the environment, leaving only some species of the sea bird. The exhaustion of the forest resources made it

practically impossible for the inhabitants to continue any usual, useful or meaningful activities. People then started starving and socio-political instability set in. With the end of the availability of dolphins, as the largest animal edible on Easter Island, Easter Islanders turned to humans as the next largest animal available to them. According to Diamond, Easter Island society collapsed into an epidemic of anthropophagy (cannibalism). Between 70 and 90 percent of the population consequently died out. After the population had crashed, there was no possibility of rebuilding the society because the trees and the fertile soil that were the basis of purposeful activities in that society were completely depleted. This example shows the extent of the calamity into which environmental degradation, famine and scarcity can plunge humanity. We must care for our global environment, if we must avoid a repeat of such an historical accident.

Now, Diamond is set to impart a lesson for the present world. He begins this way. Easter Island was isolated in the Pacific Ocean. As the trees were cut down and people had no more canoes, they could not escape and there was nobody to come to their help since it was an extremely remote and isolated island. According to him, Easter Island, isolated in the Pacific Ocean, is seen as a metaphor for Planet Earth, isolated in the universe. If we too get into trouble, there is no place we can go, and nobody will come to help us. Therefore, we should learn from history lest we repeat history. Today, we run a big natural experiment, but it is a worldwide natural experiment. If we do not run it well, then, the entire world may end up like Easter Island. According to Diamond, there are six and a half billion people today, whereas there were only 15,000 Easter Islanders. Today, we have metal tools and nuclear power whereas the Easter Islanders had only stone chisels, and so we have much more potent destructive technology.<sup>17</sup> But there is a difference. According to Diamond,

we have a great advantage over the Easter Islanders. Unlike the Easter Islanders, we have archeologists, books, and television, and so we can see the environmental messes that are being made

elsewhere in the world, and we can also see the environmental messes that have been made in the past. We thereby have the possibility of learning from other societies, a possibility that Easter Islanders did not. We can learn which environments are fragile and where you have to be more careful, and that turns out to be rather complicated. We can learn why it is that societies may make mistakes, and so we can alert ourselves to the risks of unsuccessful group decision making.<sup>18</sup>

If past societies collapsed due to environmental problems and challenges, if the same problems that led to their fall are the same challenges we are faced with today, and if we have at our disposals more destructive instruments of intervention with nature than they had, the implication is that we and our environment are more prone to collapse, particularly due to the disruptive instruments at our disposal, unless we use them wisely. The fact and the knowledge that some societies have collapsed put us not only on alert that our society is not immune to collapse. More importantly, this awareness also puts us on guard against what we have learned from their examples, particularly that we ought to use with prudence the interactive means at our disposal.

Not long ago, Edward O. Wilson, looking at the tremendous loss of biodiversity due to human depleting tendencies on nature, says that he feels encouraged by our scientific knowledge but discouraged by the destruction of the principal reservoirs of biodiversity. Humankind benefits greatly from the conservation of earth's biodiversity because nature's biodiversity is a reservoir for medicine against diseases, including dangerous and deadly ones, and helps to save lives of millions. But the concern is that in the large scale destruction of vegetation, "[m]an may inadvertently lose undiscovered resources with potential medicinal and nutritional value."<sup>19</sup>

Very recently, Thomas Homer-Dixon,<sup>20</sup> in his book *Environment, Scarcity, and Violence*, makes connections between the environment, scarcity, and violent conflicts. He examines how scarcity of environmental resources can induce violent conflicts. Homer-Dixon argues that the expected population in the future and the rapid growth of global economy will spur demand for natural resources. The world will consequently face growing scarcities of vital renewable resources. These environmental scarcities will have profound social consequences, such as violence in different faces. These environmental scarcities, according to Homer-Dixon, will arise from the degradation and depletion of renewable resources, and the increased demand for these resources, among others. In his opinion, this scarcity will lead to deepened poverty, sharp social cleavages, and weakened social institutions, among others. Violence will result from these social effects. Although he believes that human ingenuity can reduce the likelihood of conflicts, he argues that the violent consequences of scarcity should not be underestimated, especially because about half of the world's population depends directly on the local renewables for their day-to-day well-being. He opines that in the near future, growing scarcities will affect billions of people with unprecedented severity and at an unparalleled scale and pace. This is because scarcities of renewable resources will be worsened in many parts of the developing world. Population growth, rising resources demand and inequalities in resource access will make scarcity affect many environmentally sensitive regions, with unprecedented severity, speed and scale.<sup>21</sup> What these portend is that human induced environmental pressure will affect the socio-physical and biological future. For example, the loss of biodiversity from deforestation will limit the opportunities of future generations to create new crops and medicine. Scarcity may lead to war, terrorism, and so on, among people and nations.

According to Homer-Dixon, “[p]reliminary research indicates that scarcity of critical environmental resources – especially of cropland, freshwater, and forests – contribute to violence in many parts of the world.”<sup>22</sup> The complex causes of environmental scarcity is “the depletion

and degradation of a resource..., the size of the resource-consuming population, and the technologies and practices this population uses in its consumption behaviour.”<sup>23</sup> This shows that ecological imbalance can lead to social problems of a high magnitude. Violent conflict may aggravate existing environmental scarcity, as some of these resources may be destroyed or further degraded in the course of the violence. This indicates the extent to which the scarcity of resources can seriously undermine human well-being.

**Pollution:** Pollution is one of the effects, which result from human interaction with nature. Water, air, and land are polluted with refuse, remnants, chemicals, and so on, from homes, offices, as well as from agricultural and industrial activities in the process of interaction with Nature. Chemical pollution puts some plants and animals at risk. It reduces the quality of the total environment and puts ecological sustainability and survival at risk. Not only these; chemicals infuse into food and are eventually consumed by humans. Even automobiles and supersonics release fumes and sound as chemical and noise pollutions respectively.

Paul Thompson<sup>24</sup> writes that *Silent Spring* by Rachel Carson is the first in a long line of critiques identifying environmental impact of chemicals used in agricultural production. Carson feared the intensity of chemical use and the ecological threat they portend beyond human expectation. She argues that such intensity can induce possible extinction of species and the collapse of the environment as a consequence. Carson’s arguments were reiterated and extended in Frank Graham’s 1970 book, *Since Silent Spring* and in Robert van den Bosch’s *The Pesticide Conspiracy* (1978). While Carson notes toxic effects upon non-target species, Van den Bosch identifies unintended consequences that typify the class of ecosystem outcomes of intense interest to environmentalists. According to Van den Bosch,<sup>25</sup> chemical pest control ignores ecological forces that control insects. Insecticides or biocides kill natural enemies of insect pests, and eradicate the natural predators and parasites. A biotic vacuum is then created where

the surviving pests thrive without predators or parasites. Continued spraying becomes a necessity. In this way, chemical companies make their effects upon farmers' decision to use more pesticides and contribute to the treadmill of chemical pollution. The problem Van den Bosch has with chemical insecticides is that their costs outweigh their benefits. He argues that concern about the effects of pesticide on human health had become commonplace among urban consumers. There is the problem of acquired pesticide resistance. Some insects became resistant to the chemicals used on them.

There is, therefore, a broad range of unwanted consequences from chemical agriculture. David Pimentel<sup>26</sup> notes that the energy used in the manufacture, transport, and application of chemicals severely compromised the energy efficiency of farming. According to him, the growth in consumption of pesticides poses risks to human health. He, therefore, mounts an argument for drastic reductions in pesticide use.

Although the uses of some chemicals have been banned in some advanced countries, their shipment for use in developing countries poses some other dangers and streams of criticisms.<sup>27</sup> For example, pesticides, long banned in the United States, are used extensively in developing countries for many years, and are still being used in some applications. Critics have argued that the export of these banned chemicals causes significant human health risk to agricultural workers in other countries, and eventually to developed country consumers, who consume fruits, coffee, and other products that may contain some residue of long banned chemicals. The list of unwanted effect and unintended consequences of pesticides is much. Chemical use and its impact is not limited to agriculture. As argued earlier, they have impact on air, water, and land. Even carbon dioxide and methane gases turn the atmosphere into a greenhouse.

**Land degradation:** The natural quality of land has been tampered with seriously by human beings. Most farmlands are overused such that the fertility of the soil is lost. This, in some cases, leads to soil erosion due to

tillage, irrigation, and bush burning. Some lands have been converted to water bodies and industrial estates; some have been concretized, due to housing and other erected structures for schools, religious purposes, markets and road constructions. Some lands have been lost to mining, irrigation, oil exploration and exploitations, refuse dumps, and receptacle for industrial wastes.

These have in their different ways and capacities, contribute to flooding, soil salinity, contamination of ground water, erosion, and loss of farmland. They also contribute to the loss of species, loss of habitat, change of ecosystems, and even global warming and climate change. All these, in one way or the other, individually or collectively, contribute to the threat of human survival, reduce the quality of the environment, and ultimately threaten environmental sustainability. These various problems reduce the available lands for farming purposes and soil fertility. The loss of soil fertility leads to the use of fertilizers and other chemicals to boost agricultural production. The residues of these chemicals are retained in these foods, and are injurious to human health when consumed. They also cause physical injury to users due to ignorance and mal-handling. The limited availability of farmlands for farmers leads to scrambling and its social consequences, such as war and violence.

**Garbage threat:** Garbage are pollutants. They contribute to land degradation and impede the quality of the whole environment. There is a serious problem of what to do with the wastes generated in homes, offices, industries, and so on especially the non-degradable ones. Some lands have been converted by humans to refuse dumps and as receptacles for industrial wastes. Some open lands are littered with indiscriminate dumping of wastes such as chemical, mechanical and electronic wastes, polythene, and other degradable and non-degradable materials, such as aluminium, copper, plastic, and so on. These dumps do not only impede percolation and flow of rain water, they also contaminate and reduce the quality of soil, air and water. Thus, the use of refuse dumps and receptacles

for industrial wastes as solution to garbage problems is far from ideal. "First, since much of our trash is non-biodegradable plastic, we are quickly running out of space. Second, landfills pose risks to surface and ground water. For combustible waste, the chief alternative is incineration, which has its own problems." One of such problems is that the ash must be treated and then disposed off properly, which of course is not always done. Besides, "the gases released during incineration contribute to air pollution."<sup>28</sup> Refuse dumps reduce the size of available land for productive human economic activities. The odours emitted from refuse dumps constitute health hazards to people living in the neighbourhood and passers-by.

**Erosion:** Erosion is one of the effects of human interaction with the natural environment and it has become a source of threat to human and ecological survival in some parts of the world. Among the different kinds of erosion, soil and wind erosion, which result from human disruption of the natural environment, appear to be the most devastating. Soil erosion results from agricultural practices due to soil tillage, mismanagement, over-grazing, irrigation, and other means, such as poor flood control, concretization, poor percolation, and so on. As a result of erosion and flooding, families and communities are displaced; some are under threat, crops are lost, farmlands are destroyed, and the total available land mass for human and economic uses are reduced. This has led to scrambling for available space and its inseparable crises, including overdependence on available land, famine, food shortage, and so on.

The devastating impacts of wind erosion result from desertification, and insufficient vegetation which could have served as wind break. The severity of wind in turn leads to the destruction of available trees, food crops, collapse of (infra)structures, such as buildings, bridges, electric poles, media and communication masks, and so on. These lead to the disruption of media services, poor electricity supply, ruin, displacement in business, and series of other economic losses. The impacts of wind erosion affect

effective running of organizations and governments, as well as their policies. These policies, which result from adverse effect of economic loss, due to wind, have adverse effect on people. This in turn leads to more impartation on the environment by people more impoverished by existing policies to eke a living.

Another impact of wind erosion is that it wears off the top fertile soil for farming. This leads to poor yields, further consequent human impartation to meet some basic needs and the use of chemicals to boost crop yields, with all their associated problems. It also carries pebbles and some heavy materials injurious to people and their economic valuables. The impacts on trees displace arboreal and land habitats, thereby causing the death of some animals, dis-equilibrating the ecosystem, dis-balancing the web of life, and sometimes, causing epidemics and pest invasions. Erosion in whatever form leads to species' displacement, habitat change, disruption of food chain and food web, economic loss, disruptions of governmental and non-governmental policies, and their consequent impacts on people. Ultimately, it impacts negatively on the ecological whole.

**Desertification:** Desertification, also called desertization or desert encroachment, often result from deforestation due to over logging and over grazing, or from prolong droughts that may partly result from them. It also results from poor agricultural practices and land mismanagement. In this way, vegetation shrinks, or is lost. Then the desert continues to encroach into a *hitherto* vegetated area. Thus, desertification leads to the loss of forests, adverse weather, habitat change, change in the socio-economic culture of a people, land and wind erosion, insurgent tornadoes, global warming, displacement or loss of species, among others, and all their associated effects. Desertification reduces the land mass for viable agricultural and some other economic activities. It ebbs lumbering. These affect people's economic activities and eventual loss of jobs and profession. Desertification does not only lead to social consequences, such as war and violence, it also contributes to ecological degradation and instability. Not

only these, it can as well lead to problems similar to those generated by water and wind erosion, including climate change.

**Climate change:** The climate of the environment has changed significantly and it is still changing. Climate change results significantly from deforestation, pollution, desertification, industrialization, depletion of ozone layers and exploitative activities, among others. Some of the effects of this change in climate include ecological change, loss of habitat and species, global warming and flooding and all their resultant consequences. The climate which human beings, other animals and plants have been adapted to is altered due to human intervention in nature. It is possible for such alteration to make life impossible for species with less adaptive capacity. This will inevitably lead to change or displacement in the structure of the web of life – food chain and food web. Besides, if change is so radically enormous, it can make the environment uninhabitable to many species. And once some species go into extinction, other species, which depend on them, will face survival and adaptation crises. Climatic change is one of the ominous global threats facing the environment and its inhabitants today.

**Depletion of ozone layers:** Depletion of the earth's protective ozone layers is one of the environmental problems which continue to abound. Ozone depletion results maximally from chemical pollution. The impacts are similar to those of climatic change. Apart from this similarity, they also contribute directly to climatic change and global warming. The ozone acts as a shield against the sun's ultraviolet rays. Jeffrey Olen, Julie Van camp, and Vincent Barry argue that "[w]ithout this shield, or even with a thinner shield, it would result in a significant increase in skin cancer and diseases of the immune system. It would also lead to considerable damage to food crops and phytoplankton marine plants that are a vital link in our ocean's food chain."<sup>29</sup> Even when the depleting agents of this layer are stopped, they are very long-lived in the environment and it would take many years for the ozone hole to disappear.

**Global warming:** The average temperatures of the world have changed in the passage of time. The atmosphere grows warmer with an increase in greenhouse gases, most notably carbon dioxide. Again, Jeffrey Olen, Julie Van Camp, and Vincent Barry argue that the modern industrial world, chiefly through increased use of fossil fuels and through deforestation, is witnessing a sharp increase of greenhouse gases. They write that using computer models, scientists predict “an increase in the earth’s temperatures... from three to nine degrees by the middle of the twenty-first century.” Such an increase “would lead to severe inland droughts, resultant food shortages, coastal flooding, mass extinctions of species, and increased pollution in overheated cities.”<sup>30</sup> They add that, although most scientists agree on the dangers of global warming, the solutions are the subject of many debates. For example,

[t]he Kyoto Protocol, an international proposal for emission reductions, was rejected by the U.S Senate in 1997. The treaty imposed restrictions the Senate thought were unfairly burdensome on the most industrialized nations, including the United States.... Much of the current debate centres on consequentialist arguments, such as the economic cost to industry and the possible loss of jobs resulting from the proposed measures to reduce global warming.<sup>31</sup>

**Acid Rain:** Acid rain is caused primarily by pollutants from the burning of fossil fuels, such as carbon dioxide, sulphur dioxide, and nitrogen oxides. “These pollutants, which can be carried thousands of miles by the wind, mix with other chemicals in the atmosphere to form corrosive poisonous compounds that are washed back to earth by rainfall.”<sup>32</sup> Acid rain has a wide range of effects, such as damage to rivers and lakes, ground water, soil, animals, forests, buildings and all corrosive objects.

**Extinction of species:** One of the most significant and devastating effects of the human disruption of nature is the extinction of species. Extinction of species can result from most of the problems already analysed, which result from anthropogenic factors. The degradation of the quality of the environment, due to extinction, is a pointer that all is not well. Apart from the fact that lost species place limitations on the human use of, and experimentations with, such species, it bars the future generations from them eternally and from any possible benefit or utility that could have resulted from them. The extinction of species is a pointer that some other species are also susceptible to loss. It suggests that the environment may be degraded to the extent that it puts even human beings in danger of extinction, since humans are not immune to what happens to other species. This means that those factors which generated the extinction of non-human species can as well lead to the extinction of the human species. "Though the problem of species extinction is most acute in the Amazon, development of land," the use of chemicals and many other activities "by humans throughout the world is causing the loss of species at a rate estimated to be as high as one a day."<sup>33</sup> This is a threat to species' diversity and a deprivation of valuable utilities which would have otherwise been derived from them.

The various human interactive means explained above have variously altered, and are still altering, the course of nature. It is important to note that non-human natural agents also have impacts on the environment. But these impacts do not portend danger near those which threaten from the human interaction.

### **Some Non-Human Deplete-able Interventions**

Non- human animals, plants, and even non-living things, including forces of nature, just like humans, in the process of interacting with nature, also alter the vitality and course of nature. These non-anthropogenic variables produce some consequences similar to those which result from anthropogenic agents. When the consequences are severe and devastating,

they are commonly referred to as natural disasters. These alterations affect eco-balance. In fact, some of these occurrences are inimical to environmental prosperity and human well-being. But the impact of non-human agents is considerably lesser in degree compared to that, which result from human agents. They can hardly alter the course of nature significantly as to warrant the danger of human extinction and the extinction of the terrestrial globe. In some cases, nature, with an inbuilt regenerative capacity, may be able to replenish itself or regenerate what has been destroyed. But today, we cannot say the same with respect to the effects which result from human interaction. According to Frederick Engels, man alone has so succeeded in implanting his stamp on nature that the consequences of his action can disappear only with the general extinction of the terrestrial globe.<sup>34</sup> This means that the effects of human interactions with nature are indelible.

### **Conclusion**

Human beings have intensely intercepted, and are still intercepting nature. The exploitation of natural resources involves changes in the environment, positively or negatively. These changes that may be brought about by human interactive activities are, at times, unpredictable. According to John R. Vallentyne, “[t]he only certain prediction that can be made about the future is that it will be increasingly unpredictable.”<sup>35</sup> E.K. Fedorov argues that we have entered a unique and very important stage of our interaction with the natural environment of our planet. According to him, “the scale of society’s activity has grown so that it has become necessary to take into account the quantities *and qualities* – [*italics ours*] of all our planet’s elements.”<sup>36</sup> He continues: “Man...is constantly changing, extending, and perfecting the modes and forms of his interaction with nature, and in spite of the many negative consequences (for man himself) of anthropogenic actions on nature, on the whole, it must be noted, its development is increasing the effectiveness of the use of natural resources and properties of the environment.”<sup>37</sup> This has led to the degradation of the

quality of the environment, which consequently poses some challenges to, and impedes ecological prosperity.

As a result of this degradation, human beings have been faced with myriads of environmental problems, ranging from desertification, deforestations, overpopulation, food shortage and so on. These environmental problems are interwoven. For example, population problem and the attempt to resolve it generate some other problems. The various attempts to resolving the problems of overpopulation and the various attempts to resolving the problems of food shortage to meet population needs further aggregate the existing problems. For instance, the clearing of a piece land for the production of more food leads to deforestation, desertification and loss of habitats. The use of fertilizers for improved food supply leads to pollution of land, air, water and the food produced. The use of chemicals to kill pests upset the ecosystem, food chain and food web; it can also lead to the pollution of foods, animals, land, air, water, and even to extinction. This is why it may be correct to argue philosophically that it is the very attempts to resolve environmental problems facing the world that may intensify the problems and thus bring the world hurriedly to disaster. Without doubt, Humanity is facing a concrete environmental dilemma.

Cunningham and Cunningham write that many classical authors regarded the earth as a living being, vulnerable to aging, illness and even mortality. Periodic threats about the impending death of nature, as a result of human misuse, have persisted till our own time. These dire warnings are not taken or attended to with seriousness and a sense of urgency. Cunningham and Cunningham argue that, “[a]lthough many earlier societies had negative impacts on their environments, recent technological innovations have greatly increased our impacts.”<sup>38</sup> Environmental problems can best be seen today as global issues and problems.

The natural environment, which is an integrated system of interconnectivities, is the basis of human existence. The hazards which result from harnessing the forces of nature to meet human needs are many, and they are threatening. These various problems which result from human

impact combine to produce other problems, such as hunger, poverty, diseases, death, war, poverty, cropland scarcity, species invasion, , migration, scarcity of freshwater, decline of fish stocks, among others. The problem of hunger, poverty, and so on, causes some other problems, including such social problems like violence and social disorder, as well as health problem.

Human interaction with the natural environment has ambivalent consequences, with resultant moral dilemma. It has led to the improvement of standard of living and human life generally. It has also led to ecological problems that are now threatening to the whole environment, including human life. The issue of philosophical concern here and now is: whether to stop all human interaction and thus retuning to the state of nature, in which case life become precarious, more laborious, challenging, less harmonious or; to continue with human interaction and thereby be faced with more threat, danger of extinction, environmental crises, and thus imperil our life, our future, and those of future generations. These problems call for concern for the environment; if not for the sake of the environment *per se* but at least for enlightened self-interest. There is the need for urgent moral attention to the natural environment; or else man may intercept the means of his existence, which sustain his life, and will only in a matter of time wipe out the object of his existence. This calls for a careful and conscious moral relation with the environment to ensure its continuous sustainability and at the same time meet up with human needs. Humans need to be disciplined in consumption, avoid ostentatious ecological use, and be modest in his interaction with nature.

### Endnotes

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