

The Environment & Sustainable Development



ESSAYS IN HONOUR OF
OBASANJO'S ENVIRONMENTAL
LEGACY FOR NIGERIA

Chapter Four

The Folly of Man: Origins of Environmental Disasters in the International System

Introduction

Environmental issue has been one of the most important issues widely discussed in international fora. This becomes necessary because of the fundamental changes occurring within the system owing to changes in Science and Technology. These changes coupled with environmental challenges have brought a lot of problems to many homes, individuals and communities. Industrial developments have altered the face of the earth and in the long run may affect sustainable development. Apart from effects on sustainable livelihood, man-made environmental disasters have claimed between 250,000 lives on an average yearly. Indeed, environmental challenges are the products of man's search for comfort, which invariably become detrimental to man's existence since the beginning of industrial revolution.

The Concept of Environment

The term environment has many meanings as there are people interested in seeking for knowledge. Many see environment socially; others see it culturally and still others see it as physical or biological. Social environment, for instance, consists of the interaction of man and man, man and animals, man and other living and non-living things that assist in the existence and usefulness of man on this planet. Cultural environment has to do with the norms, values, ethics, mores of the people. The physical environment deals with man's interaction with various structures such as water, air, land, animals, and how one influences the other. In this context environment here refers to the physical environment that is sustained through interdependence. This interdependence is the foundation of our worldly environment; without it there would be no life (Robinson, 1972:479).

Environment and man's interaction are not new phenomena. They have always been part of the society. Thus, Arokoyu and Umeuduji (2004:1), posit that environment is the external condition which influence the development of any living organism. This involves the circumstances, objects or conditions by which the living organism is surrounded. Olaniran (1994) sees environment as comprising physical, biological or socio-cultural components existing together in nature. The physical comprises air, water, land and other structures observable around man. These components of the physical environment are critical natural resources on which man's socio-economic development and health depend. Biological environment comprises all living things including man, animal (fauna) and plant (flora) species. The socio-cultural environment on the other hand, comprises traditional beliefs and practices, norms, values etc. Thus these interactions have placed man in this planet both on

the disadvantage and advantage positions. In this connection, the folly of man, therefore, is how man was not able to cater and build blocks against environmental disasters.

The Search for Comfort as the Evolution of the Folly of Man

Man's creation of permanent settlement at Marjurk in what is today part of modern Iraq, Jericho and Catal Huyuk in modern Turkey was the beginning of a great blow by man on himself and the environment. Settlement required the cutting down and burning of vegetation. The burning of vegetation meant release of carbon dioxide and other gases into the atmosphere which became inimical to man's well-being. Cutting down of vegetation implies exposing the soil to wind and water erosion (Duiker and Sielvogel, 1998: 8-13) even though some scholars such as Knowles and Wareing Robinson have argued that such function as cutting down of forests and setting them on fire caused no havoc to the environment by this civilizations. Indeed, interference in the eco-system in a state outside its natural setting by and large has altered its original form and constitutes damage to it. The discovery of America and the creation of plantation system for the accumulation of wealth also altered the eco-system. Of recent the reduction of Amazon Forest in parts of South America especially in Brazil meant the destruction and alteration of the earth by man.

However, the 18th century industrial revolution in England which later spread to other industrialized countries marked the pollution of the earth on a large scale. The industrial revolution

gave rise to so many developments in science and technology. Some aspects of the developments are becoming threats to man's survival. In other words, man's progress and process to change his lifestyle through creation of wealth and making himself comfortable has over the years been man's nightmare. Man's comfort lies first, in the ability to produce food and its security. Secondly, to be able to have basic accommodation and lastly to accumulate wealth so as to make or create fame in the social structure. This comfort and sustainable accumulation of wealth has covertly turned comfort to man's dilemma, torture, and fear of the unknown. This acute and prostrate process of wealth accumulation has led man to seriously pollute, pillage and destroy his environment.

Again, since the beginning the historical period, geometrical increase in world population, the need for increased food supplies, the development in science and technology, the growing demand for raw materials in addition to increased output of manufactured goods have had far-reaching impacts on the planet earth. According to Robinson (1972:498), that the destruction or modification of the world's eco-system by man can be catalogued thus:

He has cut, burned and destroyed millions of square miles of forest land; he has allowed over-grazing by his flocks and herds which has led to the deterioration or destruction of vast areas of natural pasture; he has instigated widespread soil erosion by his disturbance or removal of the natural vegetation cover; he has hunted many species of wildlife to the point of extinction and beyond; he has over-fished rivers, lakes and seas to a

degree that makes natural replacement doubtful or even impossible; ... he has polluted water by sewage, factory waste, and agricultural chemicals so that aquatic life is destroyed and his water supplies threatened; he has polluted the air with smoke, fumes and radio-active fall-out which is often damaging to plant life as well as human health; and in places he has eliminated the natural ecosystem altogether, replacing it with an artificial "urban ecosystem".

Every human activity that is responsible for the bastardization of environment by man is summarized in the passage by Robinson. These areas would be briefly discussed.

Agricultural Systems and Environmental Disaster

Whether we are dealing with shifting cultivation, mixed farming, terrace farming, plantation agriculture or crop rotation, they all involve the cutting down of vegetation before the land is put to use. Shifting cultivation, mixed farming and crop rotation had been in use and still in use especially in developing economies. The common feature is that, the vegetation is cleared and the land become bare begging for coverage. In the process soil is opened to either wind or water erosion, thus reducing the soil fertility. A product that would later lead to food scarcity and insecurity as well.

Equally, certain vegetation cleared for farming can become a problem to human existence most especially where the topography is poor. Flooding and landslides have affected many communities in Nigeria especially in South-East geo-political zone and

specifically in areas such as Enugu State, Anambra, Abia and Imo. Flooding has affected other areas of the world such as India, China and Indonesia. Most floods are not associated with agricultural activities but global warming (Obafemi, 2004:145)

Additionally, over-cultivation of land also leads man to degrade his environment preparing him for possible starvation. Obafemi succinctly posits that over-cultivation implies putting the same land for food or cash crop production due to land scarcity. He added that since hunger and poverty are still very rampant in the world coupled with the low technological capacity mainly in the developing economies, to improve production per unit land, the carrying capacity must be high and if not, degradation of the environment will still continue to pose imminent danger to the environment.

Closely following it is soil erosion which is threatening the tropical world because of heavy rainfall and excessive leaching, flooding and solidfluction. Soil erosion is the gradual removal of the top soil due to various economic activities of man in his attempt at conquering his environment through exploitation of resources for use. Such activities may include agriculture, mining or other related activities.

There are other poor methods of agriculture that expose the environment to danger and these include deforestation and bush burning. Bush burning can cause wild fire as it is the case in the USA..

The Industrial Revolution and the Folly of Man

1750 marked the beginning of expansion in global industrial output. As earlier discussed, agriculture was man's first attempt at organizing himself through improved methods, but this organization greatly affected man adversely. Man's quest for improvement in his standard of living led to industrial revolution which in turn resulted in the development of science and technology. Industrial revolution led to the production of chemicals of many kinds and for varied uses. For instance, attempts to increase agricultural production through use of fertilizer have also produced pollution. The use of artificial fertilizers is an essential part of high productivity, but as the chemicals are gradually washed into rivers, resulting in nutrient concentration in rivers and lakes, they create problems such as eutrophication – which affects on flora and fauna are enormous. Also the use of agricultural chemicals such as herbicides, fungicides, Dieldrin (DDT) has created a second form of pollution. DDT is also used in fishing by illiterate fishermen which to a large extent causes destruction of aquatic life (Knowles and Wareing, 1976L320).

However, the use of chemical resources in industry also creates pollution, and this comes about in two ways. In the first instance, there is the discharge of effluent side-effects in manufacture, storage and distribution. Thus in United Kingdom alone it was estimated that industry discharges 2 million tons of smoke, 1.5 million tons of ash and 5 million tons of sulphur and gases into the atmosphere every year, adding considerably to the problem of air pollution. It is also reported that Britain has over 200,000 hectare of contaminated land. If that is found in Britain alone, then one imagines what other

developed countries such as USA, Italy, France, Russia, Canada are contributing to air pollution alone (Knowles and Wareing, 1976: 321). The burning of coal, petroleum products for energy, the flaring of gas by oil companies could have been reduced, but the cost would have to be borne by the companies which are thus reluctant to do anything. Their activities contribute to global warming.

According to Robinson, there would be a major shift in World's climate. It has been estimated that as a result of the coal and oil burned since the advent of the Industrial Revolution the carbon-dioxide content of the atmosphere has increased by one-seventh; that if this increase goes on unchecked the point may be reached where the reduction in the amount of solar heat re-radiated back into space becomes so small that the Earth's surface temperatures may be raised sufficiently to cause the melting of the ice-caps and, consequently, widespread flooding through a rising sea level (Robinson, 1972L 513). Today the world has witnessed the global warming, the tsunami in Indonesia, the flood in India, China etc.

Industrialization to a great extent produces wastes of various kinds and in volumes. It ranges from the food waste to nuclear. In all, they are problems of waste. At present especially in developing countries, vast amounts of liquid wastes are simply poured into rivers, lakes, streams and oceans without any form of treatment. Unfortunately, these also contaminate water supplies and heighten the risk of diseases such as cholera, dysentery and typhoid. There are other risks from industrial pollution. For example, River Cuyohoga had over the years become so heavily polluted with inflammable materials that it ignited and burnt down two bridges in

Cleveland, UK in 1969. In Nigeria the discharge of industrial waste into Kaduna river, Lagos Lagoon, the Niger Delta creeks are enormous and have threatened the survival of aquatic life and even humans.

• Solid wastes are deposited almost everywhere both in the developed and developing countries. The one that is posing high risk is the nuclear waste. It becomes a human problem and a disaster because of its radiation and its attendant effects on the environment. Other solid wastes are generated through oil drilling. Oil spill into land or water changes the structure of the environment and make it incapacitated to function in its pure form to the extent that it may no longer support agriculture among other things.

Some of the Avoidable Environment Disaster Caused by Man

A lot of environmental disasters could have been avoided but either because of man's quest for wealth, food, fame, or through his carelessness they have to occur. Most of these problems are oil, gas, and agriculture.

On March 16, 1978 Amoco Cadiz spilled over 230,000 tons of crude oil into English Channel. The oil spill polluted approximately 300 kilometres of coastline, destroying fisheries, oysters and secreted beds. Beaches of 76 Breton communities were polluted by oil. On July 6, 1988 an explosion occurred on the oil and gas production platform Piper Alpha of Occidental Petroleum Rtd and Texaco in the North Sea. The explosion resulted in fumes pouring into the atmosphere tons of gas that is injurious to the environment. In 1989 the American oil tanker Exxon Valdez clashed with the Bligh Reef causing a major oil leakage in Alaska West Pacific that covered 132,000 square metres, polluting 1900km of coastline. It is estimated that the oil spill killed about 250,000 sea

birds, 2,800 sea otters, 250 bald eagles and possible 22 whales. These indicate the destruction of marine life in a large scale. Other statistics on oil spill are presented below:

1967 Liberian tanker Torrey Canyon spills 120,000 ton oil near Cornwall.

1968 Witwater tanker spills 14,000 barrels of oil near Panama coast.

1969 tanker Hamilton trader spills 4,000 barrels of oil in Liverpool Bay, England

1970 tanker Arrow spills 77,000 barrels of oil near Nova Scotia, Canada.

1971 tanker Wafra spills 20,000 barrels of oil near Cape Agulhas, Africa.

1972 tanker Sea Star catches fire after collision in Gulf of Mexico.

1974 Dutch tanker Metulla spills 53,000 ton crude oil near South-Chilli.

1976 Liberian tanker Argo Merchant spilled 29,000 square meters of oil near the Massachusetts coast.

1976 Spanish tanker Urquillo spills more than 100,000 ton oil near Spain.

1977 tanker Al Rawdatain spills 7,350 barrels of oil near Genoa, Italy.

1977 tanker Borug spills 213,692 barrels of oil near the coast of Taiwan.

1978 Brazilian Marina spills 73,000 barrels of oil near Sao Sebastiao, Brazil.

1979 Betelgeuse spills 14,720 barrels of oil near Bantry Bay, Ireland.

1979 Ixtoc I exploratory well in Mexico blows out and spills 600,000 tons of oil

1984 Alvenus tanker grounds south of Cameron, Louisiana and spills 65,000 barrels of oil.

1985 ARCO Anchorage spills 5,690 barrels of oil near the coast of Washington.

1986 unknown oil spill reaches the coast of Georgia and is later appointed to the Amazon Vulture tanker.

1989 Aragon tanker spills 175,000 barrels of oil near Madeira, Portugal.

1990 tanker American Trader grounds near Huntington Beach, California and spills 9458 barrels of oil.

1990 Cibro Savannah tanker catches fire and spills 481 square meters of oil.

1990 Jupiter tanker catches fire in Bay City, Mexico and causes oil spill.

1990 Mega Borg tanker catches fire and spills 19,000 square meters of oil near Galveston, Texas.

1991 tanker Bahia Paraiso spills 3,774 barrels of oil near Palmer Station, Antarctica.

1992 Greek tanker Aegean Sea spills 70,000 ton oil near Galicia.

1993 Bouchard B155 tanker spills 1,270 square meters of fuel oil after collision with 2 ships.

1996 Liberian tanker Sea Empress spills 147,000 ton oil near Wales.

1999 Maltese tanker Erika spills 30,000 ton oil near Brittany.

2001 tanker Jessica spills 900 ton oil near the Galapagos Isles.

2002 Bahamese Prestige spills oil near Galicia.

In 1920 Hooker chemical had turned Love Canal area near Niagara falls into a waste dump site. The chemical is said to be about 130 pounds of highly toxic carcinogenic TCDD. That chemical contains more than 248 different species of chemicals. The waste consisted mainly pesticides residues and chemical weapons research refuse. The chemicals had entered homes, sewage system, yards and creeks and had affected about 900 families. Children in the neighbourhood often fell ill. Love Canal families regularly experience miscarriages and birth defects. Apart from oil and chemical, other wastes are deposited or dumped in various locations in many parts of the world especially in the developing economies. As the environment is part and parcel of man's existence on this planet, every step should be taken by man to regenerate it.

Conclusion

Environmental man-made disasters seem to be part of the world culture today. Every region in the world is experiencing one disaster or another and everyone is living with it. The Industrial Revolution of the 19th century led to the discovery of man's comfort-by ushering in innovations and changes in all facets of man's living. Man began to conquer space through inventions of locomotives; farmlands were expanded through making of new tools, increase in yields through chemical fertilizers, new methods of fighting wars were introduced through the use of nuclear bombs, explosives of different kinds came to be; invention of sound radiating instruments among others were freely used. In return, all these aspects of comfort generated wastes. These wastes to a large extent could not be controlled by man. The comfort at least becomes man's nightmare and woes-through different kinds of pollution. Air is becoming unfriendly; water is an enemy, and land is a huge misery. These are the results of discharges of industrial and domestic wastes into land, water and air. These factors combine to pose serious challenges to man today and man must rise up to the challenges if he cares to have his generation upon generation live the planet.

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