NATIONAL OPEN UNIVERSITY OF NIGERIA

PCR 851

Environmental Security and Conflict Resolution

Module 3

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Unit 1 Understanding the Environment

1.0 Introduction

The primary environmental threat in the 21st century which is currently enjoying attention is climate change, because it is now realised that human-induced climate change is the most important environmental change facing humanity with implications for food security, natural ecosystem, freshwater supply, health etc. The expected severity of the impacts will lead to environmental refugees and with competition over scarce resources, will result to conflict.

2.0 Objectives

At the end of this unit, you should be able to:

- define the environment
- explain climate change
- explain what constitute the climate system
- discuss the various effects of human activities on the climate system.

3.0 Main Content

3.1 Understanding the Environment

Environmental Protection Agency (EPA) defines the environment as "the sum of all external conditions affecting the life, development and survival of an organism." China's original 1979 Law on Environmental Protection uses the term environment to encompass "the air, water, land, mineral resources, forests, grasslands, wild plants and animals, aquatic life, places of historical interest, scenic spots, hot springs, resorts and natural areas under special protection as well as inhabited areas of the country."

In the 1991 *Beijing Declaration on Environment and Development,* representatives of the 41 developing countries at that year's Ministerial Conference of Developing Countries on Environment and Development, agreed that the more serious and widespread environmental problems are air pollution, climate change, ozone layer depletion, drying up of fresh water resources, pollution of rivers, lakes and the marine environment including the coastal zones, marine and coastal resources deterioration, floods and droughts, soil loss, land degradation, desertification, deforestation, loss of biodiversity, acid rain, proliferation and mismanagement of toxic products, illegal traffic of toxic and dangerous products and wastes, growth of urban agglomerations, deterioration of living and working conditions in urban and rural areas, especially of sanitation, resulting in epidemics and other such problems.

Senator Al Gore, in his 1992 book *Earth in the Balance,* tried to identify, categorise, and differentiate environmental threats according to their presumed reach and impact. Using an ordering scheme similar to that commonly used to characterise different levels of military operations; he described these environmental threats as local, region and strategic threats. The local (or tactical) threats include water pollution, air pollution, and illegal waste dumping. Problems such as acid rain, the contamination of underground aquifers, and large oil spills are fundamentally regional threats, while global warming and ozone depletion are strategic threats.

In turn, Eileen Claussen, the former United States Assistant Secretary of State for oceans and international scientific and environmental affairs, defined global environmental threats as those "which are human-caused and have, or can be expected to have, serious economic, health, environmental, and quality of life implications". These include climate change, the production and trade of highly toxic chemicals, the loss of biodiversity, ozone depletion, and marine degradation. Of all these changes, climate change poses the greatest challenge globally.

3.1.1What is Climate Change?

According to Okali and Eleri (2004), climate is the synthesis of the weather in a given place over a period of at least 30 years. These constituent elements of weather include the following– temperature, rainfall, dew, humidity, wind, sunshine, mist, haze and clouds. The collective expression of these elements over time becomes the climate of a place. Thus, climate change is a change in the collective pattern of expression not just one element of the weather. Over the millennia, the earth had experienced climate changes over varying time scales ranging from the periods of extreme minimum temperatures corresponding to the global ice ages to the warmer periods in cycles of roughly 100,000 years over the past 800,000 years called the "glacial" and "interglacial" periods respectively (Okali and Eleri, 2004). The coldest period of the last ice age occurred some 10,000 years ago with an average annual global temperature of 4 – 5^{O}C, presently, we are in the interglacial period. Okali and Eleri (2004) also noted three major reasons why climate change is receiving global attention. These include:

1. That global warming is occurring more rapidly than past rises in temperature associated with natural climate change. During the 20th century, the global mean surface temperature increased by 0.6 +/- 0.2^{O}C (0.7 ^{O}C in Africa), more than during any other century in the last 1,000 years. The 1990s was the warmest decade of the millennium with 1998 the hottest year. Scientists have predicted the global mean temperature may rise between 1.4 ^{O}C and 5.8 ^{O}C between 1990 and 2100.

2. There is a strong correlation between the current global warming and increases in the atmospheric concentration of a set of heat-trapping gases known as greenhouse gases (GHGs) which consist mainly of carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), halocarbons (also ozone-depleting), ozone (O_2) itself and water vapour to a negligible extent. The atmospheric concentration of the gases has been on the increase since the beginning of the industrial revolution in 1860s. Deforestation also contributed to emissions besides industries. They reduced the natural ways by which gases such as CO_2 are removed from the atmosphere.

3. The realisation that the current climate change is caused by human activities at both industrial and subsistence levels (for example, cutting and burning of firewood). The major human activities driving global change stated by Okali (2004) include:

    - growth in human populations
    - increasing level of consumption of resources by human societies
    - changes in technology (especially information technology which is promoting globalization)
    - economic advances, increasing per capita resource consumption and
    - Changes in organisation of human societies.

The major physical impacts of human activities in the earth's environment which interact with the socioeconomic systems to define the human environment are:

- changes in land use and land cover (urbanisation, agriculture and forestry)
- loss of biodiversity
- changes in the composition of the atmosphere and
- Climate change.

3.1.2 The Climate System

This is a complex, interactive system made of the atmosphere, land surface, snow and ice, oceans and other bodies of water and living things. The atmospheric component of the system characterises the climate with solar radiation powering the planet. The climate system changes overtime under the influence of its own internal dynamics and external factors such as volcanic eruptions, solar variations and human induced changes in the atmospheric composition. In turn, the climate responds directly to these changes.

3.1.3 Greenhouse Effect and Global Warming

The earth's climate is powered by the sun which radiates energy at a very short wavelength. Of the solar energy that reaches the top of the earth's atmosphere, about 33 percent is reflected back directly to the space (albedo) while the remaining 67 percent is absorbed by the surface. The earth therefore, must radiate the same amount of energy back to space to balance the absorbed incoming energy. The earth radiates at much longer wavelengths because it is much colder than the sun. These thermal radiation emitted by the land and ocean is absorbed by the atmosphere and cloud and re-radiated back to the earth. This is called the greenhouse effect. And without the natural greenhouse effect, the average surface temperature of the earth would be below freezing point of water. The earth's natural greenhouse effect therefore, makes life possible as we have it but human activities especially the burning of fossil fuels and clearing of forest have greatly intensified the natural greenhouse effect causing global warming.

3.1.4 Contribution of Human Activities to Climate Change Compared with Natural Influences

Human activities contribute to climate change by causing changes in the earth's atmosphere through emission of greenhouse gases, aerosols (small particles) and cloudiness but the major known means of contribution is from the burning of fossil fuels that releases carbon dioxide gas to the atmosphere. Greenhouse gases and aerosols affect climate by altering incoming solar radiation and outgoing infrared (thermal) radiation which are part of the earth's energy balance. This change can lead to the cooling or warming of the climate system and since the start of the industrial era, the overall effect of human activities on the climate has been a warming influence (Oladipo, 2010:151).

3.1.5 Changing Global Temperature

Over the past 157 years, temperatures have risen globally with important variations. Warming in the last century occurred in two phases – from the 1910s to the 1940 (0.35^{o}C) and more strongly from 1970s to the present (0.55^{o}C). An increasing rate of warming has taken place

over the last 25 years and 11 of the 12 warmest years on record have occurred in the past 12 years. Evidences of global warming are seen in the warming of the oceans, rising sea levels, thawing glaciers, sea ice retreating in the arctic and diminished snow cover in the northern hemisphere. By the end of this century, global average temperature is predicted to rise by 2 – 4.5^{O}C (Oladipo, 2010:152).

3.1.6 Changes in Extreme Events like Heat Waves Flood and Drought due to Greenhouse Warming

Scientific evidences have shown that the number of heat waves has increased and floods and droughts are becoming more frequent in different parts of the globe. These changes are largely attributed to increasing atmospheric greenhouse gases resulting from human activities such as the use of fossil fuels.

3.2 Impacts of Climate Change

Climate change will affect everyone both the rich and the poor. Those already affected by poverty, malnutrition and disease will face displacement and new hardships. In the developed world, industries, livelihoods and public health will face serious threats from drought, disease and extreme weather events. It is also a threat to the achievement of the Millennium Development Goals (MDGs) especially those related to eradicating poverty and hunger and promoting environmental sustainability. According to Oladipo (2010:154), global climate change whose effects could be local impacts on the following:

1. Agricultural production and food security: climate change will affect rainfall, temperature and water availability for agriculture. In sub-Saharan Africa, drought affected areas could expand by 60-90 million hectares. In other developing regions including Latin America and South Asia, they will experience losses in agricultural production which will result to rise in the number of those affected by malnutrition.

2. Water stress and water insecurity: Changed run-off and glacial melt will add to ecological stress which will result to reduced water availability for irrigation and human use as an additional 1.8 billion people could be living in a water scarce environment by 2080. Seven of the Asia's great river systems will experience an increase in water flow over a short-term which will be followed by a decline while millions of people in Peru will face more serious water shortages with the collapse of tropical glacier. Also, many countries in the highly water-stressed regions such as those in the Middle East could experience deeper losses in water availability.

3. Rising sea levels and exposure to climate disasters: This could rise rapidly with increased ice sheet disintegration. With the global temperature increases of 3 – 4 ^{O}C, 330 million people could be permanently displaced through flooding. In Bangladesh, Lower Egypt and Vietnam over 70 million, 6 million and 22 million people could be affected respectively. The impact of the sea level rise could result to the emigration of about 92,000 people who inhabit the 33 coral atolls of Kiribati due to increased flooding of the islands by high tides. Many states in Nigeria have continually been flooded resulting to some deaths, loss of properties worth millions of naira and millions of people been displaced from their homes.

4. Ecosystems and biodiversity: About one-half of the world's coral reef systems have suffered bleaching as a result of warming seas. Increased acidity is also a threat to marine ecosystem. At 3^{O}C warming, about 20 – 30 percent of land animal and plant species could face extinction.

Increased sea level rise would result in loss of biodiversity, deterioration in land vegetative cover and depletion of water availability through the destruction of catchments and aquifers.

5. Human health: The greatest impact will be experienced in developing countries due to high level of poverty and inefficient public health system to respond. For example about 220-400 additional people would be exposed to malaria while dengue fever is evident at higher levels than previously experienced especially in Latin America and parts of East Asia.

Self-Assessment Exercise

What do you understand by Climate Change? Discuss the Green House Effect and Global Warming.

4.0 Conclusion

In the last decade of the 20th century up to the dawn of the 21st century, the dynamics of war, ecological devastation, political uncertainties and the adverse condition of human security seem to dominate security discourses. Desertification is strongly connected to poverty, migration and food security because when people live in poverty they do not have any alternative than to over-exploit the land. If the land becomes unproductive, the people are forced into internal and cross-border migrations which further strains the environment thereby causing social and political tensions and conflict. In Nigeria, desertification also constitutes environmental hazards but the extent and severity has not been fully established. Although, it is estimated that between 50 to 75 percent of Bauchi, Borno, Gombe, Jigawa, Kano, Katsina, Kebbi, Sokoto, Yobe and Zamfara states in Nigeria are affected by desertification. These states which account for 38 percent of the country's land area are classified as the "frontline states" in terms of desertification. These frontline states often experience droughts which expose the land to increased stress from human and livestock thereby causing damage to the environment. The Sahara desert is advancing into Nigeria at the rate of 0.6 kilometers per annum. Desertification also contributes to the increased decimation of livestock, incidents of diseases like heat-stroke, cerebral-spinal meningitis, acute respiratory syndrome (SARS) and avian flu. All these pose direct threat to human security. Besides desertification and drought, there is the problem of flood which has been ravaging various states of the federation leading to thousands of people losing their homes, farmland and properties.

5.0 Summary

In summary, climate change which is as a result of greenhouse gas emission into the atmosphere is caused by human activities. It is also the greatest challenge of all the environmental problems facing the world. Climate change will affect everyone both the rich and the poor. Those already affected by poverty, malnutrition and disease will face displacement and new hardships. Environmental threats are those threats which are human-caused and have, or can be expected to have, serious economic, health, environmental, and quality of life implications. These include climate change, the production and trade of highly toxic chemicals, the loss of biodiversity, ozone depletion, and marine degradation. These environmental threats have also been described as local, region and strategic threats. The local (or tactical) threats include water pollution, air pollution, and illegal waste dumping. Problems such as acid rain, the contamination of underground aquifers, and large oil spills are fundamentally regional threats, while global warming and ozone depletion are strategic. Of all these changes, climate change poses the greatest challenge globally and has become a multi-faceted problem with a number of challenges in the area of environmental governance.

6.0 Self-Assessment Exercise

Of all the environment problems, climate change is said to pose the greatest challenge globally, explain the various impacts of climate change.

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Unit 2 Development of International Environmental Law

1.0 Introduction

Worldwide growth of public concern for the natural environment has been one of the most important developments in recent decades. globalisation has helped to connect societies and their environmental fates move closely than ever before. Thus, environmental problems increasingly transcend national borders and pose serious challenges to the health of the planet. The development of effective environmental laws and legal systems throughout the world has therefore become critical in directing economic development and growth onto a path of environmental sustainability. Increased cross-border collaboration between governments, non-governmental organisation (NGOs), multinational corporations and growth of transnational environmental networks have also influenced the development of environmental laws. These growing international linkages promote the emergence of international environmental law.

2.0 Objectives

At the end of this unit, you should be able to:

- explain why international environmental law developed
- Discuss various concepts used in international environmental law.

3.0 Main Content

3.1 Development of International Environmental Law

The development of international environmental law began with the Trail Smelter arbitral award in 1938. Despite the fact that there were few environmental treaties in the 1940s and 1950s mostly on fauna (whales, fish, bird and seals) and oil pollution, the era of international environmental law began with the Stockholm Declaration of the Principles of 1972 which was adopted by the UN Conference on Human Environment (UNCHE). Principle 21 of the Stockholm Declaration of Principle reflects the Trail Smelter arbitration in confirming the sovereign rights of a state to exploit its own resource pursuant to its environmental policies subject to its responsibility not to cause damage to other states. In 1972, the United Nations' General Assembly established the United Nations Environment Programme (UNEP) following the UNCHE with headquarters in Nairobi. It has been effective in the adoption of environmental treaties and the development of international environmental law generally. The role of the Environmental Management Group (EMG) with the secretariat in Geneva and chaired by the UNEP Executive Director is to enhance cooperation in environmental matters both within and beyond the UN system. Principle II of the Stockholm Declaration states that environmental policies should not adversely affect the development potential of developing countries to decide how to develop their economies. In 1992, the UN Conference on Environment and Development (UNCED) produced the Rio Declaration on Environment and Development and the Conventions on Climate Change and Biodiversity was adopted.

3.2 Concepts Used in International Environmental Law

Precautionary Approach

In Rio Declaration, Principle 15 states that: "In order to protect the environment, the precautionary approach shall be applied by states according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation"

This concept is seen as an application of the principle of state responsibility in the context of potential environmental harm and not only in the case of trans-boundary activities. This approach has been followed in treaties like the Vienna Convention for the Protection of the Ozone Layer 1985 and its Montreal Protocol 1987. These require parties to reduce the use of CFCs even before it was proved scientifically that they cause damage to the ozone layer (Birnie and Boyle, 2002:115).

Polluter Pays

Principle 16 of the Rio Declaration states that:

"National authorities should endeavour to promote the internalisation of environmental costs and the use of economic instruments, taking into account the approach that polluter should in principle, bear the cost of pollution with regards to the public interest and without distorting international trade and investment".

This is an economic policy suggestion that a state may follow when apportioning the cost of remedying pollution or other environmental damage so that the state does not have to bear an unfair share.

Sustainable Development

This is a very important concept in international environmental law which states that: development (industrial, agriculture, communication etc.) is not bad but should take into account its effect on the environment. Industries should exploit natural resources in a way that allows the resources to regenerate and not to be destroyed. For example, over-fishing has become so bad that a common fish is now scarce. This led to the 1958 Convention on Fishing and the Convention of the Living Resources of the High Seas.

Environmental Impact Assessment

The Environmental Impact Assessment was proposed in 1969 and its aim is to discover whether a proposed activity have an adverse effect on the environment at an early stage. Principle 17 of the Rio Declaration states that:

"Environmental Impact Assessment, as a national instrument, shall be undertaken for the significant adverse impact on the environment and are subject to a decision of a competent national authority".

This assessment is required mainly in treaties that deal with pollution of the marine environment from sea or land-based sources. This is used in the protocol to the Antarctic Treaty on the Environmental Protection of 1991. Nigeria has a regulation in place called "The Environmental

Impact Assessment (EIA) Decree, No. 86 of 1992 which seeks to protect the physical and the aquatic environment. But this has not actually addressed the issue of strategic relevance of the environment.

Biodiversity

According to the United Nations' Convention on Biological Diversity, Biodiversity is defined as: "The variability among living organism from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems"

Ecosystem

This is defined as: "a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit".

Self-Assessment Exercise

Explain three concepts used in international environmental law.

4.0 Conclusion

With the global growth of public concern about environmental issues over the last decades, environmental legal norms have become increasingly internationalised. This development has reflected both in the surge of international environmental agreements as well as the growth and increased sophistication of national environmental legal systems around the world. These laws are standards established by governments to manage natural resources and environmental quality. Most international environmental laws are basically general principles agreed upon among states which oblige these countries to adopt implementing legislation. There is no international body directly authorised to enforce international environmental laws as the task of direct enforcement is left for member countries.

1.0 Summary

In this unit, we discussed development of international environmental laws and the various concepts used in international environmental law. The UN agencies play important role in developing international environmental laws which began with the Trail Smelter Arbitral award in 1938.

6.0 Self-Assessment Exercise

Briefly discuss the development of international environmental law.

7.0 References/Further Reading

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Unit 3 Multilateral Environmental Agreements/Treaties

1.0 Introduction

Since the emergence of human life on earth, humans have naturally taken the presence of some environmental conditions for granted; for example air, shielding from ultraviolet radiation that are in jeopardy now. Other environmental elements such as fertile soil, water and minerals have been subjected to intense violet intergroup competition (Deudney, 1989). Both the developed countries and the emerging economies are dangerously damaging the ecological systems that underpin human existence. Hence, environmental issue at all levels (locally, nationally and internationally) and how institutions respond to these emerging problems, is likely to shape global politics in a profound manner because environmental problem, for example climate change have no respect for boundaries. The work of Intergovernmental Panel on Climate Change (IPCC) which was established in 1988 by the United Nations' Environmental Programme (UNEP) and the World Meteorological Organisation (WMO) is based on evaluating and summarising scientific knowledge about the potential human impacts on the climate and its consequence. It has more than 190 countries participating in with more than 800 scientists from different research areas actively involved in the work that produced the fourth assessment report published in 2007 which was examined by 2,500 experts. These research areas are - oceanography, physical geography, meteorology, glaciology, geochemical, climate history, hydrology, biology, eco-system analysis, economics and energy systems. The IPCC reports, made use of existing reviewed scientific research published up to 2006, hence, IPCC does not conduct any research and its reports only provide the basis for decision by describing the consequences of the various actions from both a scientific and social science perspective.

2.0 Objectives

At the end of this unit, you should be able to:

- explain the evolution of environmental treaties
- Discuss the various multilateral environmental agreements/treaties entered into by states.

3.0 Main Content

3.1 Multilateral Environmental Agreements/Treaties

This includes:

1. International Convention for the Regulation of Whaling (IWC)
2. Convention on Wetlands of International Importance
3. Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)
4. United Nations' Convention on Biological Diversity
5. Vienna Convention for the Protection of the Ozone Layers

6. United Nations' Framework Convention on Climate Change

7. Kyoto Protocol

3.1 International Convention for the Regulation of Whaling (IWC)

The IWC was adopted in 1946 and was amended by a Protocol in 1956 with the aim of reversing the process of depletion of whale stocks thereby developing the whaling industry. The IWC has 66 parties. The secretariat is in Cambridge, England with members of the IWC commission representing all the IWC parties and meets at least once a year. The commission adopts regulations by a three-quarters vote of members (excluding abstentions and absences) and such regulations are binding on all parties after 90 days. The commission in 1982 imposed a general moratorium on commercial whaling but was not binding on Norway because it lodged objections. Some parties do not support the moratorium while some do. As many more small states become parties, it will be easier to obtain a three-quarters majority to lift or modify the moratorium. Following the establishment of the moratorium, Iceland withdrew from IWC but became a party again at a special commission meeting in 2002 with a modified reservation.

3.1.2 Convention on Wetlands of International Importance

In 1971, the convention on Wetlands of International Importance was established to preserve the wetlands. Wetlands within parties' territories are designated for inclusion in a "List of Wetlands of International Importance" on the basis of their international significance in terms of ecology, botany, zoology, limnology (study of freshwater phenomena) or hydrology. There are 143 parties to the convention that meet regularly and are required to promote the conservation of wetlands and waterfowl by establishing nature reserves.

3.1.3 Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)

This was adopted in 1973 to prohibit or regulate trade in endangered species and to a certain extent trade with non-parties. CITES has 167 parties whose trade sanction imposed in enforcing the convention against parties and non-parties has proved effective.

3.1.4 United Nations' Convention on Biological Diversity

This convention was adopted in 1992 and recognises the fact that conserving biodiversity is vital for the survival of mankind, the sustainable use of the biological resources is allowed. The convention has 188 parties with neither Timor Leste nor the United States as parties. This Convention emphasis that, states remain in control of their biological resources.

3.1.5 Vienna Convention for Protection of the Ozone Layers

The convention adopted in 1987 has few specific obligations but was followed by a more substantial Protocol called the Montreal Protocol on Substances that Deplete the Ozone Layers of 1987. This Protocol has 189 parties which include Brazil, China, the European Community, India, Russia and the United States. Parties are required by the Protocol to reduce and eliminate the production and consumption of certain ozone-depleting substances. It also bans the importation from or exportation to, nonparties of such substances. This Protocol has been successful and if allowed to continue to make progress, the hole in the ozone layer over the

Antarctica would be closed. Since developing countries have not contributed much to the ozone depletion, they are given more time to comply.

3.1.6 The United Nations Framework Convention on Climate Change

Climate is the greatest global problem facing humanity today and extending across unimaginable stretches of time. International negotiations began with the establishment of the Framework Convention on Climate Change (FCCC) which is advised by the scientific body of the Intergovernmental Panel on Climate Change (IPCC). At the Rio Earth Summit in 1992, international negotiators adopted the United Nation Framework Convention on Climate change (UNFCCC). This convention recognises that climate change is real and results from human activities, including deforestation and the combustion of fossil fuels. The convention's objective is to "prevent dangerous human interference with the climate system by stabilising atmospheric concentration of green gases at safe levels". To accomplish this, all parties that ratified the convention accepted general commitments to respond to climate change. In particular, the UNFCCC called on the industrialised countries, identified as Annex I parties to take the lead in climate action due to their historic responsibility for the majority of greenhouse gas emissions as well as their greater financial and institutional capacity to address the problem. Since its adoption, the UNFCCC has been ratified by 192 countries including the United States and regional economic integration organisations (UNFCCC document). The convention constitutes an essential foundation for international cooperation on climate change and encourages but does not commit countries to actions needed to avert and adapt to this change. It established a procedure for negotiations called Conference of Parties or (COP) meetings involving series of meetings between countries and also established a procedure for creating amendments to it. The most significant is the Kyoto Protocol because it legally commits parties to reduce emission.

3.1.7 The Kyoto Protocol

The Kyoto Protocol (KP) is a protocol to the UNFCCC or FCCC, aimed at combating global warming. The protocol was adopted by COP3 on 11 December, 1997 in Kyoto, Japan and entered into force on 16 February, 2005. As at November 2009, 187 countries have signed and ratified the protocol under which, 37 industrialised countries (called the Annex I countries) committed themselves to a reduction of greenhouse gases (GHGs) - carbon dioxide, methane, nitrous oxide, sulphur hexafluoride, hydrofluorocarbons and perfluorocarbons produced by them. Annex I countries agreed to reduce their collective greenhouse gas emissions by 5.2 percent from the 1990 level. Emission limits do not include emissions by international aviation and shipping, but are in addition to the industrial gases, chlorofluorocarbons (CFCs) which are dealt with under the 1987 Montreal Protocol on Substances that deplete the ozone layer.

It was opened on 16 March, 1998 for signature by parties to the UNFCCC. Article 25 of the protocol specifies that the protocol enters into force on the 19th day after the date on which not less than 55 Parties to the convention, involving parties included in Annex I which accounted in total for at least 55 percent of the total carbon dioxide emissions for 1990 of the Annex I countries, have deposited their instruments of ratification, acceptance, approval or accession. The EU and its Member States ratified the protocol in May 2002. Of the two conditions, the 55 parties clause was reached on 23 May, 2002 when Iceland ratified the protocol. The ratification by Russia on 18 November, 2004 satisfied the 55 percent clause and brought the treaty into force, effective 16 February, 2005, after the required lapse of 90 days. As of November 2009, 186 countries and one regional economic organisation (the EC) have ratified the agreement, representing over 63.9 percent of the 1990 emissions from Annex I countries. The issue raised by the United States and Australia for opting out of the Kyoto Protocol is the exemption of

developing countries from carbon dioxide emission limitations because the protocol allocates acceptable carbon dioxide emissions for each industrialised country according to how much carbon dioxide they currently emit. The protocol can be signed and ratified only by parties to UNFCCC, (Article 24 of KP) and a country can withdraw by giving 12 months' notice (Article 27of KP).

The five principal concepts of the Kyoto Protocol are:

1. commitments to reduce greenhouse gases that are legally binding for Annex I countries, as well as general commitments for all member countries

2. implementation to meet the protocol objectives, to prepare policies and measures which reduce greenhouse gases, increasing absorption of these gases (for example through geosequestration and biosequestration) and use all mechanisms available, such as Joint Implementation, Clean Development mechanism and Emissions Trading; being rewarded with credits which allow more greenhouse gas emissions at home

3. minimising impacts on developing countries by establishing an Adaptation Fund for climate change

4. accounting, reporting and review to ensure the integrity of the protocol

5. compliance by establishing a compliance committee to enforce commitment to the protocol (KP document).

Before and after its entry into force, the Kyoto Protocol has been severely criticised for doing little to combat global warming. It was generally criticised for being economically inefficient in requiring nations to reduce emissions quickly (Aldy, *et al*, 2003), for utilising absolute emission caps rather than emission intensity targets or a carbon tax (Pizer, 2005) and for not committing the largest developing nations - most China and India to binding emissions reductions. Finally, its flexible mechanisms have been criticised as it is dependent on an emissions baseline that is either unknown or politically determined (Zhang, *et al*, 2005). The most common response to these criticisms is that the Kyoto Protocol has been, since its negotiation the only binding legal document to control global climate change. Furthermore, it has spurred the emergence and growth of institutions and capacities that will likely endure beyond its existence perhaps in altered and improved form. The Kyoto Protocol has given birth to a whole set of institutions and has fostered capacity development both in the developed and developing world that will prove very useful in ultimately overcoming the challenges presented by climate change.

Self-Assessment Exercise

Compare and contrast the Kyoto Protocol and the United Nations Framework Convention on Climate Change.

4.0 Conclusion

Negotiations conducted within the United Nations Framework Convention on Climate Change are based on the IPCC's assessments because it is its fourth assessment report that eventually established that human activities are responsible for the majority of the increase in global average temperature experienced in the later 20th century with greater than 90 percent certainty. The IPCC consisting of government scientists was formed in 1988 by agencies of the United Nations.

The role is to assess the scientific, technical and socio-economic information relevant to the understanding of the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation (Archer, 2007:173). The objective of IPCC is to publish reports written by different working groups (WG) summarising their scientific findings. The IPCC report is divided into three topic areas;

WGI, researches into the scientific basis for the climate change forecast

1. WGII on the impacts of climate change on the natural and human world and

2. WGIII assesses options for limiting greenhouse gas emissions.

This report is in chapters with various levels of summaries done by researchers at universities not necessarily employed by any government. These chapters which are subjected to rounds of reviews by scientific experts and government workers are grouped together into books that come with technical summaries and summaries for policymakers. These summaries are then subjected to line-by-line review, voting and approval by the entire IPCC. The next IPCC report will be published in 2013-2014.

5.0 Summary

In this unit, we have examined the various environmental agreements / treaties reached. The issue of environmental problem gained international attention following the reports of the IPCC - the fourth report in particular. Presently, negotiations are going on under the UNFCCC and the KP. A new agreement was to be reached at the Copenhagen Climate Change Talks held in Denmark in 2009 to replace the KP which will expire in 2012 but due to international politics, an accord was reached called the "Copenhagen Accord".

6.0 Self-Assessment Exercise

Which of the environmental agreements/treaties legally commit countries to reduce emission? Discuss.

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Unit 4 National Environmental Laws in Nigeria

1.0 Introduction

Nigeria's economy has continually developed since independence and has suffered the pressure of space in her urban cities with diminishing resources and increasing problems of environmental degradation as experienced by developed countries in the course of their industrialisation. As a result of this, the government responded with a national policy on environment and also continued with her efforts at strengthening the legal system of environmental protection. Environmental issues gained international awareness following the adoption of Stockholm Declaration in 1972 but for Nigeria, the dumping of 4,000 tons of toxic wastes from Italy in Koko Port in 1988, flagged off Nigeria's environmental era. As a result, an International Workshop on the Goals and Guidelines of the National Environmental Policy for Nigeria organised by the Federal Ministry of Works and Housing (Environmental Planning and Protection Division) and the United Nations Environment Program (UNEP). This led to the creation of the Federal Environmental Protection Agency (FEPA) in December, 1988 and the launching of the National Policy on the Environment in November, 1989.

2.0 Objectives

At the end of this unit, you should be able to:

- discuss what gave rise to Nigeria's environmental era, and
- Explain the various interventions by government aimed at addressing environmental degradation.

3.0 Main Content

3.1 National Environmental Laws in Nigeria

3.1.1 Harmful Waste (Special Criminal Provisions etc.) Act, 1988

Following the Koko toxic waste dumping, the Harmful Waste (Special Criminal Provisions etc.) Act, 1988 (HWSCP) was passed in 1988. Its main objective is to prohibit the carrying, depositing and dumping of harmful waste on land and territorial waters. This Act imposes both criminal penalties and civil liability on any person who deposits, dumps or imports harmful waste or cause harmful waste to be so deposited, dumped or imported. Such a person shall be liable for any damage resulting from there except where the damage was due wholly to the fault of the person who suffered it, or was suffered by a person who voluntarily accepted the risk thereof. The problems that undermined the effectiveness of this Act include – Nigeria's porous borders, corruption and the enforcement and implementation of provisions of the Act.

3.1.2 The Federal Environmental Protection Agency Act, 1988

The incident of the Koko toxic waste dump led to the enactment of the Federal Environmental Protection Agency Act (FEPA Act) in 1988. The main goal of FEPA was to protect and develop the environment. The FEPA Act was a legislative framework meant to serve as a comprehensive

system for environmental management. Its role was to coordinate, supervise and monitor, and holistically providing an opportunity to handle environmental issues in a coordinated manner. Thus, the Act officially defined "Environment" as including water, air, land and all plants and human beings or animals living therein and the inter-relationships which exist among these or any of them. If clear and unequivocal rights were conferred on members of the public and non-governmental organisations to monitor compliance, FEPA would have been effective. In 2007, the FEPA Act was repealed by the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act, 2007.

3.1.3 National Environmental Protection (Effluent Limitation) Regulations 1991

The National Environmental Protection (Effluent Limitation) Regulations (NELR) is a subsidiary legislation in which every industry is required to install anti-pollution equipment for the detoxification of effluent and chemical discharges emanating from the industry using the Best Available Technology (BAT), the Best Practical Technology (BPT) or the Uniform Effluent Standards (UES). The NEPR identified selected waste water parameters for respective industries, stipulated additional sectoral effluent limitation treatment and further required treatment of effluent to ensure assimilation by the receiving water into which the effluent is discharged. Where a person breaches a provision of NEPR, such a person shall be guilty of an offence and liable on conviction to the penalty specified under the FEPA Act. The challenges that undermine the effectiveness of NEPR include: lack of required administrative support for continuous monitoring to ensure compliance; non-existent of third-party rights that could compel regulatory officials to perform their duties; and the use of such terms as BAT, BPT and UES were not defined to indicate whether they will be applied with reference to "technology" or "standards" available globally or locally.

3.1.4 National Environmental Protection (Pollution Abatement in Industries and Facilities Generating Wastes) Regulations, 1991

The National Environmental Protection (Pollution Abatement in Industries and Facilities Generating Wastes) Regulations (NPAR) is another subsidiary legislation made pursuant to section 40 of FEPA ACT. In this Regulation, industries and facilities are banned from releasing hazardous or toxic substances into the air, water or land of Nigeria's ecosystems beyond limits approved by the Agency.

It also made provision for industries and facilities to: have monitoring pollution units; have a discharge monitoring report that will be submitted to the nearest office of the Agency every month; report unusual or accidental discharges not later than 24hours of the discharge; have a list of chemicals used in the manufacturing of its products with details of stored chemicals, storage conditions and name of any secondary buyers; have an approved contingency plan: have machinery for combating pollution hazard; have a permit storage treatment and transport of harmful toxic waste; have permissible limits of discharge into public drains, etc.; have appropriate equipment in the event they are likely to release gaseous, particulate or solid untreated discharges; to give due cognizance to safety of workers; to dispose of solid wastes in an environmentally safe manner; and to produce environmental audits as may be demanded by the Agency. The Agency is to serve as the "On-the-scene-Coordinator". Each state of the Federation is to designate industrial layouts and provide buffer zones between industrial layouts and residential areas. Hence, NPAR is required to achieve environmental quality regardless of cost which implies that pollution should be prevented, not just controlled. This approach became unnecessarily rigid since huge demands were placed for combating pollution hazard without due consideration to economic factors. Many of the standards set were also unachievable either

because the Agency did not have the capacity to monitor and enforce them or because the Agency was not protected from special or political interests. The Agency failure in using its broad rule-making power to engage in creative setting of standards resulted in the making of Regulations that failed to incorporate incentives strategy or define basic directions for the future.

3.1.5 National Environmental Protection (Management of Solid and Hazardous Wastes) Regulations, 1991

The National Environmental Protection (Management of Solid and Hazardous Wastes) Regulations (NMSHR) is another subsidiary legislation of section 40 of FEPA Act whose objectives were to identify solid, toxic and extremely hazardous wastes dangerous to public health and environment; provide for surveillance and monitoring of these wastes until they are detoxified and safely disposed of; provide guidelines necessary to establish a system of proper record keeping, sampling and labeling; establish suitable and necessary requirements to facilitate their disposal and research into possible re-use and recycling of these hazardous wastes. In order to achieve its stated objectives, NMSHR established provisions in relation to: dangerous waste list, spills and discharges into the environment, contingency plan and emergency procedure, record keeping in facilities, ground water protection, surface impoundments, land treatment, waste piles, landfills, incinerators, and tracking programme. Despite the comprehensive coverage of NMSHR, it was still not effective for the same reasons noted in respect of the NELR and NPAR, FEPA. The cost of N200 or imprisonment for one year or both fine and imprisonment for misrepresenting facts was, thus, lower than the cost of compliance and violators will therefore, consider it as cheaper to pay fines than to comply with the Regulations.

3.1.6 Environmental Impact Assessment Act, 1992

The primary goal of the Environmental Impact Assessment Act (EIA) is to establish before a decision is taken by any person, corporate body or unincorporated body including the government, the likely or significant effect an activity will have on the environment before the activity is embarked upon. This is expected to be a detailed statement concerning the environmental impact of any proposed action which is required to contain information about the unavoidable adverse environmental effects, any irreversible commitment of resources necessary and available alternatives to the action. Public participation is very important for a genuine and successful environmental impact assessment particularly at the review and consultation stages. Affected communities and non-governmental organisations in Nigeria have expressed concerns that the EIA process lacks genuine and considerable public participation. Assessors hardly, consider alternative courses of action at an early stage of the project planning cycle, in order to choose the most favourable. EIA reports are usually put together and presented in such a way that majority of the people do not have the access and opportunity to review them. The few who have access find the reports so technical, unduly complex and of such volume that they are not able to meaningfully participate in the assessment and review within the duration of the display. Those who are responsible for managing the EIA process are faced with the problem of over-bearing political influences, coupled with the absence of information sharing and lack of baseline social-economic and environmental data. All these have militated against the efficiency of this Act.

3.1.7 Constitution of the Federal Republic of Nigeria, 1999

Specific provision on the environment first applied in the Constitution of the Federal Republic of Nigeria, 1999 (the 1999 Constitution). With the introduction of section 20 into the 1999 Constitution, hopes were raised that environmental issues have finally been elevated to a

constitutional level in Nigeria. Not surprisingly, however, the sharp debate regarding the provision has been how directly effective it can be for the environment. This provision is seen as narrow and remote to make any impact on environmental challenges in Nigeria. It is obvious from the constitution that Nigeria is not truly desirous of initiating any environmental change which may disturb its economic direction and strategies in the face of realities that require a country like Nigeria to give a strong and effective constitutional backing to her environment protection strategies. The constitution should state that the protection of the environment is of a general interest and every individual shall abstain from engaging in acts that may result in the degradation, destruction or contamination of the environment and should be made to proclaim the right of every person in Nigeria to have a healthy and balanced environment.

3.1.8 National Oil Spill Detection and Response Agency (Establishment) Act, 2006

The primary responsibilities of the National Oil Spill Detection and Response Agency (NOSDRA) are surveillance and ensuring compliance with all existing environmental legislation, and the detection of oil spills in the petroleum sector. Despite the enormous responsibilities of this Act, there is no provision for offences under it.

3.1.9 National Environmental Standards and Regulations Enforcement Agency (Establishment) Act, 2007

The National Environmental Standards and Regulations Enforcement Agency (Establishment) Act, 2007 (NESREA Act) which repealed the FEPA Act was enacted to provide for the establishment of the National Environmental Standards and Regulations Enforcement Agency whose primary objective is the protection and development of the environment in Nigeria and for related matters. The NESREA Act is a belated response of the law to what was at the time a revolutionary change in the structure of environmental enforcement and regulation in Nigeria. When FEPA was scrapped in 1999 and the Ministry of Environment assumed its functions, the expectations were that a new regulator would be put in place, and also a succeeding legislation that would articulate some of the fundamental provisions that were inarticulate in the FEPA Act. The new law (NESREA Act) was not put in place until eight years after (July 2007). Since its inception, NESREA has introduced a lot of subsidiary legislation. Eleven (11) of these were introduced in 2009 pursuant to section 34 of' NESREA Act, while thirteen (13) others were introduced in 2011. A major challenge that has consistently confronted NESREA is confronted with the disagreement posed by other agencies of government in situations where economic development imposes risk on ecological protection. In this respect, there is an urgent need to achieve effective synergy in intergovernmental Agencies.

Self-Assessment Exercise

Environmental Impact Assessment is a necessity before executing major projects. Discuss with reference to the Environmental Impact Assessment Act, 1992.

4.0 Conclusion

Generally, Nigeria's legal framework for environmental protection is broad as several policy actions have been taken to cover a whole range of areas that are directly or indirectly related to ensuring that the environment is protected. These are in relation to natural resources (water, land, air, forest, coastal area, oceans, island and their resources, non-renewable natural resources, protected natural areas, and wild and flora and fauna), environmental protection,

environmental quality and international cooperation. Despite all these, Nigeria is facing serious challenges in achieving an effective environmental protection regime.

5.0 Summary

In this unit, we discussed Nigeria's environmental laws. Since the Koko waste incident in Nigeria, there has been an increased awareness among the people about the ecological challenges in the nation. Also, there are increased numbers of legislation yet the environmental challenges are frightening. These laws need to be updated from time to time to meet with the present day reality.

6.0 Self-Assessment Exercise

Briefly explain the three environmental laws in Nigeria.

7.0 References/Further Reading

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