



NATIONAL OPEN UNIVERSITY OF NIGERIA

PCR 851



**Environmental Security
and Conflict Resolution**
Module 5

PCR 851 Environmental Security and Conflict Resolution

Module 5

Course Developer/Writer

Chinasa Ugwuanyi, National Institute for International Affairs, Lagos

Course Editor

Prof. Osita Agbu, National Institute for International Affairs, Lagos

Credits of cover-photo: Henry Ude, National Open University of Nigeria

National Open University of Nigeria - 91, Cadastral Zone, Nnamdi Azikwe Express Way, Jabi, Abuja, Nigeria



www.nou.edu.ng centralinfo@nou.edu.ng

oer.nou.edu.ng oerunit@nou.edu.ng OER repository

Published in 2021 by the National Open University of Nigeria

© National Open University of Nigeria 2021



This publication is made available in Open Access under the [Attribution-ShareAlike4.0 \(CC-BY-SA 4.0\) license](https://creativecommons.org/licenses/by-sa/4.0/). By using the content of this publication, the users accept to be bound by the terms of use of the Open Educational Resources repository oer.nou.edu.ng of the National Open University of Nigeria.

The designations employed and the presentation of material throughout this publication do not imply the expression of any opinion whatsoever on the part of National Open University of Nigeria concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The ideas and opinions expressed in this publication are those of the authors; they are not necessarily those of National Open University of Nigeria and do not commit the organization.

How to re-use and attribute this content

Under this license, any user of this textbook or the textbook contents herein must provide proper attribution as follows: “First produced by the National Open University of Nigeria” and include the NOUN Logo and the cover of the publication. The repository has a version of the course available in ODT-format for re-use.

If you use this course material as a bibliographic reference, then you should cite it as follows: “Course code: Course Title, Module Number, National Open University of Nigeria, [year of publication] at oer.nou.edu.ng

If you redistribute this textbook in a print format, in whole or part, then you must include the information in this section and give on every physical page the following attribution: Downloaded for free as an Open Educational Resource at oer.nou.edu.ng If you electronically redistribute part of this textbook, in whole or part, then you must retain in every digital file (including but not limited to EPUB, PDF, ODT and HTML) the following attribution:

Downloaded for free from the National Open University of Nigeria (NOUN) Open Educational Resources repository at oer.nou.edu.ng

Unit I Environmental Conflict and Environmental Security

1.0 Introduction

The field of environmental security has come to represent a way for scholars and policy makers to interrogate the concepts of security and the environment. For some observers, geo-political changes since the end of the Cold War, have created space for new concerns such as the environment, to be incorporated in security discussions, presenting an opportunity for environmental issues to be considered in the realm of “high politics” and thus to be given higher priority in international relations (Deudney, 1990:461; Buzan, 1991). Within academia, scholars have linked security and the environment in several different ways resulting to two distinct discourses linking security and the environment - environmental conflict and environmental security. Though there is overlap between the two discourses, each focuses on particular elements of security and its relationship to the environment with each providing distinct understandings of the security implications of environmental degradation.

2.0 Objectives

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

- relate environmental issues to security concern
- discuss the distinct views of both environmental conflict and environmental security.

3.0 Main Content

3.1 Environmental Conflict in Relation to Security

The environmental conflict discourse is characterised by a relatively narrow view on the relationship between security and the environment. This discourse clearly links traditional security concerns to the environment in that the central focus is on the possibility that groups within society will engage in violent conflict as natural resource stocks diminish due to environmental degradation. There are several broad strands that are identified as increasing the likelihood of environmentally-induced conflicts, including population increases, migration, and resource scarcity (Barnett, 2001). Resource scarcities can be potentially severe, that they can seriously undermine human well-being.

From this perspective, some types of scarcity, coupled with other factors, can contribute to violent conflict. Additionally, the state plays a central role within the environmental conflict discourse. Large-scale internal conflict over resources is seen to put the security of the state at risk (Homer-Dixon, 1999). This focus raises issues dealing with the differences between national security and global security, and which concept is better suited for thinking about global environmental problems (Allenby, 2000:5).

Homer-Dixon (1994:5, 1999) has argued that adaptation is an essential move for states if they want to effectively deal with environmental conflict. States that are best able to adapt will reduce the likelihood of large-scale environmental conflict within their borders. The

environmental security discourse highlights the negative impacts of environmental degradation for human beings. While the environmental conflict discourse can be linked directly to traditional understandings of military security and the security of states, the environmental security discourse is much more closely linked to the notions of “human security” in which the protection and insurance of human welfare is of central concern. A 1994 United Nations Development Programme (UNDP) report outlines seven areas of human security: (1) economic security, (2) food security, (3) health security, (4) environmental security, (5) personal security, (6) community security, and (7) political security (Smith 2005). The defining characteristic of the environmental security discourse is its emphasis on the security implications of environmental degradation for all human beings (rather than simply the state). People will experience environmental change differently depending on current and historical patterns of resource allocation and the complex feedbacks inherent in human-environment systems (Detraz and Betsill, 2009:303).

The main argument in this discourse include the environmental impact of accelerating globalisation, concerns over population increases, the spread of disease, and the potential for sustainable development. In general, the environmental security discourse is broader than the environmental conflict discourse, because of the former’s concern with issues concerning all of humanity and the latter’s more focused concern with those susceptible to environmental conflict and the implications for the state.

Some may view a broader discourse as a negative and fear that the concept is so encompassing that it becomes unusable. This is a similar line of reasoning to those who wish to maintain a fairly narrow definition of security in general (Deudney, 1990). Once everything becomes a security issue, then it loses its uniqueness. However, this does not necessarily have to be the case. The environmental security discourse specifically looks at those environmental issues that present a security risk for human populations.

Self-Assessment Exercise

Discuss environmental issues in relation to security concerns.

4.0 Conclusion

The issue of environment-related conflict can be incorporated into the environmental security discourse as it affects several areas of human well-being. However, from this perspective, conflict is just one of a host of security issues related to environmental degradation, and the central concern is with its effects on a wider variety of actors - including states, sub-state actors, and supra-state actors. The argument within this discourse focuses on protecting humans from environmental insecurity. From this perspective, the state can be seen as both helping to ensure security and as an institution that can often act in ways to make environmental insecurity worse. Because the state remains the primary form of political organisation in the international system, it is a necessary actor to incorporate into environmental security analyses.

From the environmental security perspective, both human behaviour (such as high consumption patterns and high population levels) and natural processes (such as changes in precipitation levels, the growth or decline of species populations, or changes in levels of pathogenic microorganisms), contribute to environmental insecurity for humans. It is important to note that many of these natural processes can also be worsened by human behaviour such as consumption and population growth. However, despite the potential

contributions that humans make to processes that lead to environmental insecurity, there is a different degree of intentionality in the environmental security discourse when compared with the environmental conflict discourse. In the environmental conflict discourse, humans have a high degree of intentionality. This means that segments of society knowingly come into violent contact with each other because of the presence or absence of a resource. From an environmental security perspective, humans are rarely seen as intentionally contributing to the insecurity of others.

5.0 Summary

The environmental security and environmental conflict discourses represent two distinct ways of conceptualising the relationship between security and the environment. Environmental conflict discourse is more than simply a part of the broader environmental security discourse as each has its own distinct views about these issues. Those who use an environmental security discourse introduce a broad range of threats and vulnerabilities into their analysis of environmental change, focus on the negative effects to human populations. In contrast, the environmental conflict discourse uses a narrower set of argument to describe the connection between security and the environment (emphasising conflict), privileges the security of the state over human populations.

6.0 Self-Assessment Exercise

Discuss the link between environmental conflict and environmental security.

7.0 References/Further Reading

Allenby, B. R. (2000). "Environmental Security: Concept and Implementation." *International Political Science Review*, 2000, vol. 21, no.1.

Barnett, J. (2001). *The Meaning of Environmental Security: Ecological Politics and Policy in the New Security Era*. New York: Zed Books.

Buzan, B. (1991). *People, States and Fear: An Agenda for International Security Studies in the Post-Cold War Era*. Boulder: Lynne Rienner Publishers.

Detraz, N. & Betsill, M. M. (2009). "Climate Change and Environmental Security: For Whom the Discourse Shifts." *International Studies Perspectives*.

Deudney, D. (1990). "The Case against Linking Environmental Degradation and National Security." *Millennium: Journal of International Studies*, Vol. 19, no.3.

Homer-Dixon, T. (1994). "Environmental Scarcities and Violent Conflict: Evidence from Cases." *International Security*, Vol. 19, no.1.

Homer-Dixon, T. (1999). "Environment, Scarcity, and Violence." Princeton, NJ: Princeton University Press.

Smith, Steve (2005). "The Contested Concept of Security." Ken Booth (Ed.). *Critical Security Studies and World Politics*. Boulder: Lynne Rienner Publishers

Unit 2 Linking the Environment to Conflict

1.0 Introduction

Past and modern events have confirmed that environmental stress often results in conflict, frequently along ethnic lines (for examples Rwanda, Somalia, and Darfur). This is exacerbated by population pressure, resource shortages, environmental change, and natural hazards. It is obvious that this trend will persist because recent impact of environmental change (such as flood) will continue to stress marginal environments, especially in places with weak governance, making clear the relationship between stability and environmental factors (Homer-Dixon and Levy, 1995:189). Non-sustainable environmental practices, migration, and resource shortages, which are common in developing states, may further destabilise states with weak governance (Gleditsch et al., 2007).

Conflicts with an environmental component coupled with divisive ethnic dimensions, such as those observed in Rwanda, have increased pressure on the West and the U.N to commit resources to stability efforts (Drapeau and Mignone, 2007). The environment first became an issue in the U.S. National Security Strategy in 1991, when the National Security Council (NSC) pointed out that, “stress from environmental challenges is already contributing to political conflict” (NSC, 1991).

By 2005, the Department of Defense (DoD) identified environmentally related instability as a fundamental strategic concern because evidence suggested that environmental stress is an important contributor to contemporary conflicts. Therefore, with continued environmental destabilisation in weaker states and the exploitation of ungoverned spaces by violent international actors, governments, non-governmental organisations and intergovernmental bodies will have to deal with humanitarian disasters and ethnic violence.

2.0 Objectives

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

- describe the linkage between environment and conflict
- highlight the key findings in linking environment and conflict
- explain the framework for analysis of environmental conflict in Africa.

3.0 Main Content

3.1 Linking the Environment to Conflict

To understand exactly how environment and conflict are linked, the most prominent work in this field is that of Thomas Homer-Dixon and Jay Blitt. In their 1998 book titled *Ecoviolence*, the authors postulated the following eight key findings:

- Scarcities of renewable resources produce civil violence and conflict.
- The degradation and depletion of renewable resources causes environmental scarcity.

- Powerful groups capture valuable resources while marginal groups migrate to ecologically sensitive areas.
- Environmental scarcity constrains economic development and produces migration.
- Existing distinctions between social groups is sharpened by environmental scarcity.
- Environmental scarcity weakens governmental institutions and states.
- The above can in turn cause ethnic conflicts, insurgencies and putsch.
- The International community can be indirectly affected by these conflicts generated by environmental scarcity.

Linking environmental degradation and conflict especially in Africa is self-evident due to the negative impact that has been experienced by the people. Problems like global warming, ozone layer depletion, pollution and deforestation are global in nature; but desertification, soil erosion, water shortage and degradation arising from the activities of the multi-national companies (MNCs) by way of exploration and exploitation of the environment for either oil (in the Niger Delta) or precious stones (in Liberia and Sierra Leone) are linked to conflict in the continent. Desertification which is a process of land degradation in arid, semi arid and dry sub-humid areas resulting from various factors including climatic variations and human activities contributes to other environmental crisis such as the loss of biodiversity and global warming. Desertification has been identified as one of the triggers for armed conflicts in Africa as it engenders political instability, starvation and social breakdown in Niger, Somalia and in Darfur. Since desertification reduces the land available for farming and grazing, conflicts inevitably erupts in the pursuit of space. Soil erosion which is caused by over-cultivation exhausts the soil and overgrazing removes vegetation cover thereby causing soil erosion. For many decades, the south eastern region of Nigeria has been facing erosion problem. Trees that bind the soil together when logged for heating and cooking leads to soil erosion. Soil erosion causes increase in siltation of rivers and dams for example in Sudan where the Reseieres Reservoir which generates 80 percent electricity for the country has decreased by 40 per cent in the past 40 years as a result of silting of the River Nile. There is a nexus between siltation of rivers and availability of fresh water. In Africa, 28 percent of the people have no access to fresh water and about 3 million people die annually due to water related diseases. And so, both soil erosion, desertification and deforestation forces the people off the land turning them into environmental refugees, and they in turn pose a serious threat to the stability of the societies they enter.

Conflicts arising from environmental degradation in Africa in particular are on the increase and pose serious challenges to African governments in terms of development, foreign policy, the environment and security. These activities are also found in Europe as the amount of land degradation through overgrazing, deforestation and agricultural mismanagement in Europe exceeds what is found in Africa and Asia as a whole (Bakut, 2011:245). Sub-Sahara Africa is currently the driest region of the developing tropics and the effect of global warming will exacerbate the situation making it drier. Hence Africa is on the brink of environmental disaster with drought remaining a major problem especially in the Horn of Africa. Drought in the Horn has resulted in famine, causing death of millions of people and rendered hundreds of thousands as environmental refugees in both Ethiopia and Darfur in the late 1980s. During the period, the Darfur region of Sudan become a battle ground between farmers and the nomadic population due to the decreasing availability of land for

both farming and grazing. Also in Nigeria, the conflicts occurring between grazers and farmers in the north east are directly linked with the narrowing of both farming and grazing land due to the pressure of desert encroachment. The greatest threat linked to the environment is water scarcity especially in Africa. Rivers are overused already with severe implications as potential conflict sources considering that several countries use the continent's major rivers. Nine countries share the Nile, eight shares the Zambezi, while ten the Niger. Smaller rivers like River Senegal run through Senegal and Mauritania. Hence, they are potential areas of conflict. It is projected that by 2025, Nigeria, Ethiopia, Somalia, Tanzania, Malawi, Lesotho and Zimbabwe will suffer absolute water scarcity (Bakut, 2011). Therefore, it is observed that future wars in Africa will be over water and not necessarily oil. Even in Nigeria, there are a number of environmental degradation related problems that have resulted to flooding which tend to wash away farmlands, crops and roads. The scarcity of farmland leads to conflict among the people. Also in the Chad Basin, water level has dwindled thereby affecting supply and constituting a threat to continuity of farming activities which is the source of livelihood of the people relying on the Chad Basin water supply. All these are directly linked to the impact of the degradation of the environment and constitute threats to the people living in these regions.

Self-Assessment Exercise

In understanding the linkage between environment and conflict, the most prominent work is the one by Thomas Homer-Dixon and Jay Blitt in 1998. Discuss their major findings.

4.0 Conclusion

Is there a nexus between environment and conflict? There is actually a relationship between the environment and conflict globally. Before the recognition of the danger that environmental degradation posed as a new threat to humanity, other forms of threat such as slavery, war and colonialism had dominated the discourse on conflict. Following industrial revolution, the issue of degradation of the environment and its associated dangers to humanity emerged. It is indeed a source of conflict to humanity and a serious global threat to all life on earth.

5.0 Summary

The linking of environmental degradation to this discourse is self-evident due to its negative impact on society. And it has been established that if environmental degradation is not checked, it will lead to serious conflicts especially in Africa.

6.0 Self-Assessment Exercise

From your viewpoint, how is the environment related to conflict.

7.0 References/Further Reading

Bakut, T. B. (2001). "The Environment, Peace and Conflict in Africa." In: Shedrack Gaya Best (Ed.). *Introduction to Peace and Conflict Studies in West Africa*. Ibadan: Spectrum Books Ltd.

Drapeau, M. D. & Mignone, B. K. (2007). "Culture, Conflict, and Climate." *Science*, 316 (5831).

Gleditsch, N. P., Nordås, R. & Salehyan, I. (2007). *Climate Change and Conflict: The Migration Link. Coping with Crisis Working Paper Series*. International Peace Academy. Available at <http://www.ipacademy.org>. Accessed 28 December, 2012.

Homer-Dixon, T. F. & Levy, M. A. (1995). "Environment and Security." *International Security*, 20 (3).

National Security Council (1991). *National Security Strategy of the United States*. Washington, D.C.: U.S. Government Printing Office.

Unit 3 Environmental Challenges

1.0 Introduction

It was predicted by a Swedish scientist Svante Arrhenius in 1896 that human activities would interfere with the way the sun interacts with the earth. And this prediction had become real as environmental changes especially climate change, is now disrupting global environmental stability. Global environmental issues have raised fundamental existential posers, as natural conditions which make human existence and life possible, have changed on a large scale and the aftermath of these dangerous conditions destroy life and nature from their very foundation. Following the industrial revolution, man has increasingly improved his ability to alter nature, which on one hand has liberated man from natural constraints and established a technological base that would make best use of human potential; while on the other hand, situations that risk our survival have constantly resulted from this unbalanced development of new technology (Ueta, 2007:4).

An environmental problem arises whenever there is a change in the quality or quantity of any environmental factor which directly or indirectly affects the health and well-being of man in an adverse manner. Climate change, the depletion of the ozone layer, desertification, deforestation, the loss of biodiversity and the trans-boundary movements of hazardous wastes and chemicals are all environmental problems that touch every nation and adversely affect the lives and health of their populations.

Objectives

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

- describe the various environmental challenges facing humanity
- describe those environmental problems facing Nigeria as a country
- explain the most important global environmental problem facing humanity.

3.0 Main Content

3.1 Global Environmental Issues

3.1.1 Climate Change

It is widely acknowledged that climate change is engendered by human activities which releases greenhouse gases into the atmosphere and consequently increases global average sea level and poses a threat to human existence. As a result, the earth is getting warmer. Global warming as a result of climate change will greatly exacerbate the range, frequency and intensity of natural disasters like flooding, droughts, torrential rains, ice-storms, tornadoes and hurricanes; cause sea levels to rise due to the expansion of warming waters and the thawing of polar icecaps and other glaciers, which in turn may produce deadly flooding in many low-lying areas and Small Island States; displacing millions from their homes; increase the number of environmental refugees resulting from weather-related

disasters; augment the risk of disease migration and disease outbreaks; and render large areas of the world “uninsurable” due to the magnitude of property damage from disasters. It is widely recognised that human induced climate change is the most important global environmental challenge facing humanity with implications for food security, natural ecosystems, freshwater supply and health (Oladipo, 2010:147).

3.1.2 Ozone Layer Depletion

Ozone present in the atmosphere’s upper layers (the stratosphere) protects humans, animals and plants from the damaging effects of UV-B radiation from the sun without which all life on earth would cease to exist. However, the increasing emissions of ozone-depleting substances (ODS) result in increases of ultraviolet radiation reaching the earth’s surface which can pose several health problems such as increase of melanoma and non-melanoma skin cancers; cause an acceleration of eye cataracts development; reduction in effectiveness of the immune system; impact on nutrition (e.g. reduced plant yield); damage to ocean ecosystems and reduction in fish yield (by killing microbial organisms in the ocean). Skin cancer is the most worrisome health impact of ozone depletion.

3.1.3 Desertification

Desertification is a significant threat to the arid, semi-arid and dry sub-humid regions of the world – which account for 40 per cent of the earth’s land surface. The effects of desertification include - reduction of the land’s natural resilience to recover from climatic disturbances; reduction of soil productivity; damage to vegetation cover; increased downstream flooding, reduced water quality, sedimentation in rivers and lakes and siltation of reservoirs and navigation channels; aggravated health problems due to wind-blown dust, including eye infections, respiratory illnesses, allergies and mental stress; undermined food production; and loss of livelihoods compelling affected people to migrate.

3.1.4 Deforestation

Deforestation strip lands of their tree cover resulting in - erosion, which degrades fertile lands and silts waterways, lakes, rivers and coastal waters, thereby degrades water quality for human consumption and disrupts ecosystem processes by choking fish hatcheries, coral reefs, etc.; decreased groundwater recharge because the barren soils do not infiltrate water as effectively; increased malaria transmission; and desertification and drought. The major causes of deforestation and forest degradation include the need to create agricultural land and to harvest fuel wood for food and energy. Approximately, half of the wood harvested in the world is used as fuel wood and charcoal, mostly in developing countries. Removal of trees reduces the ability of soils to absorb and retain water, thereby contributing to the depletion of the groundwater aquifers that supply about one-third of the world’s population.

3.1.5 Loss of Biodiversity

Flora and fauna have depleted 50 to 100 times more than the natural rate, due to various activities such as the large-scale clearing and burning of forests, over-harvesting of plants and animals, indiscriminate use of pesticides, draining and filling of wetlands, destructive fishing practices, air pollution and the conversion of wild lands to agricultural and urban uses. This species loss and ecosystem disruption is causing a complex range of circumstances with consequences to human health. The loss of biodiversity also obstructs the discovery of new medicines to treat various diseases.

3.2 Environmental Problems in Nigeria

3.2.1 Urbanisation

This is caused by high population growth rate and rural- urban migration. In Nigeria, urbanisation is characterised by growth of city slums with serious environmental implications, which demonstrate the inability of development keeping pace with population growth. Problems of sewage and refuse disposal are quite serious due to high rate of generation of non-biodegradable materials such as plastics. Environmental conditions in cities have gradually deteriorated due to the rapid growth of the cities and the attendant inability of the overstretched social services and infrastructure to cope with the rate of growth. Inadequate storm drains, dumping of refuse into drainage lines and construction of houses on water channels, have led to increased cases of flooding in the urban centers. Thus, environmental problems are associated with the increasing growth of urban slums, including - overcrowding in dirty housing conditions; poor sanitation; unavailability of basic infrastructures and social services such as water, sewage facilities and even lack of access routes (NEST, 1992:152).

3.2.2 Overpopulation

Population is a major factor in all environmental - related issues. Overpopulation causes stress on the environment. Before now, Nigerians regard their “large population size” as a symbol of greatness, power and prestige and tend to resist attempts to reduce it. Overpopulation has now forced traditional societies to abandon age old production systems and resources management techniques that allowed them to produce enough food for themselves at minimal impacts on the environment. Under increased production and enhanced productivity in the country, Mabogunje (1988:17) stated that it will be easy for people to become so exigent, worrying only about what to get out of the environment for their own immediate needs and uses, without caring very much for the consequence, especially for succeeding generations. The Federal Government of Nigeria (1988) National Policy on population for development did observe that the present high rate of the country’s population growth is already contributing significantly to the degradation of the ecology and that land fragmentation, over-farming and over-grazing, have led to soil erosion and desertification, all of which could be exacerbated if the present population growth continues (NEST, 1992).

3.2.3 Deforestation

Forests which are large areas of land with trees visible in area with sub-equatorial and monsoon types of climates, act as safe haven for rare and/or endangered animal species. Forests also act as storm breaks, thereby protecting the towns and villages from destruction. They provide useful products such as wood and charcoal for fuel; fibre for paper and textiles; medicine from the bark and leaves of some plant; breeding ground for animals; act as check to erosion and supply of food and materials for building houses (Omofonmwan and Osa-Edoh, 2008:53). But with the rise in domestic consumption of timber due to increased rate of building construction resulting from the rise in population and income, it would take less than 15 years to exhaust the forest of timber resources (NEST, 1992). Deforestation which is a process whereby trees are felled for several purposes without replanting to replace the felled ones, is dangerous to man, animals and properties because it leads to erosion of the soil and storm which can cause destruction of properties, crops and animals. Generally, exploitation of the forest (as a result of agricultural development, urban growth,

industrial expansion and increasing population) has reduced the extent, diversity and stability of the Nigerian forest thereby resulting to worsening environmental problems in the country such as soil erosion and infertility, desertification and flooding.

3.2.4 Desertification

Deserts are barren lands, waterless and treeless and often sand covered such as the Sahara desert which spread across African continent. So, desertification which is the encroachment of the desert on land that was once fertile, can be engendered either by natural process or by the action of man, and is more obvious in the northern part of the country where the Sahara desert has eaten deep into the once fertile land. Desertification is dangerous to man because it leads to famine, diseases, and destruction of crops, livestock and man. It further contributes to the incidents of diseases like heat-stroke, cerebro-spinal meningitis, Severe Acute Respiratory Syndrome (SARS) and avian flu (Aliyu, 1997).

3.2.5 Pollution

Environmental pollution can be classified into three groups - air or atmospheric pollution, aquatic or water pollution and land or surface area pollution. Air pollution is the contamination of the air by the discharge of harmful substances that can endanger mankind. Man's activities on the surface of the earth have seriously degraded the quality of the atmosphere because the growth and development of industries and urbanisation has contributed greatly to the excess carbon monoxide produced by combustion and other human activities. Presently in Nigeria, several rural towns that had in the past enjoyed fresh and dry air are experiencing air pollution problems (Obajimi, 1998). This is as a result of industrialisation and expansion in human activities. Aquatic or water pollution is the discharge of unwanted biological, chemical and physical materials into water bodies from man's environment that affect the natural condition of water. This incidence is responsible for the wide spread water contamination in most Nigerian cities. Land or surface pollution is the occurrence of unwanted materials or waste on land. The commonest pollutant on land is the waste products that are often scattered on land area in the cities. Most environmental problems are due to the production or consumption of goods whose waste products transform easily into pollutant (Onwioduokit, 1998).

Self-Assessment Exercise

Discuss five major environmental issues facing human kind.

4.0 Conclusion

One of the most important characteristics of environmental change is that it affects all humans on a global scale without regard to any particular country, region, or race. Whether these environmental changes take place in Europe or Africa; or whatever form the pollution takes in any part of the globe – be it toxic pollutants from Asia, Europe, or North America contaminating the Arctic, the consequences are felt all over the world (Agwu, 2010:237). Thus, the whole world is a stakeholder on what should be done to combat these environmental changes.

5.0 Summary

This unit generally described the various global environmental issues and those experienced in Nigeria in particular. All of these environmental issues have long-term effect on the people and the societies and are either difficult or impossible to reverse over the period of one generation. Unless global actions are taken early, we will end up plundering our future in an unprecedented ways.

6.0 Self-Assessment Exercise

In your view, which of the major environmental issues pose the greatest challenge to humanity?

7.0 References/Further Reading

Agwu, F. (2010). "The Impact of Climate Change on Nigeria's Foreign Policy." In: Osita C. Eze & Ogaba Oche (Eds). *Climate Change and Human Security in Nigeria*. Lagos: NIIA.

Aliyu, D. (1997). "Ecological Problems in Nigeria: A Case Study of the Yobe State." Paper Presented to Participants at National Institute of Policy and Strategic Studies, Kuru.

Federal Republic of Nigeria (1988). *National Policy on Environment*. Lagos, Nigeria.

Mabogunje, A. L. (1988). "The Debt to Posterity: Reflections on a National Policy." In: Sada, P.O & Oemerho, F. O. (Eds). *Environmental Issues and Management in Nigeria Development*. Ibadan: Evans Brothers (Nigeria Publishers) Limited.

NEST (1992). *The Challenge of Sustainable Development in Nigeria*. An NGO Report Prepared for United Nations Conference on Environment and Development. Rio De Janeiro, Brazil June 1-12.

Obajimi, M.O. (1998). "Air pollution – A Threat to Healthy Living in Nigerian Rural Towns." *Proceeding of The Annual Conference of Environmental Protection Society of Nigeria*. Ilorin.

Oladipo, E. (2010). "The Global Framework for Mitigating Climate Change." In: Osita C. Eze & Ogaba (Eds). *Climate Change and Human Security in Nigeria*, Lagos. NIIA.

Omofonmwan, S. I. & Osa-Edoh, G. I. (2008). "The Challenges of Environmental Problems in Nigeria." *Journal of Human Ecology*, 23(1).

Onwioduokit, E. A. (1998). "An Alternative Approach to Efficient Pollution Control in Nigeria." *Proceedings of the Annual Conference of Environmental Protection Society of Nigeria*, University of Ilorin, Ilorin, Nigeria.

Ueta, K. (2007). "Public Policy for Global Environmental Protection." Kyoto Sustainability Initiative (KSI), Institute of Economic Research, Kyoto University, Japan, 2007-04.

Unit 4 Natural Resources and Conflict

1.0 Introduction

Conflict over natural resources is not part of everyday life, but access to resources cannot be taken for granted. We use energy to heat our homes, cook food, light our streets, use processed timber to form desks, pencil, paper etc. Access to these natural resources cause conflict or is used to fuel conflict. For example, Paul Collier estimated that about 50 armed conflicts in 2001 had strong links to natural resource exploitation, by either helping to trigger, intensify or sustain those violence. In Pakistan and Bolivia, violent protest broke out over the distribution of water. In the Middle East, disputes over oil fields in Kuwait led to the first Gulf war. And in Nigeria, oil exploration also resulted to insecurity in the Niger Delta region. Some resources like water and land are used locally and may not have impact beyond the local area but others such as timber, minerals and oil which are used to produce revenue cause serious problems. Thus, conflict over natural resources is often part of and exacerbates a larger struggle over political, economic, cultural or religious issues in the society.

2.0 Objectives

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

- explain natural resources
- describe the various categories of natural resources
- Relate these resources to conflict.

3.0 Main Content

3.1 Natural Resources

Natural resources are those materials that occur in nature such as water, air, land, forests, fish and wildlife, topsoil and minerals and are essential or useful to humans. They have broad categorisation but could be split as renewable and non-renewable resources. The renewable resources such as cropland, forests and water can be replenished over time by natural processes and if not over-utilised, are indefinitely sustainable, while the non-renewables such as diamonds, minerals and oil are found in finite quantities and their values increase as supplies decrease.

3.2 Renewable and Non-Renewable Resources

Water

Water is a necessity of life as it can be used for drinking, washing, agriculture and industry. It is considered as an abundant resource since it covers nearly three quarters of the globe but potable water could be very scarce. Presently, due to the impact of climate change, drought affects almost every continent and appears to be growing worse as the percentage of the

earth's land stricken by serious drought has doubled since the 1970s (United States Institute Peace document, 2007).

Furthermore, water is increasingly becoming scarce through pollution and restricted access, as 1.1 billion people live without clean potable water and 3,900 children die every day from water-borne diseases. Thus, as the global population continues to increase, water scarcity will become a serious problem. Water scarcity causes and sustain conflicts globally for example China – Shandong and Guangdong Provinces (2006); Ethiopia (2006); India (2004); Kenya (2005) and Yemen (199) (Gleick, 2006). Bodies of water such as oceans, seas, lakes and rivers are linked to conflict due to their roles in transportation, development and culture. Dependence on sources of income within the bodies of water such as fisheries and offshore oil fields can lead to conflict. For example, the disputes over fishing led to the “Cold War” between Britain and Iceland in the 1950s and 1970s (World Water Council document, undated).

Land

Due to population growth and environmental degradation, land is becoming increasingly scarce. Possession of land which holds a high economic value means access to other resources such as minerals, timbers and animals. Communities also have strong emotional and symbolic attachments to land and the resources on it. This is why competition for control of valuable land can cause or sustain conflict. For example, violent conflicts over land have occurred in several parts of the world, in China, East Timor, Kosovo, Rwanda, Tajikistan and Nigeria.

Timber

Timber which functions as a primary source of income is becoming increasingly a scarce resource as population growth and industrialisation are destroying the rainforest and causing environmental degradation. Since timber is used for construction and development, it plays an important role in conflict. For example, conflict over timber occurred in Burma, Cambodia, the Democratic Republic of Congo and Liberia.

Oil and Gas

Oil (petroleum - a flammable liquid that can be refined into gasoline) and natural gas (a combustible gas used for fuel and lighting) are the two primary sources of fuel. Access to fuel, is one of the greatest concerns for developing and developed countries because of their dependence on energy sources. Many of the world's largest petroleum reserves are located in areas suffering from political instability or conflict, such as Iran, Iraq, Nigeria, Venezuela, and Sudan. Thus, the value and demand for fuel, especially petroleum, allows conflicts in these areas to have an impact on the global economy. As with rivers, oil fields and pipelines frequently cross borders, and contribute to tensions or conflict. For example, after East Timor separated from Indonesia in 2002, it renegotiated the agreement Indonesia had made with Australia over oil and gas rights in the disputed areas of the Timor Sea.

Minerals

Minerals are naturally occurring substances obtained usually from the ground. Valuable minerals become conflict minerals when their control, exploitation, trade, taxation or protection contributes to, or benefits from, armed conflict (USAID document, undated). Conflict minerals have varied commodity values and occur in many geographical locations:

for example, diamonds in Western Africa, amber in Russia, and gold in Indonesia. Despite the fact that minerals such as gold and diamonds hold significant value as gems, all minerals generate revenue and power for governments, rebel groups, or whoever owns the land or has the ability legally or illegally to extract them. Conflicts over minerals do stay within boundaries; neighboring countries sometimes compete for resource wealth and thus exacerbate conflict or prevent peace building in the area for example the dispute on the Bakassi Peninsula between Nigeria and Cameroun. Diamonds are the conflict minerals that have received the most attention, because they have been used by several rebel groups in Africa (e.g. groups in Angola and Sierra Leone) as a source of income, (Collier, 2003:38). Other examples of conflict minerals include coltan (tantallite, used in cell phones, computers, and game consoles) in the Democratic Republic of Congo and copper in Papua New Guinea.

Self-Assessment Exercise

Distinguish with examples, renewable and non-renewable natural resources and discuss how access to them can result into conflicts.

4.0 Conclusion

Developing countries are more dependent on natural resources as their primary source of income, and their populaces depend on these resources for their livelihoods. Some natural resources play important roles in the well-being of the local communities as some are used for trade purposes. Both renewable and nonrenewable natural resources that are controlled by the state especially in developing countries are used as exports by the government to make profit and attain power. Developed countries rely heavily on imports of these natural resources for their industries, especially from resource endowed developing countries. Natural resources do not only serve as a commodity in the local or global economic structure, they also play a prominent cultural role for many local communities and may even be a source of pride for the nation as a whole. This is one of the reasons why many developing nations want to control their natural resources. Resources such as land, water, and timber (forests) usually have historical and cultural significance, serving as the home of ancient civilisations, historical artifacts, and cultural practices. Since natural resources are necessary for life and industrial growth and its demand is increasing, it is not surprising that resource scarcity and unsustainable consumption of these resources could contribute to or cause violent conflict.

5.0 Summary

This unit described those natural resources that are common causes of conflict or those involved in the escalation of conflict. A nation's access to natural resources often determines its wealth and status in the world economic system. Thus, natural resources often underlie the struggles over territory which has been the most prevalent form of conflict.

6.0 Self-Assessment Exercise

Discuss how struggles over natural resources can cause conflicts or used to exacerbate conflict situations.

7.0 References/ Further Reading

Collier, P. (2003). "The Market for Civil War." *Foreign Policy*, no. 136.

Gleick, P. (2006). "Environment and Security Water Conflict Chronology." Pacific Institute.

United States Institute of Peace (2007). Natural Resources, Conflict and Conflict Resolution. A Study Guide Series on Peace and Conflict, Washington, DC, September 14.

USAID, *Minerals and Conflict Toolkit*, Available at

http://www.usaid.gov/our_work/crosscutting_programs/conflict/publications/toolkits.html,
accessed 20/12/2012.

World Water Council, "Water Crisis", Available at
<http://www.worldwatercouncil.org/index.php?id=25>, accessed 20/12/2012.