

ISSN 1991-8976

# Rajshahi University Law Journal

Volume 09 2014



**Faculty of Law  
University of Rajshahi**

**Introducing 'Virtual Justice' in Bangladesh through ICT Based Judicial Development: A Way of Minimising Cost, Complexity and Delay**

**Lawless Laws: Land Rights, Poverty and Empowerment of Common People in Bangladesh**

**Sámi Reindeer Husbandry: Legal-Philosophical and Cultural-Anthropological Dimensions**

**Combating Environmental Challenges: An Overview and Analysis of International Environmental Order**

**Review of Regulations on Wastewater and Its Reuse in Agriculture in Rajshahi City Area**

**Legal Framework to Combat Road Accidents in Bangladesh: Issues and Challenges**

**আইন চর্চার উপকরণ হিসেবে যুক্তির প্রয়োগ**

**Evolution of Fixed and Floating Charges over Book Debts in Common Law Jurisdictions through Case Laws: An Analysis**

**Impact of Human Rights Abuses on Community Sustainability in the view point of Immigration in the Nordic Countries**

**The Impact of *Ordre Public* on Party Autonomy in International Commercial Arbitration: National and International View**

**Charity Begins at Home: A Comparative Study of English and Islamic Laws**



ISSN 1991-8976

# **Rajshahi University Law Journal (RULJ)**

**Volume 09 2014**

**Published by**

**Dean**

**Faculty of Law**

**University of Rajshahi**

**Rajshahi - 6205**

**Bangladesh**



**Faculty of Law**  
**University of Rajshahi**

# **Rajshahi University Law Journal (RULJ) Volume 09 2014**

## **Editorial Board**

**Editor**

**Biswajit Chanda**  
Dean, Faculty of Law, R.U.

**Member**

**Professor Begum Asma Siddiqua**  
**Professor M Anisur Rahman**  
**Professor M Ahsan Kabir**  
**Professor Md Hashibul Alam Prodhan**  
**Dr Md Abdul Alim**  
**Md Shahriar Parvez**  
**Tapos Kumar Das**

**Rajshahi University Law Journal (RULJ) 2014**

Faculty of Law  
University of Rajshahi

**Volume 09 2014**

**Published by**  
Dean  
Faculty of Law  
University of Rajshahi  
Rajshahi - 6205, Bangladesh

© Reserved by the Publisher

**Cover Design & Printed by**  
Md. Ariful Islam  
Text Dot Com (TDC)  
Farmgate, Motihar, Rajshahi-6212  
Cell: 01711-951377

**Subscription Rates**  
For Individuals : Tk200.00 US\$ 20 (excluding postage)  
For Organisation : Tk300.00 US\$ 30 (excluding postage)

[Published in January 2016]

## Rajshahi University Law Journal (RULJ) Volume 09 2014

| Author's Name                                         | Article                                                                                                                              | Page |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------|
| Md Raisul Islam<br>Biswajit Chanda<br>Bayazid Hossain | Introducing 'Virtual Justice' in Bangladesh through ICT Based Judicial Development: A Way of Minimising Cost, Complexity and Delay   | 1    |
| S M Masum Billah                                      | Lawless Laws: Land Rights, Poverty and Empowerment of Common People in Bangladesh                                                    | 26   |
| Dr Dawid Bunikowski                                   | Sámi Reindeer Husbandry: Legal-Philosophical and Cultural-Anthropological Dimensions                                                 | 42   |
| Sheikh Hafizur Rahman<br>Farhana Helal Mehtab         | Combating Environmental Challenges: An Overview and Analysis of International Environmental Order                                    | 57   |
| Abu Naser Md Wahid                                    | Review of Regulations on Wastewater and Its Reuse in Agriculture in Rajshahi City Area                                               | 77   |
| Momotaz Khatun                                        | Legal Framework to Combat Road Accidents in Bangladesh: Issues and Challenges                                                        | 98   |
| মো: মাসুদ আলম                                         | আইন চর্চার উপকরণ হিসেবে যুক্তির প্রয়োগ                                                                                              | 114  |
| Sharmin Farzana                                       | Evolution of Fixed and Floating Charges over Book Debts in Common Law Jurisdictions through Case Laws: An Analysis                   | 130  |
| Nafisa Yeasmin                                        | The Impact of Human Rights Abuses on Community Sustainability in the View Point of Immigration in the Nordic Countries               | 142  |
| Parvez Ahmed                                          | The Impact of <i>Ordre Public</i> on Party Autonomy in International Commercial Arbitration: National and International Perspectives | 157  |
| Md Nannu Mian<br>Md Mamunur Rashid                    | Charity Begins at Home: A Comparative Study of English and Islamic Laws                                                              | 169  |



## COMBATING ENVIRONMENTAL CHALLENGES: AN OVERVIEW AND ANALYSIS OF INTERNATIONAL ENVIRONMENTAL ORDER

Sheikh Hafizur Rahman<sup>\*</sup>  
Farhana Helal Mehtab<sup>α</sup>

**ABSTRACT** Empirical data has established that widespread environmental pollution has created serious threat to our planet. Environmental pollution has given rise to global warming, green house effect, sea-level rise, loss of biodiversity, and depletion of ozone layer. Successive reports of the Intergovernmental Panel on Climate Change (IPCC) have confirmed the above mentioned adverse impacts of the environmental pollution. International community became concerned about what to be done to reduce emission. In 1992, United Nations Framework Convention on Climate Change (UNFCCC) was formed and countries considered the ways to be adopted collectively to reduce green house gases and to fight the adverse impacts of climate change. The nations around the globe have realized the necessity to develop a just international environmental order to fight environmental dangers, including the adverse impacts of climate change. Development of a just international environmental order needs the cooperation of developed and developing nations. Their collective efforts are sine qua non for developing tools to fight environmental dangers. But developed and developing countries are not in consensus to fight the environmental menace in the same manner. This article has made an overview of the environmental challenges created to our planet. It has noted that the international environmental law developed by the international actors is in its formative stage and is considered as 'soft law'. This article argues the necessity of establishing a just international environmental order to fight environmental challenges and put forward the imperatives that we should do collectively.

**KEYWORDS:** Environmental challenges, just international environmental order, climate change, biodiversity, soft law, environmental pollution, international environmental law, developing country, conservation of environment, sustainable development

---

<sup>\*</sup> Associate Professor, Department of Law, University of Dhaka; hirkarzon@yahoo.com.

<sup>α</sup> Associate Professor and Head, Department of Law, Daffodil International University, Dhaka; farhana@daffodilvarsity.edu.bd.



## **I. INTRODUCTION**

Extensive urbanisation and industrialisation over last two and half centuries have created challenges for environment. Global warming, depletion of ozone layer, greenhouse effect, destruction of biodiversity and sea level rise have created serious threat for the existence of flora and fauna. International community has developed international environmental law in response to combat the environmental challenges. International environmental law is still in its formative stage and is considered soft law, as opposed to hard law. Environmental issues, moreover, have posed challenges to the international legal order. Firstly, the legislative, administrative and adjudicative functions of international law have been challenged by environmental issues.

Secondly, international legal order is different from global environmental order as it consists of biosphere of interdependent ecosystem. Global environmental order cannot comfortably coexist with international legal order, because the former is indivisible, but basis of latter is state sovereignty and territorial boundaries of nations. Though the developed countries are largely responsible for environment pollution, but the developing countries are facing flood, cyclone, drought, sea-level rise recurrently. Bangladesh, for example, is projected to lose 17.5 percent of its land if sea level rises about 40 inches. In this paper a brief sketch has been drawn of the challenges created to environment. An overview of the international environmental order is made to point out how a body of laws, principles, and declarations has been developed within couple of decades. This paper discusses the necessity of establishing a just international environmental order and difficulties in establishing that regime. The central theme of the paper is that an international environmental order has been developed in response to environmental challenges, but it is not sufficient to address all the challenges created to environment. We argue that effective principles, binding rules, monitoring mechanism, and adjudicative forums are required to establish a just international environmental order which can effectively combat the threats created to the environment.

## **2. ENVIRONMENTAL REALITY AND THE CHALLENGES CREATED TO ENVIRONMENT**

Environment operates through its own laws to keep the balance of ecology, which is necessary for bio-diversity. But the severe human intervention has created adverse impact on the environment which posed a serious threat to the existence of different species of mammals, fishes, birds, plants, and other components of environment.

The worldwide industrialization and urbanization of last two and half centuries have created serious adverse impacts on the environment. With the discovery of steam engine by James Watt in the eighteenth century industrial revolution begun. Men engaged their all out effort to discover new machines and new energy for better and comfortable life, which emanated from their urge of establishing supremacy over environment. Men started using coal, gas and oil to operate



factories, machines, railway, aero plane, and vehicles, which produced carbon dioxide, nitrogen oxide, sulphur dioxide, causing acid rain, green house effect, deforestation, and destruction of bio-diversity. By product of fossil fuel, together with FCCH emanating from air coolers, refrigerators, and cosmetic spray caused the depletion of ozone layer, making the ultra violet ray of the sun to enter this earth, and cause cancer and other deadly diseases.

Since 1750s on burning of fossil fuel, land use change and agricultural practices caused irreversible loss to the bio-capacity of our planet. During this time about 60 per cent of the ecosystems were exploited unsustainably, making sheer imbalance in the functions of ecosystem. Scientific information of the global warming and ozone layer depletion made the international community aware of the environmental issues. Emphasis has been put on greenhouse gases, particularly carbon dioxide, has exceeded its previous rate in last 6 lakh 50 thousand years and it caused the rise of global temperature by 0.740 C over the past 1 hundred years. If the global warming continues, the global average temperature will rise between 0.50 C and 1.70 C by the 2050s.

Extreme climate change will give rise to floods, droughts and cyclones, which will put food security, access to water and natural resources, better housing and infrastructure at risk. The developing countries will encounter mass hunger, malaria, flood and water shortage if warming will increase 20 C.

From the 1960s countries around the globe and international community started action after the publication of the paradigm-breaking books and articles such as Rachel Carson's "Silent Spring" (1962) and Garrett Hardin's (1968) "The Tragedy of the Commons". In the context of a number of catastrophic events the United Nations Conference on the Human Environment was held in June 1972, which turned the environment a major issue at the international level. The 1970s also witnessed the establishment of the United Nations Environment Programme (UNEP), holding of the World Heritage Convention, the World Climate Conference, the World Climate Programme etc. The 1980s saw a number of catastrophic events which had permanent bearing on the peoples' understanding who realized that if proper measures are not taken to preserve the environment, the human race may reach on the verge of extinction.

### **2.1 A Brief Sketch of the Environmental Challenges**

The growing range of environmental challenges are becoming diverse and severe, requiring intensive international cooperation if we want to face the challenges properly. A list of the environmental challenges will uncover how vulnerable we are to natural disasters and if we do not take appropriate measures, environment will lose its balance, increasingly making human existence difficult. Acid rain, ozone depletion, climate change, loss of biodiversity, and green house effect are the outcome of serious air and water pollution.

In the late nineteenth century the states recognized the transboundary consequences of activities which had impact on shared river and also led to the



destruction of fur seals. In the 1930s, the transboundary consequences of air pollution were recognized in the *Trail Smelter* case. The destruction of flora and fauna became evident by 1970s, which prompted the scientific community to inquire into the environmental threats. As a result the potential consequences of ozone depletion, climate change, green house effect and loss of biodiversity were discovered in the 1980s (Sands 2003: 4).

The available scientific information helped the international community to come to a conclusion that we must be very careful and meticulous about environmental challenges. The list is comprehensive and subsumes climate change, ozone depletion, trans boundary air pollution, deforestation, green house effect, loss of biodiversity, pollution of oceans and seas, destruction of flora and fauna, global warming etc.

## 2.2 Climate Change

The atmosphere contains greenhouse gases, including water vapour, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), CFCs, nitrous oxide (N<sub>2</sub>O) and tropospheric ozone (O<sub>3</sub>), which determines the climate of this earth. The earth's surface emits longwave radiation, which is absorbed by the greenhouse gases. Different types of human activities have caused the increase of some greenhouse gases in the atmosphere which are largely responsible for an enhanced greenhouse effect and global climate change. Emissions of carbon dioxide from the combustion of fossil fuels, emissions of CFC-11 and 12, methane and nitrous oxide, the production of cement, agricultural and other land use, deforestation have been considered as catalyst behind the climate change. The Intergovernmental Panel on Climate Change (IPCC) in its latest report in 2001 predicted that anthropogenic warming is likely to lead to increased floods and droughts (IPCC 2001).

In 1896 Svante Arrhenius, a Swedish scientist, warned about the danger of 'greenhouse effect'. The first World Climate Conference was held in Geneva in February 1979 in the context of growing concern for global warming. The conference came to a conclusion that anthropogenic carbon dioxide could have a long term impact on the climate. The following year the World Climate Programme (WCP) was established, which provided the platform to identify the important climate issues of the 1980s and 1990s by furnishing the framework for international cooperation in research (UNEP 2002).

## 2.3 Ozone Depletion

The ozone layer<sup>1</sup> operates, it is believed, as a bulwark against ultraviolet radiation from the sun and controls the temperature structure of the stratosphere. At the lower altitude O<sub>3</sub>, as a greenhouse gas, can act as a respiratory irritant and can

---

<sup>1</sup> The ozone layer comprises a sheet of O<sub>3</sub> molecules (ozone) that are found in the earth. Ninety per cent of atmospheric O<sub>3</sub> is found in the atmosphere, with maximum concentrations occurring at altitude of 25 kms over the equator and 15 kms over the poles (Sands 2003: 343).



also adversely affect the growth of plant.<sup>2</sup> Since 1960s, losses in the ozone layer over the Antarctic have been evident during the southern hemisphere spring (September-October). Above the Arctic a hole in the ozone layer was first discovered and the British researchers were the first to report the size in 1985 (Farman et al. 1985: 207-10). Significant thinning, as reported by the scientific research, has been taking place in the northern hemisphere and in the 1990s ozone depletion is increasing. Over Antarctica, Australia and mountainous regions of Europe appearance of serious levels of UVB radiation have been reported and again in Antarctica damage to phytoplankton has been discovered (UNEP 1992: 5-6).

The anthropogenic emission of chlorofluorocarbons (CFCs) and halons causes the depletion of ozone layer. Reaching ozone layer these gases break down after exposing to ultraviolet rays and release free chlorine (from CFCs) and bromine (from halons), which break up the ozone molecules and deplete ozone layer. Available scientific information reveals that increased levels of ultraviolet rays are harmful to environment and human health. CFCs are emitted from aerosol-spray, styrofoam, refrigerator and air coolers (Sands 2003: 343).

#### **2.4 Pollution of Oceans and Seas and Its Impact**

Marine environment of oceans and seas are continuously contaminated by pollution from land-based sources, by dumping by vessels at sea, by offshore vessels and seabed activities. Land-based sources are the principal source of ocean pollution. It emanates from two general sources. First, the run-off substances and energy from land, river, pipelines, and other outfall structures are the main source of marine pollution, which account for some 44 per cent of all marine pollution. Secondly, the water of oceans and seas is polluted from or through the atmosphere, as an outcome of the land-based activities, and also from ships and aircrafts. The second process causes around 33 per cent of marine pollution. Pollution from vessels takes place during cleaning of tanks or de-ballasting of ships, or from discharges following accidents. Though pollution from vessel accounts some 12 per cent of the total marine pollution, but it is highly viewed because of its public visibility and environmental consequences, particularly when it involves oil spills. The exploration, exploitation, and processing of sea-bed materials constitute sea-bed activities, which produce harmful substances and account for 1 per cent of marine pollution, though the proportion is high in the Gulf due to oil exploration activities (Sands 2003: 391-2, 428, 438 and 445).

The increase and pervasiveness of coastal pollution was reported by the Joint Group of Experts on the Scientific Aspects of the Marine Environment (GESAMP) in 1990. The open ocean was relatively clean, but the margins of the

---

<sup>2</sup> UNEP, *Environmental Data Report* 1991. The GEO Data Portal is now the authoritative source for data sets used by UNEP. Its online database can be accessed at <http://geodata.grid.unep.ch>, accessed 13 January 2015.



seas were affected by the land-based human activities including extensive human settlement (GESAMP 1990). Large-scale destruction of coastal habitats, especially wetlands, mangroves, salt marshes and seagrasses have been resulted by the urban, industrial and recreational developments. For example, Italy had lost more than 95 per cent of its historic wetlands by 1972, the United States has lost over 50 percent of its coastal wetlands, and 31 tropical developing countries in Africa, Central America and Asia are reported to have lost more than 50 per cent of their mangroves since pre-agricultural period. The growing demands of housing, industry and recreation have altered or destroyed nearly 30 per cent of the land area in the world's coastal ecosystems (Sands 2003: 392).

### **2.5 Urban and Transboundary Air Pollution and Their Impact on Human Health**

Urban air pollutants and transboundary atmospheric depositions are prevalent worldwide as anthropogenic emissions of gases, which subsume oxides of sulphur (Sox), nitrogen oxides (NOx), carbon monoxide (CO), ozone (O<sub>3</sub>), lead (Pb) etc. Combustion of fossil fuels, namely coal and oil, emits sulphur dioxide (SO<sub>2</sub>) which gives rise to the acid rain and is harmful to human health as a potent respiratory tract irritant. As a product of the combustion of fossil fuels from motor vehicles and power stations, two oxides of nitrogen (NOx), together with hydrocarbons, form tropospheric O<sub>3</sub> and other photochemical oxidants. Prevailing winds transport sulphur and nitrogen oxides from their original source before returning to the earth's surface as wet and dry deposits. Adverse effects of up to ten times the estimated natural fluxes of sulphur and nitrogen caused the acidification of fresh waters and terrestrial ecosystems of North America and Europe (Sands 2003: 323). The rapid industrialization also subjects certain tropical regions of developing countries to acidification. Those regions are southern China, south-western India, south-eastern Brazil, and northern Venezuela.

### **2.6 Destruction of Biodiversity**

Biological diversity means and includes flora and fauna and the variety among the living organisms and the ecological communities they inhabit. According to the estimates of the scientific community biodiversity has not encountered a crisis like the magnitude of present time in the past sixty-five million years (WRI 1992: 136). Philippe Sands QC considers three hierarchical categories of biodiversity by which different aspects of living systems can be measured. Those are: (i) genetic diversity which means the variation of genes within a species; (ii) species diversity which means the variety of species within a region; and (iii) ecosystem diversity which means the variety of ecosystem within a region. Biodiversity, in addition to the above mentioned categories, has other expressions which subsume the relative abundance of species, the age structure of populations, the pattern of communities in a region, and changes in community composition and structure over time (Sands 2003: 499).



Tropical deforestation, and destruction of temperate forests, wetland and coral reefs have posed formidable threat to biodiversity. Direct and indirect human activities are responsible for the destruction of nature and the loss of biodiversity. Direct human activities mean hunting, collection, and persecution and indirect human activities mean habitat destruction, and modification from industrial, agricultural and other activities. Severe ecological consequences ensue from the destruction of biodiversity, some of which can be listed as: (i) the ability of ecosystems to purify water; (ii) regenerate soil; (iii) protect watersheds; (iv) regulate temperature; (v) recycle nutrients and waste; and (vi) maintain the atmosphere. Not that only the ecology has to bear the costs, moreover, the economy, medical sector and agriculture have to sustain losses and it involves moral and aesthetic implications. (Sands 2003: 499) There are profound rationales for conserving nature and biodiversity. First, biodiversity is the potential source of biological resources, which include food, pharmaceutical, and other material values which support fisheries, soil conditions, and parks. Secondly, the biosphere is maintained in an interaction with biodiversity which supports human and other lives. Thirdly, biodiversity has enormous ethical and aesthetic value (Sands 2003: 499-500).

The destruction and loss of habitats and species is very much evident, but it's rate is not precisely quantified. The continued loss at the current rate, it has been apprehended, would destroy up to 15 per cent of the earth's species over the next 25 years, with 20-75 species per day being extinct by 2040 (WCMC 2000: 91-5, 117-25). It is to be mentioned that habitat loss is not the only threat to biodiversity. There are other threats, those are: (i) over-exploitation of plant and animal species; (ii) water, soil and air pollution; (iii) industrial agriculture and forestry; (iv) ozone depletion; and (iv) climate change. *World Resources Institute* (1992) identified the root causes of biodiversity loss, which are six in number: (1) population growth and increasing resource consumption; (2) ignorance about species and ecosystems; (3) poorly conceived policies; (4) the effects of global trading systems; (5) inequity of resource distribution; and (6) failure to account fully for the value of biodiversity (WRI 1992: 134-5).

### 3. DEVELOPMENT OF INTERNATIONAL ENVIRONMENTAL ORDER

The rapid development of international and national environmental law from the 1970s does not obscure the fact that there had been diverse laws relating to environment for centuries. The law of public health, the law of town and country planning and the law of torts are the oldest sources of the environmental law. These laws, together with international and European Community laws, have laid down the elementary foundation and constitute the *corpus* of environmental law. International environmental law though has been developed enormously within a time span of 1972-2008, but still many consider it a 'soft' law lacking sufficient number of effective machineries to address environmental challenges.

At the end of the 1960s, the west almost uniquely raised their voice for environmental concern. To the environmental fire a series of catastrophes added



fuel. Thalidomide caused congenital deformations in babies, the spill of oil of the *Torrey Canyon* damaged the picturesque northern coast of France, and the long-range transport of air pollution from Western Europe gave rise to acid rain causing the death of fish and other organisms in the thousands of lakes of Sweden. In this context the United Nations Conference on the Human Environment was held in June 1972 at Stockholm, which turned the environment into a major issue at the international level. A Declaration of 26 Principles and an action Plan of 109 recommendations are the outcome of the Stockholm Conference, which also set a number of targets to achieve. Those targets are: (i) a 10-year moratorium on commercial whaling; (ii) prevention of deliberate oil discharges at sea by 1975; and (iii) a report by 1975 on energy uses (UNEP 2002). According to Long, the Declaration and Principles adopted in the UN Conference on Human Environment constitute the first body of 'soft law' in international environmental affairs (Long 2000).

One of the major achievements of the UN Conference on Human Environment was the establishment of the United Nations Environment Programme (UNEP), a small secretariat in the United Nations which has been enjoined to coordinate all the environmental action within the UN system. The UNEP is headed by an executive director who has lot of responsibilities, some of those include: (i) to provide support to UNEP's Governing Council; (ii) to coordinate environmental programmes within the UN system; (iii) to advise on the formulation and implementation of environmental programmes; (iv) to secure the cooperation of scientific and other professional communities from all parts of the world; (v) to advise on international cooperation in the field of environment; and (vii) to submit proposals on medium and long-range planning for UN programmes in the environment field. UNEP's mission today is to 'Provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations' (UNEP 2002).

A number of multilateral environmental agreements were adopted in the 1970s for wildlife conservation. Four conventions are worth mentioning. Those are: 1971 Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar), 1972 Convention Concerning the Protection of the World Cultural and natural Heritage (World Heritage), 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and 1979 Convention on the Conservation of Migratory Species of Wild Animals (CMS).

Though it's initial focus was waterfowl and their habitats, but now Ramsar Convention deals with water quality, food production, general biodiversity and all wetland areas, including saltwater coasts. There are over 2,200 Ramsar Sites on



the territories of 169 Ramsar Contracting Parties across the world, covering more than 2.1 million square kilometres.<sup>3</sup>

The report of the loss of birds and animals had been available from 1970s. At the time of the UN Conference on Human Environment, the extinction of 150 species of birds and animals were reported and another 1000 were threatened with extinction. In this context a UN Commission recommended to identify endangered species and their conservation and ban international trade in threatened species. Later on the Ramsar Convention controls and/or bans international trade in endangered species, including about 5 thousand animal and 25 thousand plant species.<sup>4</sup>

In the context of growing concern for global warming the first World Climate Conference was held in Geneva in February 1979. The anthropogenic carbon dioxide emissions, the conclusion of the Conference went, could have a long-term effect on climate. In 1980 the World Climate Programme (WCP) was established, which provided the framework for international cooperation in research and the platform for identifying the important climate issues of the 1980s and 1990s (UNEP 2002).

The 1980s has been considered lost decade by many developing countries of West Asia, Africa and Latin America, where most countries registered little growth in income (UNCHS 1996). A number of factors, including severe droughts and unfavourable terms of trade, caused the fall of per capita income 1.2 per cent a year during the 1980s in the sub-Saharan countries (UN 2000). Latin America encountered debt crisis in 1982. The number of refugees doubled from about in 1980 to more than 18 million by the early 1990s wars led to the displacement of millions of people (UNHCR 2000). The growth of population in developing countries, vicious cycle of poverty, and increased number of poor people's living in the cities created pressure on environment (UNEP 2002).

The British researchers, namely Farnham, Gardiner and Shanklin, were the first to report the size of ozone hole in 1985 (Farman et al. 1985: 207-10). The Global 2000 Report admitted that biodiversity was threatened by the extinction of species. In the context of growing understanding that environment and development are interdependent, the UN General Assembly adopted the World Charter for Nature, visualizing the intrinsic value of species and ecosystems and the necessity of their preservation for keeping the equilibrium of environment.

Some catastrophic incidents, in addition to the new discoveries, of the 1980s left permanent bearing on the understanding of the people that how environmental disaster could be harmful to human health. A leak from a Union Carbide plant in

---

<sup>3</sup> See Ramsar Sites at <http://www.ramsar.org/sites-countries/the-ramsar-sites>, accessed 13 January 2015.

<sup>4</sup> See CITES Secretariat, 2001 at <https://www.cites.org/eng/disc/sec/index.php>, accessed 13 January 2015.



Bhopal, India caused the death of 3 thousand people and injury of 20 thousand people in 1984. The same year, up to 1 million people starved to death in Ethiopia. The world's worst nuclear accident took place at the Chernobyl nuclear power plant in the Ukrainian Republic of the former Soviet Union in 1986. The Exxon Valdez supertanker spilled 50 million litres of oil into Alaska's Prince William Sound in 1989. All these incidents are witnessing that the environment of any area of this earth is not remote enough to be subjected to the adverse impact of human activities (UNEP 2002).

With the discovery of more and more information it has become very clear that environmental issues are systematic and addressing them requires long-term strategies, integrated action and active participation of the people of all countries and societies. This was reflected in the World Conservation Strategy (WCS), which envisaged that governments of different parts of the world should undertake their own national conservation strategies, one of the objectives of Stockholm making it almost obligatory to incorporate environmental assessment into development planning. More than 75 countries took multi-sector strategies at national, provincial, state and local levels since 1980 (Omat 1996). The multi-sector strategies were taken to address environmental problems like land degradation, habitat conservation, and loss, deforestation, water pollution and poverty.

In 1983, the World Commission on Environment and Development, also known as Brundtland Commission, was formed to hold hearings with government leaders and the public worldwide on environment and development issues, including agriculture, forestry, water, energy, technology transfer and sustainable development. In its final report, *our common future*, the Commission defined sustainable development, making it a part of environment lexicon and put emphasis on global warming and ozone layer depletion. The existing decision-making structures and institutional arrangements at national and international level, the Commission concluded, could not cope with the demands of sustainable development (WCED 1987).

In 1989, the UNEP and the World Meteorological Organization (WMO) established the Intergovernmental Panel on Climate Change (IPCC) to develop a broad consensus on the science, social impacts and best responses to human-induced global warming. The formation of the IPCC was spectacular in that it was established with three working groups, which were enjoined to focus on the scientific assessment of climate change, environmental and socio-economic impacts and response strategies. The study of IPCC made a sound understanding of the danger of global warming, specifically among the people and policy makers of the industrialized countries (UNEP 2002).

A number of major Multilateral Environmental Agreements were signed in 1980s, three of them are very important. They are: (i) the 1982 United Nations Convention on the Law of the Sea (UNCLOS); (ii) the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer (implementing the 1985 Vienna



Convention for the Protection of the Ozone layer); (iii) and the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention). The UNCLOS is a landmark legal undertaking that covers a wide range of maritime issues, including environmental protection. The parties to this convention are obliged (i) to adopt measures to manage and conserve natural resources; (ii) to minimize marine pollution, including land-based pollution; and (iii) to put restrictions on marine dumping by ships (UNEP 2002).

The Montreal Protocol to the Vienna Convention on the Substances that Deplete the Ozone Layer has been considered one of the most successful examples of international environmental cooperation as its multilateral fund is an inducement to the developing countries. The protocol to the secretariat controls the production, import, and export of the ozone-depleting substances (ODS) and the parties to the protocol must annually submit statistical data of ODS. Over the years the implementation of the protocol has been tightened and expanded significantly. The Basel Convention has three key objectives: (i) to reduce transboundary movements of hazardous wastes; (ii) to minimize the creation of such wastes; and (iii) to prohibit their shipment to countries lacking the capacity to dispose of hazardous wastes in an environmentally sound manner (UNEP 2002).

The 1990s started badly because of the 1991 Persian Gulf conflict when millions of barrels of oil were willfully ignited, which was considered a major environmental catastrophe for West Asia (Bennet 1995). 0.5 million to 11 million barrels of crude oil were released by an oil slick, which was reported to kill 15-30 thousand sea birds. Moreover, about 20 per cent of mangroves in the Persian Gulf were contaminated and 50 per cent of coral reefs affected (The Environmental Impacts of War 1996). The atmosphere was heavily polluted as 67 million tones of oil were burnt, producing about 2.1 million tones of soot and 2 million tones of sulphur dioxide (Bennet 1995).

Industrialized societies, on the other hand, while were benefiting from the technical progress, but developing world did not get any benefit out of it. Thousands of people died in 1999 in earthquakes in Turkey, floods in Venezuela and cyclones in India. The death toll from infectious diseases, like AIDS, malaria, respiratory diseases and diarrhea, was 160 times greater than the number killed in the 1999 natural disasters (IFRC 2000).

The UN Conference on Environment and Development (UNCED), also known as Earth Summit, was held in June 1992 in Rio de Janeiro, Brazil as environmental issues required increased participation and accountability of government and nongovernmental stakeholders. An unprecedented number of state representatives, and civil and economic society members from the whole world attended the UNCED. Representatives of 176 governments, including 100 heads of state, 10 thousand delegates, 1400 nongovernmental organizations and about 9 thousand journalists attended the conference. The conference has been considered



to achieve seven major achievements: (i) the Rio Declaration on Environment and Development, which contains 27 principles; (ii) Agenda 21 - an action program for environment and development to be achieved in the 21<sup>st</sup> century; (iii) two major international conventions - the United Nations Framework Convention on Climate Change (UNFCCC) and the Convention on Biological Diversity (CBD); (iv) the Commission on Sustainable Development (CSD); (v) agreement to negotiate a world desertification convention; and (vi) the statement of Principles for the Sustainable Management of Forests (UNEP 2002).

The Rio principles reaffirmed that humans are 'entitled to a healthy and productive life in harmony with nature,' the mantra of environmental issues which was articulated 20 years back in Stockholm. The Earth Summit provided a forum to address issues both of environment and development. Agenda 21 is the major achievement of the UNCED which lays a strong foundation for the promotion of sustainable development in terms of social, economic and environmental progress. Agenda 21 has 40 chapters and its recommendations are divided into four main areas: (i) social and economic issues; (ii) conservation and management of resources for development; (iii) strengthening the role of major groups, including women, children and youth, indigenous people, NGOs etc. and (iv) means of implementation, which include financial resources and mechanisms, transfer of environmentally sound technology etc (UNEP 2002).

Created in 1991 as an experimental partnership involving UNEP, UNDP and the World Bank, the Global Environment Facility (GEF) was intended to be the financing mechanism for Agenda 21 after the Rio Conference. National, regional, and global development projects get fund from the GEF which is conducive for the world's environment, particularly for climate change, biodiversity, ozone and international waters (UNEP 2000).

In the context of evidence given by the IPCC that climate change posed a real threat, the governments at the Earth Summit signed the UN Framework Convention on Climate Change, the primary goal of which is to stabilize greenhouse gas emissions at levels that will prevent dangerous anthropogenic interference with the global climate. The Kyoto Protocol later on set the actual targets for emissions reductions (UNEP 2002).

After coming into force in 1993, the Convention on Biological Diversity (CBD) proclaimed that it has three goals: (i) the conservation of biological diversity; (ii) the sustainable use of its components; and (iii) the fair and equitable sharing of the benefits from the use of genetic resources. The Convention also addressed habitat preservation, intellectual property rights, bio safety and indigenous people's rights (UNEP 2000).

Though developed out of the process associated with the 1992 UNCED, the Convention to Combat Desertification (CCD) became effective in 1996 and had 177 parties as of December 2001. The purpose of CCD was to develop "national action program" in association with local stakeholders to prevent desertification.



In 1996 the Comprehensive Nuclear Test Ban Treaty (CTBT), an important milestone in international cooperation with a bearing on the environment, was adopted by the UN General Assembly. Preparations for the World Summit on Sustainable Development in 2002 rekindled environmental interests and awareness. At the same time Global Compact was established to build the synergy between the private sector and three UN organizations - UNEP, ILO and the UN office of the High Commissioner for Human Rights (UNEP 2002).

During the United Nations Millennium Summit in 2000 the environmental issues got huge importance, though the actual progress report was not so encouraging. The expert panel of IPCC, made of thousands of scientists from the world, became apprehensive of the consequences of climate change and global warming. IPCC, in early 2001, declared that the evidence for anthropogenic climate change was getting stronger, that the earth was warming faster and that the aftermath would be much more severe than they first predicted. The panel of scientists predicted that average temperature would rise between 1.4 and 5.8 degree Celsius over the 21<sup>st</sup> century. IPCC (2001) states that:

There is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities...Furthermore, it is very likely that the 20<sup>th</sup> century warming has contributed significantly to the observed sea level rise, through thermal expansion of sea water and widespread loss of land ice.

The United Nations Climate Change Conference was held in Bali, Indonesia, from 3-14 December, 2007 which brought together more than 10 thousand participants, including representatives of over 180 countries together with observers from intergovernmental and nongovernmental organizations and media. Parties to the UNFCCC, its subsidiary bodies and parties to the Kyoto Protocol had a number of sessions during the two week conference, which was concluded by a ministerial meeting. The conference adopted Bali Road Map to ensure a secure climate future. The Bali Action Plan, a central instrument of the Bali Road Map, sketch out a new negotiating process to be completed by 2009 to tackle climate change. The Bali Road Map, in addition to the Action Plan, includes the AWG-KP negotiations and their 2009 deadline, the launch of the Adaptation Fund, the scope and content of the Article 9 review of the Kyoto Protocol, decisions on technology transfer and on reducing emissions from deforestation (UNFCCC 2008).

#### **4. ASSESSING THE VALUE OF INTERNATIONAL ENVIRONMENTAL ORDER: HOW IT CONTRIBUTED TO THE DEVELOPMENT OF VARIOUS INSTITUTIONS, PROGRAMMES AND TOOLS**

Within a time span of 37 years lots of conventions, conferences, protocols, declarations, action plans were taken and many institutions were established under the auspices of the United Nations to promote the cause of environment. Many countries enacted laws, established institutions and various tools for: (i) the conservation of environment; (ii) improvement of environmental standard; and



(iii) control and mitigation of environmental pollution as a positive aftermath of global environmental initiatives. In spite of the voluminous initiatives taken in the global and national level to preserve environment, there is gulf of difference between theory and practice, particularly the implementation mechanisms are not so strong and effective as expected. The global environmental initiatives have achievements as well as limitations.

After the conclusion of the UN Conference on the Human Environment, the landmark conference in the history of environmental law and environmentalism, the Organization of African Unity (OAU), and around 50 governments have adopted instruments or national constitutions that recognize the environment as fundamental human right (Chenje et al. 1996). In the countries of the Organization for Economic Cooperation and Development (OECD) 31 major national environmental laws were passed from 1971-75 (Ramsar Convention Bureau 2001). After Stockholm conference 110 countries established ministries of environment by 1982, whereas there were only about 10 such ministries before this conference (Clarke and Timberlake 1982).

The environmental issues are so comprehensive, diverse and indispensable that addressing them requires long-term strategies, integrated action and active participation of the people of all the countries and societies. This was reflected in the World Conservation Strategy (WCS), which was launched in 1980 by IUCN. There must be integration of environmental and development objectives and long-term effort, the Strategy underlined, to address environmental problems (UNEP 2002).

The establishment of IPCC has been an epoch-making incident as it has contributed (i) to develop a broad consensus on the science, social impacts and best responses to human-induced global warming; (ii) to develop public understanding of the dangers of global warming; and (iii) to establish organizations to work on climate change in developing countries. One of the most successful examples of international environmental cooperation is the Montreal Protocol to the Vienna Convention on Substances that Deplete the Ozone Layer. Parties to the Montreal Protocol must submit their data on the production, import and export of the ozone-depleting substances (ODS) annually (UNEP 2002).

Agenda 21, though an action programme covering social, economic, and environmental issues, is now the most important and influential non-binding instrument in the environmental field. In most regions of the world it now serves as the blueprint for environmental management. One very significant achievement of Agenda 21 is that though it is a global programme, but it promotes the adoption of many national and regional Agenda 21 programmes for sustainable development. For instance, the member states of the Southern African Development Community (SADC) adopted the SADC policy and Strategy for Environment and Sustainable Development in 1996. The European Union adopted the 5<sup>th</sup> Environmental Action Plan Towards Sustainability (UNEP 2002).



The principle of 'common but differentiated responsibilities', an outcome of the UNFCCC, reflects the reality that most emission of greenhouse gases are from industrialized countries and guides the adoption of a regulatory structure. Later on, the Kyoto Protocol set actual targets of emission reductions. It was opened for signature in 1997 and 84 parties had signed and 46 parties ratified the Protocol till 2001 (UNEP 2002).

The Convention on Biological Diversity (CBD), noted for its comprehensive ecosystem approaches to biodiversity protection, has gained widespread acceptance as 182 governments had ratified the agreement by December 2001. The Cartagena Protocol on Biosafety, a supplementary agreement to CBD, was adopted in January 2001 to address the potential risk created by cross-border trade and accidental releases of living genetically modified organisms. Enactment of a law, seeking to regulate genetic resources within the Andean Pact nations of Bolivia, Colombia, Ecuador, Peru and Venezuela, was influenced by the CBD. Another important convention, namely the Convention to Combat Desertification (CCD), makes it obligatory for the member states to develop national action programme to prevent desertification and create awareness among the people about the bad consequences of desertification (UNEP 2002).

The Commission on Sustainable Development (CSD), a direct outcome of the Earth Summit, was established in 1992 to oversee and help the international community achieve sustainable development. Though its formation was a major step, but the Commission has been criticized as it failed to respond sufficiently to the problems of institutional capacity, and high-level government ministers became either indifferent or antagonistic to it (RAMSAR Convention Bureau, 2001). The task of integrating economic, social and environmental policies, an inevitable pre-condition of sustainable development as stated by the Brundtland Commission, is difficult and continues to challenge institutions at all levels (RAMSAR Convention Bureau 2001).

The global environmental initiatives under the auspices of the UN encourage private sector stakeholders to improve their environmental performance. Accordingly, the World Business Council for Sustainable Development (WBCSD) was established in 1995 which has contributed enormously to encourage the industries to discover ways to increase profit by reducing waste of both resources and energy and by reducing emissions. Many of the members of WBCSD now have remarkable savings for the environment (RI 1998). The ISO 14000, a new voluntary standard for environmental management systems in industry, was created in 1996 by the International Organization for Standardization. The transnational corporations had greatly improved their environmental image by the end of 1990s (Kuhndt and Lugt 2000). The Global Reporting Initiative (GRI) was established to create a common framework for voluntary reporting of the environmental, economic and social performance of an organization. The aim of GRI is to raise the credibility and consistency of



enterprise-level sustainable development reporting to the same level as financial reporting (UNEP 2002).

For the "fundamental ethical principles for a sustainable way of life", civil society involving hundreds of groups and thousands of individuals have been busy to adopt an Earth Charter. Though it was originally meant to have been adopted at the Earth Summit, but the Earth Council and Green Cross International refined the Charter through a process. Civil society is not only busy with disseminating the message of the Charter, it also organized massive demonstrations in different part of the globe against the perceived threat of globalization and also against the environmental pollution (UNEP 2002).

The Global Compact, an initiative to build synergy between private sector and UNEP, ILO and the UN Office of the High Commissioner for Human Rights, was established to address protection of human rights, sound labour laws and environmental responsibility. The Millennium Ecosystem Assessment (MA) was launched on World Environment Day 2001 to examine the world's grasslands, forests, rivers and lakes, farmlands, and oceans, which are essential to support life. The governments around the globe have highly recognized the MA as they consider it as an instrument to meet the assessment needs of three international environmental treaties - the UN Convention on Biological Diversity, the Ramsar Convention on Wetlands and the UN Convention to Combat Desertification.

#### **5. CRITICALLY LOOKING AT THE JUST INTERNATIONAL ENVIRONMENTAL ORDER**

A just international order has become inevitable to fight environmental challenges. The formidable threat created to the environment is now not a myth, but a hard fact touches the affairs of everyday life. Combating environmental challenges and preservation of nature require the global, regional and national arrangements of individual countries, which though remain in the elementary stage, but have been developing systematically because of the growing consciousness of people all over the globe about nature.

The IPCC has been credited for their research and effort to spread out the knowledge about man-made climate change and the measures to address environmental issues, which pose challenges to the traditional international legal order. Birnie and Boyle mentioned that international environmental law is at an early stage of development and has been evolving at a time when the heterogeneity of the international community has rapidly intensified, economic problems are increasing and the developmental needs of poorer countries have become urgent (Birnie and Boyle 1992: 8). Philippe Sands QC mentioned that environmental issues pose challenges to the international legal order in three ways. First, environmental issues pose challenges for the legislative, administrative and adjudicative functions of international law. The legislative functions require the creation of legal principles and binding rules and the administrative functions require those to be applied by the state and non-state actors for conservation of the environment. Adjudicative functions aim to provide



fora for settling environmental disputes. Secondly, there is discordance between existing international legal order and global environmental order, which consists of a biosphere of interdependent ecosystem, as it cannot comfortably coexist with the artificial territorial boundaries of nations. Thirdly, all the state and non-state actors will have to play very significant role for fighting threats posed to the environment (Sands 2003: 11-2).

The international legal order has to address all the environmental challenges sufficiently in order to establish a just world, which is *sine qua non* for the development and existence of the least developed and developing countries. Though the developed countries are largely responsible for environment pollution, but the poor and least developed countries will endure irreversible loss if proper measures are not taken for conservation of the environment and for ensuring sustainable development. In the sequel of global warming, the exposure of extreme events like flood, cyclone, drought, sea-level rise, vector-borne diseases are appearing recurrently in least developed countries. Bangladesh, for example, is projected to lose 17.5 percent of its land if sea level rises about 40 inches (1m).

Though the Brundtland Commission assumed a common future for all the countries, but there is clear difference between the developed and developing country perspective to fight environmental challenges, which division emerged in the Earth Summit. Whereas the developed countries preferred further environmental regulation, developing states accord priority to development. The developing countries clearly conveyed that they were not ready to accept further environmental controls, without such financial assistance and transfer of technology as was necessary to offset the economic restrictions otherwise involved.

Just international environmental order presupposes an effective international legal system which can adequately address all the environmental challenges. We have discussed how green house effect, global warming, depletion of ozone layer, sea level rise, destruction of bio-diversity have created threat to the environment and existence of living species. We require short and long-term measures in national and international level to fight environmental challenges. Thus, a just international environmental order presupposes: (1) international environmental principles, binding laws, regulations and treaties to address the environmental challenges on the basis of common but differentiated responsibility; (2) effective monitoring authority to oversee whether the countries, both developed and developing, are complying with their commitment to reduce the different types of pollutants by their agreed level; and (3) efficacious international forums to resolve the bilateral and multilateral environmental disputes amicably and through adjudicative means if initiatives of friendly settlement fail.

Just international environmental order, as has already been mentioned, is *sine qua non* for fighting ever increasing environmental dangers. The world community has agreed to develop international environmental order, which already got significant pace as the world community understood that keeping the equilibrium



of nature requires co-operation of developed and developing nations, binding laws, international fora and instruments to implement environmental obligations and to resolve disputes. But we consider there are some difficulties in establishing a just international environmental order, those are: (1) Lack of consensus between the developed and developing nations to combat environmental challenges; (2) The rate of climate change is faster than our ability to assess it on the one hand and sustainable development remains unfulfilled due to insufficient institutional arrangements on the other; (3) There is gap between donor promises and their actual contribution to the Global Environment Facility (GEF). Developing nations became anxious about the gap between donor promise and their actual contribution to the GEF as they committed to meet an ODA (official development assistance) target of 0.7 per cent annually, but ODA in 1995 stood 0.29 per cent, its lowest level since 1973 (GEF 1997); (4) Many of the targets of the Agenda 21 remained unmet. Rio+5, a review summit convened five years later of the UNCED, expressed its concern about the slow implementation of Agenda 21; and (5) There has been gap between theory and practice as the international community was failing to provide future generations the freedom to sustain their lives on this planet.

The problems mentioned above have been creating difficulties, but that does not undermine the ongoing process of building the edifice of a just international environmental order. The problems, indicating some potential flaws, in no way overshadow the evolving construction of the international environmental order, which has already started operation through some binding international principles, and laws, treaty obligations, monitoring systems, national laws, policy and programmes and various international organizations.

## 6. CONCLUSIONS

The existence of human being is inextricably related to a healthy environment, which "encompasses both the features and the products of the natural world and those of human civilizations" (Sands, 2003: 15). The balance of ecology is important for sustenance of this planet. Ecology is a "branch of biology which deals with the relations of living organisms to their surroundings, their habits and modes of life" (Compact Oxford English Dictionary 1991: 523). The flora and fauna, needless to say, remain functional through a symbiotic process. It is now widely recognized that the planet faces a diverse and growing range of environmental challenges. The environmental issues, namely, greenhouse effect, acid rain, ozone depletion, deforestation, loss of biodiversity, climate change, pollution of oceans, global warming, sea level rise, have created common challenges for the whole of humankind. National and international integrated and long-term policies, laws, regulatory and monitoring mechanism are required to combat environmental challenges. There is no alternative than establishing a just international environmental order if we want to reduce and eliminate greenhouse gases and other pollutants and elevate environmental standard. From UN Conference on Human Environment in 1972 to UN Climate Change Conference



in Doha 2012, many international conventions, treaties, and protocols were adopted, some regulatory and monitoring mechanism were established like Montreal and Kyoto Protocol, some organization like UNEP was established, and some action program like Agenda 21 was adopted. Though utmost environmental consciousness of the international community imbued them to develop a vast body of international environmental law within 36 years time, but still many scholar consider it as 'soft law,' not sufficiently able to address the environmental issues. For example, Agenda 21 is worth mentioning. It is now the most influential non-binding instrument in the environmental field, serving as the sketch for the global environmental management. One can understand the reality from the fact that Kyoto Protocol (1997) was the first binding international agreement on the reduction of certain greenhouse gases. Addressing the diverse and all expanding environmental challenges requires co-operation of all the nations and communities. Global environmental justice, as envisaged in the Brundtland Report, requires that the global poverty and developmental needs of developing countries should be addressed sufficiently. A just international environmental order could only be established if a balance has been made between the developmental needs of the nations and the healthy continuation of environment. Environmental principles and rules, though still soft in their nature, could play a vital role in keeping the balance. The growing consciousness of the international community also helps in establishing a satisfactory international environmental order. A just environmental regime needs to provide legislative, administrative and adjudicative tools to address the environmental challenges sufficiently, to keep a balance between developed and developing countries stance on the basis of common but differentiated principle and to address the global poverty and developmental needs of developing nations.

#### REFERENCES

- Bennett, M. 1995. The Gulf War, Database for Use in schools  
<http://www.soton.ac.uk/~engenvir//environment/water/oil.gulf.war.html> [Geo-1-002], accessed 10 December 2014.
- Birnie, Patricia W. and Boyle, Alan E. 1994. *International Law and the Environment*. New York: Oxford University Press Inc.
- Chenje, M., Mohamed-Katerere, J. and Ncube, W. 1996. *Environmental Rights and Fairness in Zimbabwe's Environmental Legislation*. Harare: Ministry of Environment and Tourism, Government of Zimbabwe.
- Clarke, R. and Timberlake, L. 1982. *Stockholm Plus Ten—Promises, Promises? The Decade Since the 1972 UN Environment Conference*. London: Earthscan.
- Farman, J. C., Gardiner, B. G., and Shanklin, J. D. 1985. 'Large losses of total ozone in Anterctica reveal seasonal ClOx/NOx interaction'. *Nature*, 315, 207-10.



- IPCC. 2001. *Climate Change 2001: The Scientific Basis*. Contribution to Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge & New York: Cambridge University Press.
- Kuhndt, M. and C.T. Van der Lugt. 2000. *The Efficient Entrepreneur Calendar – An Innovative Tool to Improve Environmental Performance in Small and Medium-Sized Enterprises Worldwide*. Umweltwirtschaftforum, Berlin: Springer Verlag.
- Long, Bill L. 2000. *International Environmental Issues and the OECD 1950-2000: An Historical Perspective*. Paris: Organization for Economic Cooperation and Development.
- Omat, A Lopez. 1996. Strategies for sustainability Latin America. London. Earthscan in association with IUCN. Available at <http://www.iucn.org/themes/ssp/strategies.pdf> [Geo-1-017], accessed 15 July 2013.
- Sands, Philippe. 2003. *Principles of International Environmental Law*. Cambridge: Cambridge University Press.
- UNEP. 2002. 'Integrating Environmenta and Development: 1972-2002'. Chapter 1. A report by Munich Re, a member of UNEP's financial services initiative. Available at [www.unep.org/GEO/geo3?pdfs/chapter1.pdf](http://www.unep.org/GEO/geo3?pdfs/chapter1.pdf), accessed 15 July 2013.
- World Resources Institute (WRI). 1992. *World Resources 1992-93: Guide to Global Environment*. Washington: World Resources Institute in collaboration with the United Nations Environment Programme and the United Nations Development Programme.
- UNEP. 1992. *Report of the Fourth Meeting of the Parties to the Montreal Protocol*. UNEP/OzL.pro.4/15, accessed 10 December 2014.
- GESAMP. 1990. GESAMP Reports and Studies No. 39. London: GESAMP.
- UNCHS. 1996. *An Urbanizing World: Global Report on Human Settlements - 1996*. Nairobi: United Nations Commission on Human Settlements.
- The Environmental Impacts of War. 1996. Island Press. Available at <http://www.islandpress.org/ecocompass/war/war.html> [Geo-1-014], accessed 15 January 2015.
- IFRC. 2000. *World Disaster Report 2000*. Geneva, International Federation of Red Cross and Red Crescent Societies. <http://www.ifrc.org/publicat/wdr2001/chapter1.asp> [Geo-1-012], accessed 10 December 2014.
- UNFCCC. 2008. 13<sup>th</sup> Conference of the Parties. [http://unfccc.int/meetings/cop\\_13/items/4049.php](http://unfccc.int/meetings/cop_13/items/4049.php), accessed 10 December 2014.
- Rabobank International. 1998. *Sustainability: Choices and Challenges for Future Development*. Leiden: The Netherlands.
- Global Environment Facility. 1997. *The Global Environment Facility: A Self Assessment*. Available at <http://www.ecouncil.ac.cr/rio/focus/report/english/gef.htm> [Geo-1-008], accessed 12 January 2015.