

OVERVIEW OF INTERNATIONAL CONTROL REGIME OF GLOBAL WARMING ☺

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It is widely recognized that the planet faces serious environmental challenges that can only be addressed through international co-operation.¹ Environmental issues are contributing to the emergence of international environmental law with ecological interdependence recognition and those issues can frequently only be addressed by international law and regulation. The growth of international environmental issues is evidenced by the large body of principles and rules of international environmental law that apply bilaterally, regionally and globally, and reflects international interdependence in a ‘globalising’ world. Progress in developing international legal control of activities has been gradual and piecemeal, and frequently reactive to particular incidents or the availability of new scientific evidence such as the Chernobyl accident or the discovery of the hole in the ozone layer.² The goal of international environmental law, broadly stated, is protection of the environment. Many multilateral environmental agreements have two objectives. They focus both on conservation and protection of the environment, and also on a second objective related to “sustainable use” or “sustained economic growth”. This section will focus on the first “environmental preservation, conservation and protection” objectives of these treaties, as well as the principles

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1.Sands Philippe, et. al (2012), *Principles of International Environmental Law*, UK: Cambridge University Press, p. 3.

² Ibid, p.4

and regimes that surround them. Together, these form the existing body of international law for the protection of the environment.³

One of the first recorded international legal processes relating to the conservation of the environment was the Pacific Fur Seal Arbitration of 1893⁴, when a dispute arose between the United States and the United Kingdom regarding the right of the United Kingdom to hunt migratory fur seals on the high seas. The tribunal adopted regulations for the protection and preservation of fur seals, effectively establishing a 60 mile radius safe haven for the seals.⁵

Another classic example to prove the point that pollution in one country will affect the people in the other country is the *Trail Smelter case* 1941⁶. It acknowledged the transboundary consequences of air pollution as sulphur dioxide fumes from the Canadian smelter emitted and damaged the agricultural and timberland in the State of Washington. The Tribunal resolved the dispute by setting a strict limit on the permissible output of sulphur dioxide and held that under the principles of international law, no State has the right to use or permit the use of its territory in such a manner as to cause injury in or to the territory of another or the properties of persons therein, when the case is of serious consequences and the injury is established by clear and convincing evidence.⁷ The International concern for environmental protection is more than a century old. The earliest International treaty relating to conservation of natural resources was the 1987 Treaty between France and UK on fisheries. Thereafter, in 1902 a Convention on Protection of Birds useful for agriculture was entered into. Since then about 174 International

³ Marie-clarie, Cordonier Segger and Ashfag Khalfan (2004), *Sustainable Development Law Principles, Practices and Prospects*, Oxford: Oxford University Press, pp.78, 79.

⁴ Stone, Christopher D(1990), '*The Global Warming Crisis, If There is One, and the law*', American University International Law Review 5: 497- 511.

⁵ Ibid.

⁶ United Nations Reports of International Arbitral Awards Vol. III, p. 1905

⁷ U.S. v. Canada [3 R. Int'L Arb. Awards 1938 (1941)]

Conventions have been made to deal with almost all aspects of environment.⁸ But, here few major and important International instruments (Conventions/Declarations) have been taken up for discussion.

1.1 United Nations Environmental Machinery

1.1.1 United Nations⁹

The UN, its specialized agencies, and subsidiary bodies, organs and programmes are the focal point for international law and institutions in the field of the environment. The UN Charter¹⁰ does not expressly provide the UN with competence over environmental matters. The relevant purpose of the UN include the maintenance of international peace and security, the adoption of measures to strengthen universal peace, and the achievement of co-operation in solving international economic, social, cultural or humanitarian problems.¹¹ Since the late 1960s, however, the practice of the organization through its principal organs, in particular the General Assembly and the Economic and Social Council (ECOSOC), has been to interpret and apply these broad purposes as including the protection of the environment and the promotion of sustainable development. The UN is the principal forum for global environmental law-making and has played a central role in the development of international environmental law, its universal character making it the only 'appropriate forum for concerted political action on global environmental problems'. Apart from the Secretariat, the UN has five principal organs: the General Assembly, the Security Council, ECOSOC, the Trusteeship

⁸ ShanthaKumar. S(2007), *Introduction to Environmental Law*, New Delhi: Wadhwa and Company, p.391.

⁹ www.un.org

¹⁰ Originated in the year 1945. And see www.un.org/en/documents/charter/intro.shtml

¹¹ Article 1(1), (2) and (3), Charter of the United Nations.

Council and the International Court of Justice. Each organ has, to differing degrees, addressed international environmental issues.¹²

1.1.2 United Nation General Assembly

The General Assembly is the main deliberative, policymaking and representative organ of the United Nations. Comprising all 193 Members of the United Nations, it provides a unique forum for multilateral discussion of the full spectrum of international issues covered by the Charter.¹³ The Assembly meets in regular session intensively from September to December each year, and thereafter as required. Decisions on important questions, such as those on peace and security, admission of new members and budgetary matters, require a two-thirds majority. Decisions on other questions are by simple majority. The GA has established a number of Councils, Working Groups, Boards, etc. for the performance of its functions. The subsidiary organs of the General Assembly are divided into categories: Boards, Commissions, Committees, Councils and Panels, and Working Groups and others.¹⁴ After discussing the items on the agenda, seeking where possible to harmonize the various approaches of States, the subsidiary organs present their recommendations, usually in the form of draft resolutions and decisions, to a plenary meeting of the Assembly for its consideration.¹⁵

1.1.3 Economic Council and Social Council (ECOSOC)

The world's economic, social and environmental challenges are ECOSOC's concern. A founding UN Charter body established in 23, January 1946, the Council is the place where such issues are discussed and debated, and policy

¹² Sands, note 1, p. 57

¹³ www.un.org/en/ga

¹⁴ www.un.org/en/ga/about/index/shtml

¹⁵ www.un.org/en/ga/about/subsidiary/

recommendations issued. As such, ECOSOC has broad responsibility for some 70% of the human and financial resources of the entire UN system, including 14 specialized agencies. The ECOSOC has established subsidiary bodies relevant to the environment.¹⁶

1.1.4 World Meteorological Organization (WMO)

It was established in 1947 and is based in Geneva. It operates the World Weather Watch Programme, the World Climate Programme and the Atmospheric Research and Environment Programme. The World Climate Programme supports the Global Climate Observing System (GCOS), which is sponsored jointly by the WMO, UNESCO's International Oceanographic Commission, UNEP and the International Council for Science (ICSU).¹⁷

World Bank Group: The World Bank Group is a specialized agency of the United Nations and is a conglomeration of multiple entities¹⁸, including: International Bank for Reconstruction and Development (IBRD), International Development Agency (IDA), International Finance Corporation (IFC), Multilateral Investment Guarantee Agency (MIGA), and Prototype Carbon Fund (PCF).¹⁹ Each World Bank agency specializes in the financing of different aspects of projects based primarily on the type of financing provided. The group is funded primarily through borrowing on the international capital markets and is one of the largest sources of financing for energy sector projects in developing countries. The purpose of the PCF is to help finance and monitor programmes designed to reduce GHG emissions and generate emissions reduction credits, which can be registered

¹⁶ Sands, note1, p.67

¹⁷ Sands, note. 1, p.76.

¹⁸ World Bank, About us: Members, <http://go.worldbank.org/Y33OQYNE90>.

¹⁹ World Bank, Prototype Carbon Fund, <http://wbcarbonfinance.org/Router.cfm?Page=PCF>.

pursuant to Article 12 of Kyoto.²⁰ It should be noted that the World Bank, International Monetary Fund and World Trade Organization are central players in international environmental law.

1.1.5 International Union for Conservation of Nature (IUCN)

The World Conservation Union began in 1948 as the IUCN. It is a hybrid organization with membership of states, government agencies, NGOs and individual scientists. Its role is as a scientific (and legal) advisory institution. It serves a variety of functions in the process of international conservation of species and ecosystems. The IUCN Commission on Environmental Law is there main actor on behalf of the organization. It played a central role in the drafting of the Ramsar Convention²¹, the World Heritage Convention²², Convention on International Trade in Endangered Species.²³, part XII of the United Nations Convention on the Law of the Sea, the Convention on Migratory Species²⁴, and the Convention on Biological Diversity²⁵. It has official roles with respect to international conservation agreements such as cooperation with the World Heritage Committee (under WHO), World Wildlife Fund.

1.1.6 United Nation Development Programme²⁶

The UN General Assembly established the UN Development Programme (UNDP) in 1965. It is the principal channel for multilateral technical and investment assistance to developing countries. It is active in all economic and social sectors

²⁰ Ferry, Steven (2010), The Failure of International Global Warming Regulation to Promote needed renewable energy” B.C. Environmental Affair law Review, 37: 106 -117.

²¹ 1971, regarding wetland held Iran.

²² World Heritage Convention (UNESCO,1972 see <http://whc.unesco.org/en/convention>

²³ Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1973

²⁴ Convention on Migratory Species,1979.

²⁵ Convention on Biological Diversity, 1992.

²⁶Sands, note 1, p.62.

and has addressed environmental issues since the early 1970s. UNDP receives voluntary contributions from participating states, as well as donor co-financing, and additional finance from the business sector, foundations and NGOs. The role of UNDP in environmental programmes has been strengthened by its participation in the management of important programmes and institutions such as the UN-REDD (Reducing Emissions from Deforestation and forest Degradation) programme²⁷.

1.1.7 United Nation Environment Programme (UNEP)

It is established in 1973 with the participation of 58 nations and governed by a Governing Council and Global Ministerial Environment Forum.²⁸ It was assigned with the task of providing essential information regarding world environmental trends, new environmental problems and response to the old and existing ones. It is responsible for the development of a number of International instruments like the 1985 Vienna Convention for the protection of the Ozone Layer and the 1987 Montreal Protocol and the 1992 Convention on Biodiversity.²⁹ It has six divisions and six regional offices. Six divisions are environment and early warning, environmental law and conventions, policy implementation, technology, industry and economics, regional cooperation and representation, communication and public information.³⁰ UNEP along with the World Meteorological Organization established the Intergovernmental Panel on Climate Change (IPCC) in 1988. UNEP is also implementing agency for the Global Environment Facility (GEF). UNEP has sponsored the development of solar programs, with attractive return rates, to buffer the initial deployment costs and entice consumers to consider

²⁷ The Programme was created in response to the UNFCCC decision on REDD at COP 13 and the Bali Action Plan,

²⁸ Myneni, S.R(2010), *Environmental Law*, Hyderabad: Asia Law House, p.755.

²⁹ Shanthakumar, note 8, 396

³⁰ Dube Indrajit(2007), *Environmental Jurisprudence Polluter's Liability*, New Delhi :Lexis Nexis, Butterworths, , p.52.

and purchase solar PV systems, one of such is the solar loan programme sponsored.³¹

UNEP Draft Principles

One of the first acts to be adopted by UNEP in the field of international law led to the 1978 draft “Principles of Conduct in the Field of the Environment for the Guidance of States in the Conservation and Harmonious Utilization of Natural Resources Shared by two or More States’. The draft Principles resulted from the efforts of an Intergovernmental Working Group established by the UNEP Governing Council in 1976. The Draft Principles comprise fifteen Principles to govern the use ‘shared natural resources’, Principles 1 and 2 recognize the duty of states to cooperate to control, prevent, reduce and eliminate adverse environmental effects, and requires them, to that end, to endeavour to conclude bilateral or multilateral agreements to secure to specific regulation of their conduct. Principle 21 of the Stockholm Declaration, broadly followed by Principles 3 and 4, introduces a requirement that states ‘make environmental assessments’ before engaging in certain activities. Principles 5 and 6 relate to information exchange, consultation and notification, which are elements of the principle of good faith and good neighbourliness elaborated by Principle 7. and Principle 8 on scientific studies and assessments principle 9 on emergency action and 10 on the use of ‘services’ of international organizations. The settlement of disputes and responsibility and liability are addressed by Principles 11, 12, and 13, 14 elaborate upon the objectives of non-discrimination and the rights of persons in other jurisdiction who may be adversely affected by environmental damage to the equal right of access to

³¹ Myneni, note 28, pp.75, 762, 763 for milestones of UNEP from 1972-2005

administrative and judicial proceedings. Principle 15 provides that it should be interpreted and applied 'to enhance and not to affect adversely development and the interests of all countries and in particular the developing countries'.³²

1.1.8 World Conservation Strategy

It was prepared by IUCN, UNEP, WWF, UNESCO and FAO in 1980. It gave currency to the term 'sustainable development', and led to the preparation of national and sub-national conservation strategies in most states. It emphasized three key objective; maintaining ecological processes, preserving genetic diversity and sustainable use of species and ecosystems and identified obstacles to the fulfillment of these objectives.³³

1.1.9 World Charter for Nature

The UN Assembly adopted the World Charter for nature, which set forth 'principles of conservation by which all human conduct affecting nature is to be guided and judged' in 1982. The Charter is divided into three sections, is a non binding instrument drafted in general language and it emphasizes the protection of nature as an end in itself. It is an important symbolic expression of an intent among nations to achieve a more harmonious and sustainable relationship between humanity and the rest of the biosphere-between mankind and earth. As a standard of ethical conduct, however, many of its provisions are now reflected in treaties.³⁴

³² Sands, note 1, p37

³³ Ibid.

³⁴ Ibid, p.38

1.1.10 World Commission on Environment and Development (WCED)

It was established in 1983 by the UN General Assembly its report called (WCED Our Common Future) Brundtland Report was published in 1987 and was pivotal in changing the direction of international environmental law.³⁵ It was established as an independent body and was an important catalyst for United Nations Conference on Environment and Development (UNCED) and the five instruments there adopted. The Brundtland Report signaled changes in the way at the world, endorsing an expanded role for sustainable development and UN Programme on sustainable development, and identifying key legal and institutional issues.³⁶

It is to be noted that the United Nations Environment Programme has facilitated the negotiation of many international environmental agreements, acts the secretariat for some, and plays a role in coordinating international scientific research.

1.1.11 Intergovernmental Panel on Climate Change (IPCC)

It was established in 1988 and given the task of assessing current scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human induced climate change, as well as the potential impacts and options for adaptation and mitigation. A Principal activity of the IPCC is to provide an assessment of the existing knowledge on climate change at regular intervals. The first report was published in 1990 and was used by the Intergovernmental Negotiating Committee as the scientific basis for the United Nations Framework Convention on Climate Change (UNFCCC). The second report in 1995 included socio-economic aspects of climate change and was

³⁵ Bell Stuart and McGillivray Donald (2008), *Environmental Law*, New York: Oxford University Press, p. 146.

³⁶ Sands, note 1, p.39.

influential in the negotiations on the Kyoto Protocol.³⁷ The most recent fourth report built on previous work and declared with greater confidence that “the warming of the climate system is unequivocal”.³⁸

1.1.12 United Nation Commission on Sustainable Development (UNCSD)

It was established in 1992 by the General Assembly and the Economic and Social Council of the UN (ECOSOC) to monitor and report on implementation of the Earth Summit agreements and it is a most extensive document of the Rio Summit. The requirement and the annual reviews conducted by the Commission have maintained pressure on national governments to make some progress³⁹.

1.2 Stockholm Declaration of the United Nations Conference on Human Environment, 1972

The Conference was held in Stockholm on 5-16 June 1972 and attended by 114 states and a large number of international institutions and non governmental observers. Although no treaty was signed⁴⁰, the conference adopted three nonbinding instruments; a resolution on institutional and financial arrangements, a Declaration containing twenty-six principles, and an Action Plan containing 109 Recommendations.⁴¹ The Stockholm Declaration is the foundation of modern international environmental law and its principles are largely aspirational, rather than mandatory. The key principles are

³⁷ Watchman ,Paul Q(2008), *Climate Change*, London: Globe Law and Business Publishing, p. 25

³⁸ IPCC, Fourth Assessment Report, Climate Change 2007: Synthesis Report; Summary for policy-makers , November 2007, p.2

³⁹ It originated from chapter 38 of the Agenda 21 and set up on pursuant to article 68 of the U.N. Charter.

⁴⁰ Bell note 35, p. 146.

⁴¹ Sands , note 1,p. 30, and see Report of the UN Conference on the Human Environment

'the sovereign right of States to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction'⁴² and

' a requirement (although nor a duty) for international cooperation to effectively control, prevent, reduce and eliminate adverse environmental effects resulting from activities conducted in all spheres, in such a way that due account is taken of the sovereignty and interests of all states'⁴³

Perhaps more importantly, the Stockholm Conference marked the beginning of a rapid increase in the number of international environmental agreements concluded. Over 60% of all international environmental agreements post-date Stockholm.⁴⁴

Nairobi Declaration

In the tenth anniversary of the Stockholm Conference, the world community, assembled in Nairobi, Kenya from 10th to 18th May 1982.⁴⁵ It was to review the measures taken for the implementation of the recommendations of the conference and the action plan adopted in the Stockholm Conference. The states observed that the Stockholm Conference has requested the governments of the states and the people to build up consciousness to preserve the human environment. They realized that significant improvements had been achieved in the years and different countries has amended their constitutions and adopted environmental policies, in line with the Stockholm recommendations. Remarkable achievements had been made in the field of environmental science, education and training

⁴² Principle 21, Stockholm Declaration, 1972.

⁴³ Principle 24, Stockholm Declaration, 1972.

⁴⁴ Bell, note 35, p. 146.

⁴⁵ www.unep.or.kr/...

towards the conservation of it. Many governmental and nongovernmental organizations had been established in different levels to implement the national policies for conservation and restoration of the human environment. However, there had been partial achievements to bring environmental awareness in these years, yet, the problems of soil pollution, water pollution, deforestation and increasing trends of desertification had reached alarming proportions. The changing trends in atmosphere, such as depletion in ozone layer, increase in carbon dioxide, acid rain, pollution in sea and ground water, unscientific disposal of hazardous substance, had constituted a further threat to the human environment. Emphasis was placed upon formulation of policies regarding sustainable socio-economic development and human environment. States should make efforts to adopt sound environmental management policies and effective steps to strengthen the country's ecosystem with paying attention towards technical innovation, promoting resources, eradication of poverty, recycling the waste and conservation of environment. The Nairobi Declaration stressed upon the need for regularization of activities of the enterprise, including the multinationals which had become a major threat to the fragile ecology of the country. Further it was stated that environmental deficiency had generated due to under-development, inequitable distribution of technical and economic resources among the states.⁴⁶

As a result of Nairobi Declaration, UN Convention on the Law of Sea, 1982(UNCLOS) was conducted for the protection and preservation of marine environment.⁴⁷ And also the System Wide Medium Term Environment Programme(SWMTEP) was evolved in 1982 by the Nairobi Declaration and this programmed was undertaken by the UNEP between 1984-89.⁴⁸

⁴⁶ Dube, note 30, p.52.

⁴⁷ Myneni, note28, p.796

⁴⁸ Ibid.

1.3 The Vienna Convention for the Protection of Ozone Layer, 1985

In 1985, the British Antarctic Survey discovered that the stratospheric ozone layer over Antarctica had thinned. This discovery confirmed the link between emissions of certain substances such as CFCs and damage to the ozone layer, and brought home to politicians and members of the public the startling fact that humans are capable of changing the earth's ecosystem in fundamental and potentially permanent ways.⁴⁹The Vienna convention held on 22nd March 1985 and entered into force in 1988.⁵⁰It is to create consensus and draw the future plan regarding the protection of ozone layer and in pursuance of the United Nations conference o the Human Environment, particularly principle 21.⁵¹ 196 nations ratified the convention.⁵² The Convention included a resolution to convene a series of international workshops on both short and long term strategies to control equitably global production, emissions and uses of CFC's taking into account the particular situation of developing countries as well as updated scientific and economic research.

1.4 Montreal Protocol on substances that deplete ozone layer 1987 as amended in 1990

It is a protocol to the Vienna Convention for the Protection of Ozone Layer, 1985. It is an international treaty designed to protect the ozone layer by phasing out the production of numerous substances like CFCs at a uniform rate irrespective of the development status of a country,⁵³ believed to be responsible for ozone depletion.

⁴⁹ Richardson J Benjamin, and Wood Stephen (2006), *Environmental Law for Sustainability: A Reader*, Hart Publishing, Oregon: Oxford and Portland, p. 343.

⁵⁰ [http://en.wikipedia.org/...Vienna convention for the protection of ozone layer...](http://en.wikipedia.org/...Vienna%20convention%20for%20the%20protection%20of%20ozone%20layer...)

⁵¹ Dube, note 30,p.52.

⁵² Ibid, p. 52

⁵³ Jaswal Paramajit, and Jaswal Nishtha(2006), *Environmental Law, Environmental Protection, Sustainable Development and the Law*, Delhi: Pioneer Publications, p. 90.

The treaty was opened for signature on September 16, 1987 and entered into force on January 1, 1989.⁵⁴ The pact was signed by 48 nations, mostly developed countries. India and other developing nations like Malaysia and China refused to sign it because of pragmatic considerations and discriminatory clauses in protocol namely:

- 1) **Per capita consumption of CFCs**- US accounts for 37% of the whole consumption of CFCs, while poorer countries of Asia and Africa only 5%. So, rate of elimination should be faster in developed countries, but the protocol provides for a uniform rate.
- 2) **Patterns of consumption of CFCs**- In India, CFCs mainly used for essential purposes like food processing, vaccines, space research, etc. while in US, a lot of CFCs used for luxury consumption e.g.. car air-conditioning. However CFCs removed from air conditioning and refrigerators replacing with new technology through 100% funding by the government of India.⁵⁵
- 3) **Massive switch over costs**- very high costs needed for developing CFCs substitutes, but in protocol a miniscule amount specified for developing nations.⁵⁶

1.5 The United Nations Conference on Environment and Development (UNCED), 1992(Earth Summit)

After the Stockholm Conference, the UN convened a new conference intended to build upon the principles it adopted. The UN Conference on Environment and

⁵⁴ http://en.wikipedia.org/wiki/montreal_Protocol...

⁵⁵ See annexure interview 1, Pattusamy, Scientist, CPCB, Zonal office, Bangalore, interviewed on 25th October 2012.

⁵⁶ http://en.wikipedia.org/...Vienna_convention_for_the_protection_of_ozone_layer...

Development⁵⁷ considered as an important milestone in establishing important linkages between environment and development and in defining the concept of “sustainable development”. It set out general principles for sustainable development, and the Climate Change Treaty, the Convention on Biodiversity and the framework of principles on conservation and use of forests and established important steps that needed to be taken to guarantee an environmentally stable and sustainable planet.⁵⁸ It has the following three important objects:

- (i) To establish a new and equitable global partnership through the creation of new levels of cooperation among states, key sectors of societies and people;
- (ii) To work towards international agreements to respect the interest of all and protect the integrity of the global environmental and developmental system; and
- (iii) To recognize the integral and interdependent nature of our earth.⁵⁹

It was the largest international conference in the history of international relations. Maurice Strong, then the UNCED chief, described it as “Parliament of the Planet”.⁶⁰ The Earth Summit, 1992 was inspired by the valuable document Brundtland Report 1987. The Earth Summit forced the people worldwide to think how their lives affect natural environment and resources. It produced five important documents:

1. Rio Declaration on Environment and Development
2. Agenda 21
3. Forest Principles
4. UN Convention on climate change

⁵⁷ Held at Rio de Janeiro capital of Brazil from 3rd to 14th June 1992

⁵⁸ Shanthakumar, note 8, p. 396

⁵⁹ Ibid

⁶⁰ Myneni, note 28, p.807

5. UN convention on Biodiversity⁶¹

1.5.1 Rio Declaration on Environment and Development

It proclaimed 27 principles and known as “Earth Charter”. The following principles are relevant for the purpose

- i. Human beings are entitled to a health and productive life in harmony with nature.⁶²
- ii. States have the sovereign right to exploit their own resources and responsibility to ensure that activities within their jurisdiction do not cause damage to the environment of other states.⁶³
- iii. The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.⁶⁴
- iv. States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the earth’s ecosystem.⁶⁵
- v. State should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies.⁶⁶
- vi. States should cooperate to strengthen endogenous capacity building for sustainable development by improving scientific understanding through exchange of scientific technological knowledge and by enhancing the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies.⁶⁷

⁶¹ Ibid

⁶² Rio Declaration on Environment and Development, 1992, Principle 1.

⁶³ Ibid, Principle 2.

⁶⁴ Ibid, Principle 3.

⁶⁵ Ibid, Principle 7.

⁶⁶ Ibid, Principle 8.

⁶⁷ Ibid, principle9.

- vii. State shall enact effective environmental legislation.⁶⁸
- viii. States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage.⁶⁹
- ix. In order to protect the environment the precautionary approach shall be widely applied by the states. Lack of scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation.⁷⁰
- x. States shall provide prior and timely notification and relevant information to potentially affected states on activities that may have a significant adverse transboundary environmental effect and shall consult with those states at an early stage and in good faith.⁷¹
- xi. States and people shall cooperate in good faith and in a spirit of partnership in the fulfillment of the principles embodied in this declaration.⁷²

1.5.2 Agenda 21

It is an 800 page global action plan on development and environment.⁷³ It is a dynamic programme. It is a voluntary action plan. It is a comprehensive blue-print for local, national, regional and global actions to affect the transition to sustainable development in 21st century. Hence it is called as Agenda 21. Agenda 21 constitutes the most comprehensive and far-reaching programme of action ever approved by the world community.⁷⁴

Furthermore, Agenda 21 is a comprehensive document which includes

⁶⁸ Ibid, principle 11.

⁶⁹ Ibid, principle 13.

⁷⁰ Ibid, principle 15.

⁷¹ Ibid, Principle 19.

⁷² Ibid, Principle, 27.

⁷³ Bell, note 35, p. 147

⁷⁴ According to Maurice Strong, Secretary General of UNCED.

Social and Economic Dimensions: The recommendations for international co-operation to accelerate sustainable development in developing countries and related domestic policies; combating poverty; changing consumption patterns; demographic dynamic and sustainability, protecting and promoting human health; promoting sustainable human settlement development; and integrating environment and development in decision making.⁷⁵

Conservation and Management of Resources for Development: It focused on protecting the atmosphere; integrated approach to the planning and management of land resources; combating deforestation; managing fragile ecosystems; promoting sustainable agriculture and rural development; conservation of biological diversity; environmentally sound management of solid wastes and sewage related issues; and safe and environmentally sound management of radioactive wastes.

Measures of Implementation: It relates to financial resources and mechanisms; transfer of environmentally sound technology, cooperation and capacity building; science for sustainable development; promoting education, public awareness and training; national mechanisms and international cooperation for capacity building; international institutional arrangements; international legal instruments and mechanisms; and information for decision making.⁷⁶

1.6 United Nations framework Convention on Climate Change, 1992

The states which participated in the Rio conference and which were determined to protect the climate system for present and future generation, signed the convention.⁷⁷ The Convention on climate Change sets an overall framework for

⁷⁵ Jaswal, note 53, pp.95, 96.

⁷⁶ Ibid, p.96

⁷⁷ Shanthakumar, note 8, p. 402

intergovernmental efforts to tackle the challenge posed by climate change. It recognizes that the climate system is a shared resource whose stability can be affected by industrial and other emissions of carbon dioxide and other greenhouse gases. Under the Convention, governments gather and share information on greenhouse gas emissions, national policies and best practices' launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; cooperate in preparing for adaption to the impacts of climate change.⁷⁸

The ultimate object of this Convention is to achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. The Convention aims at achieving such a level within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.⁷⁹

To realize the objective of the Convention and to implement its provisions, the contracting States shall be guided by the following principles:

- a. The State parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. The State parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a

⁷⁸ http://unfccc.int/essential_background/convention/items/2627.php.

⁷⁹ Article 2, United Nations Framework Convention on climate Change, 1992.

reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost effective so as to ensure global benefits at the lowest possible cost.

- b. The State parties have a right to sustainable development, and should, promote sustainable development.
- c. The State parties should cooperate to promote a supportive and open international economic system that would lead to sustainable economic growth and development in all States, particularly developing country parties, thus enabling them better to address the problems of climate change.⁸⁰

The State Parties to the Convention have accepted to undertake the certain commitments: to develop, periodically update, publish and make available to the CoP, national inventories of anthropogenic emissions by sources and removals by sink of all greenhouse gases; to formulate, implement, publish and regularly update national and regional programs containing measures to mitigate climate change by addressing anthropogenic emissions by source and removals by sinks of all greenhouse gases, and measures to facilitate adequate adaption to climate change; to promote and cooperate in the development, application and diffusion, including transfer of technologies, practices ad processes that control, reduce or prevent anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol in all relevant sectors including the energy, transport, industry, agriculture, forestry and waste management sectors; to promote sustainable management, and promote and cooperate in the conservation and enhancement of sinks and reservoirs of all greenhouse gases; to cooperate in preparing for adaption to the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas, particularly in Africa, affected by drought

⁸⁰ Article2, Ibid.

and desertification, as well as floods; to take climate change considerations into account, to the extent feasible in their relevant social, economic and environmental policies and actions, and employ appropriate methods like impact assessments, with a view to minimizing adverse effects on the economy, on public health and on the quality of the environment; to promote and cooperate in scientific, technological, technical, socio-economic and other research, systematic observation and development of data archives related to the climate system and intended to further the understanding and to reduce or eliminate the remaining uncertainties regarding the causes, effects, magnitude and timing of climate change and the economic and social consequences of various response strategies; to promote and cooperate in the full, open and prompt exchange of relevant scientific, technological, technical, socio-economic and legal information related to the climate system and climate change, and to the economic and social consequences of various response strategies; and lastly to promote and cooperate in education, training and public awareness related to climate change and encourage the widest participation in this process, including that of NGOs.⁸¹

However, all developed countries shall adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs. Further, to return individually or jointly to their 1990 levels of their anthropogenic emissions of carbon dioxide and other greenhouse gases not controlled by the Montreal protocol. In addition, to provide new and additional financial resources,⁸² and to transfer of technology to meet the freed full incremental costs of implementing measures.⁸³

⁸¹ Article 4, UNFCCC

⁸² Article 12, UNFCCC

⁸³ Article 4(1), Ibid

Amongst the many responsibilities undertaken by states they are to promote and facilitate at the national, regional, sub-regional levels, the development and implementation of educational and public awareness programs on climate change and its effects, public access to information on climate change, public participation.⁸⁴

The UNFCCC provides for the establishment of Subsidiary Body for Scientific and Technological Advice SBSTA to provide the CoP and other subsidiary bodies timely information and advice on scientific and technological matters relating to the Convention. This body should undertake and provide assessments of the state of scientific knowledge relating to climate change and its effects, prepare scientific assessments on the effects of measures taken in the implementation of the Convention, identify innovative, efficient and state of the art technologies and know how and advice on the ways and means of promoting development and /or transferring such technologies.

Further it should provide advice on scientific programs, international cooperation in research and development related to climate change, as well as on ways and means of supporting endogenous capacity-building in developing countries; and respond to scientific, technological and methodological questions that the conference of Parties and its subsidiary bodies may put.

In addition to the above, the UNFCCC also provides for the establishment of (SBI) Subsidiary Body for Implementation⁸⁵ to assist the CoP in the assessment and review of the effective implementation of the Convention. Under the guidance of the Conference of Parties, this body shall:

⁸⁴ Article 6, *ibid.*

⁸⁵ Article 10, *Ibid.*

Consider the information communicated by the State parties⁸⁶ to assess the overall aggregated effect of the steps taken by the Parties in the light of the latest scientific assessments concerning climate change and to assist the CoP in carrying out the reviews, preparation and implementation of its decisions.

Convention on Sustainable Development (CSD): In 1992, pursuant to its mandate in Agenda 21, the General Assembly and ECOSOC established the UN Commission on Sustainable Development. The CSD is assisted by a secretariat based in New York and meets annually in New York. The Commission makes recommendations to ECOSOC and, through it, to the General Assembly. Its objective is to ensure the effective follow of UNCED, enhance international co-operation and rationalize the intergovernmental decision-making capacity for the integration of environment and development issues and to examine the progress of the implementation of Agenda 21 at the national, regional and international levels, fully guided by the principles of the Rio Declaration, all other aspects of the conference, in order to achieve sustainable development.⁸⁷

Another important Convention relevant for our purpose is the **Convention on Biological Diversity (CBD)**, 1992⁸⁸. Those States which were conscious of the intrinsic value of biological diversity and of the ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values of biological diversity and its components and conscious also of the importance of biological diversity for evolution and for maintaining life⁸⁹ sustaining system of the biosphere, signed the CBD. The convention has three main goals i.e. conservation of biological diversity (biodiversity), sustainable use of its

⁸⁶ In accordance with Article 12, Ibid.

⁸⁷ www.un.org/esa/dsd/csd_index.shtml

⁸⁸ It is one of the multilateral treaties entered as part of the Earth Summit.

⁸⁹ Shanthakumar, note 8, p.399

components,⁹⁰ and fair and equitable sharing of benefits arising from genetic resources.

The Convention recognized for the first time in international law that the CBD is “a common concern of humankind” and is an integral part of the development process.

The Convention has the following salient features:

- a. Identification and Monitoring⁹¹: The CBD provides for identification of components of biological diversity important for its conservation and sustainable use and monitoring the components of biological diversity identified.
- b. In-situ⁹² and Ex-situ⁹³ Conservation: The CBD provides for in-situ and ex-situ conservation of components of biological diversity.
- c. Sustainable use of components of Biodiversity⁹⁴: The CBD says that each contracting State shall, as far as possible as appropriate; integrate consideration of the conservation and sustainable use of biological resources into national decision-making; adopt measures relating to the use of biological resources to avoid or minimize adverse impacts on biological diversity; protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements; support local populations to develop and implement remedial action in degraded areas where biological

⁹⁰ it is often seen as the key document regarding sustainable development.

⁹¹ Article 7, CBD, 1992

⁹² Article 8, Ibid. In-situ conservation is on-site conservation or the conservation of genetic resources in natural populations of plant or animal species.

⁹³ Article 9, Ibid. ex-situ conservation means off site conservation and a process of protecting an endangered species of plant or animal outside its natural habitat.

⁹⁴ Article 10, Ibid

diversity has been reduced; encourage cooperation between its governmental authorities and its private sector in developing methods for sustainable use of biological resources.

- d. Research and Training⁹⁵: It requires the contracting states to promote and encourage research which contributes to the conservation and sustainable use of biological diversity and to establish and maintain programs for scientific and technical education and training in measures for the identification, conservation and sustainable use of biological diversity and its components.
- e. Public Education and Awareness⁹⁶: The CBD insists the State parties to promote and encourage understanding of the importance of biodiversity and the measures required for the conservation of bio-diversity, as well as its propagation through media, and the inclusion of thee topics in education programs.
- f. Impact Assessment and Minimizing Adverse Impacts⁹⁷: The CBD states that the contracting states shall 'introduce appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects and, where appropriate, allow for public participation in such procedures''.
- g. Exchange of Information⁹⁸: further the CBD requires the contracting states to exchange information relevant to the conservation and sustainable use of biological diversity, including exchange of results of technical, scientific and socio-economic research.

⁹⁵ Article 12, Ibid

⁹⁶ Article 13, Ibid

⁹⁷ Article 14, Ibid

⁹⁸ Article 17, Ibid

- h. Technical and Scientific Cooperation: ⁹⁹in addition to the above the CBD emphasizes the need for technical and scientific cooperation and requires the contracting states to promote international technical and scientific cooperation in the field of conservation and sustainable use of biological diversity.
- i. Financial Resources: ¹⁰⁰ lastly, the CBD directs the developed countries to provide new and additional resources to enable developing countries to meet the agreed full incremental costs for implementing measures, which fulfill the obligations to this Convention.

It should be noted that the European Union heads of State at the EU summit in Gothenburg in June, 2001 decided that “biodiversity decline should be halted with the aim of reaching this objective by 2010”. One year later, the Convention on Biological Diversity’s 6th CoP decided to adopt a Strategic Plan says “Parties commit themselves to a more effective and coherent implementation of the three objectives of the convention, to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on earth.” Further The World Summit on Sustainable Development held in Johannesburg in 2002 confirmed the 2010 biodiversity target and called for ‘the achievement by 2010 of a significant reduction in the current rate of loss of biological diversity.’ ¹⁰¹

Global Biodiversity Informatics Conference: The conference held at University of Copenhagen, Denmark, from 2-4 July 2012. A landmark conference has agreed key priorities for harnessing the power of information technologies and social networks to understand better the workings of life on Earth, focusing on how

⁹⁹ Article 18, Ibid

¹⁰⁰ Article 20, Ibid

¹⁰¹ http://en.wikipedia.org/wiki/2010_biodiversity_target#progress_at_the_convention_on_biological_diversity.

biodiversity can continue to sustain human lives and livelihoods. To facilitate the objects further the Global Biodiversity Informatics Conference (GBIC), gathering some 100 experts around the world identified critical areas in which greater investment and better coordination could give society much better, innovative tools to monitor and manage biological resources. These tools will be designed to support vital functions such as food security, human health and more sustainable economic development.

The overall aim thus is to build global collaboration on biodiversity observation, uniting many partners and initiatives, capable of detecting and enabling responses to short-term changes and long-term trends in biodiversity and ecosystems. The capabilities discussed by the participants at GBIC, who came from a range of disciplines including biodiversity science, policy and informatics, will now be developed in consultation with the science and policy communities into an outlook document. It will set priorities for biodiversity informatics for the coming decade with a view to establishing an effective and agile system of forecast and rapid response – equivalent to weather forecasting or earthquake detection. Further more, a number of areas relevant to were identified for development.

A number of specific areas were identified for development in the outlook, each to include achievable outcomes over a five to ten year timeline, building on and integrating many existing initiatives and contributing to the overall vision of a global biodiversity intelligence system. They include:

- i. Making best use of the huge potential for the public to become part of a global biodiversity knowledge network as both contributors and beneficiaries, using latest technologies, social networks and local/indigenous knowledge;

- ii. Capturing through all available technologies the complexity of interactions among species – for example predators/prey, parasites/hosts and pollinators – as well as their traits. The technologies will include acoustic monitoring and remote sensing, and will help analyze these interactions to establish their importance in providing ecological services to people; shining a light on hitherto hidden layers of biodiversity, for example using gene sequencing capabilities to understand the millions of kinds of microbes inhabiting the air, oceans, soils and higher organisms throughout the world, and their role in controlling the life support systems of the planet¹⁰².

1.7 Kyoto Protocol on Climate Change, 1997 and Pact on Global Warming (greenhouse conference)

This is another important document that is relevant for the research purpose. In 1995 several nations agreed that voluntary reductions in so called greenhouse gases were not working. The group set a deadline-namely the Kyoto Conference-establish legally binding targets for reducing emissions in carbon dioxide, methane and nitrous oxide. Therefore a conference was held at Kyoto on climate change on December 11, 1992 in Kyoto, Japan to review the progress made in five years from United Nations Conference on Climate Change (UNFCCC) 1992 and to formulate plans and fix strategies and objectives for the future. As many as 159 nations' delegates attended the world climate conference and reached a historic accord calling for mandatory cuts in emission of greenhouse gases by industrialized nations in the next millennium to help save the planet from potentially devastating global warming. It was adopted in the form of a protocol, which requires the industrialized countries as a whole to reduce their average annual emissions of six greenhouse gases like carbon dioxide (CO₂), methane (CH₄), Nitrous Oxide (N₂O),

¹⁰² <http://www.gbic2012.org/>

Hydrofluorocarbons(HFCs), Perfluorocarbons(PFCs), and Sulphur Hexafluoride (SF₆)¹⁰³ by 5.2 percent from 1990 levels between the years 2008 and 2012. However, the Kyoto Protocol came into force from 16th February 2005.¹⁰⁴ Owing to strong opposition from India, China and other developing countries against a paragraph calling for voluntary participation of developing countries in binding targets, it was deleted from the final draft of the protocol. In the light of the adoption of Kyoto Protocol, the U.S.A. has committed itself to cut gas emissions by 7%, the European Union by 8% percent and the host Japan by 6% by 2012 from the base of 1990. The figure is modest but what it conceals is that without Kyoto Protocol, the U.S.A. alone would have increased its green house gas emission by another 34% in the next 15 years. By then China and hopefully, India would have widened their industrial base and stepped up their own emission level.¹⁰⁵

The main objectives of the Kyoto Protocol were: to achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent anthropogenic interference with the climate system within a time frame sufficient to allow ecosystems to adapt naturally to climate change; to ensure that food production is not threatened; and to enable economic development to proceed in a sustainable manner.¹⁰⁶

Significant Provisions of the Kyoto Protocol

By 2005, countries are expected to have made demonstrable progress, though this has not been specifically defined. Countries have been asked to create an effective

¹⁰³ [Unfccc.int/Kyoto_protocol/items/3145.php](http://unfccc.int/Kyoto_protocol/items/3145.php)

¹⁰⁴ http://en.wikipedia.org/wiki/Kyoto_protocol

¹⁰⁵ Ibid.

¹⁰⁶ Jaswal, note 53, p.102.

greenhouse gas accounting system.¹⁰⁷ The Protocol incorporates a banking provision, which provides that if the emissions of the countries mentioned in annexure 1¹⁰⁸ are less than its assigned amount for the first commitment period, then this difference can be used to stay within the assigned amount of that country in subsequent commitment periods.¹⁰⁹ Further, two or more countries can meet their reduction targets jointly, and can set, their own individual targets so long as the entire group under the ‘bubble’ meets their target in aggregate.¹¹⁰ The provision on joint implementation, which allows the industrialized countries to transfer or acquire emission units from other industrialized countries, through projects aimed at reducing emissions from sources, or enhancing removal by sinks.¹¹¹ It emphasizes on Clean Development Mechanism (CDM).¹¹² It allows private and public entities to participate in CDM sponsored activities¹¹³.

With many credits the protocol has many weaknesses. Countries like Russia and Ukraine have low emissions today as compared to their 1990 emission level because of their economic collapse after the demise of Soviet Union. Since they have only agreed to stabilize at 1990 levels, which they are unlikely to reach by 2010, they can easily sell off these emissions called “hot air”. This would allow other countries to increase their emissions to this quantity. Further the protocol aims at controlling the combined equivalent of six greenhouse gases. A few of these are industrial gases, which are already being phased out under the Montreal Protocol. Thus, it provides the scope for emitting more fossil fuel based emissions.

¹⁰⁷ Article 3, Kyoto Protocol, 1997

¹⁰⁸ There are 41 Annex I countries and the European Union is also a member. These countries are classified as industrialized countries and countries in transition: Australia, **Austria, Belarus, Belgium, Bulgaria, Canada,** Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, United States of America.

¹⁰⁹ Articles 3.13, Ibid.

¹¹⁰ Article 4, Ibid.

¹¹¹ Article 6, Ibid.

¹¹² Article 12, Ibid.

¹¹³ Jaswal, note, 53, p. 116

The third is that the Banking provision which allows the industrialized countries to bank emissions for future use creates inequity. For example, if an industrialized country reduces more than its targets for 2010, then it can bank them, even though it already has very high per capita emissions, But India has very low per capita emissions today and hence cannot bank anything for their future use.¹¹⁴

1.8 Johannesburg Declaration on Sustainable Development, 2002

The United Nations organized a ten day World Summit on Sustainable Development (WSSD) in Johannesburg from August 26 to September 4, 2002. The Earth Summit opened with a call for coordinated international action to fight poverty and protect the global environment. The UN Secretary General Kofi Annan urged the delegates to commit to firm action to solve problems identified a decade ago at the Earth Summit, 1992. At the end of the summit a declaration was adopted which has been named as “Johannesburg Declaration on Sustainable Development”.¹¹⁵ Johannesburg. At Johannesburg the representatives reaffirmed their commitment to sustainable development again adopted Rio principles confirming that significant progress has been made towards achieving a global consensus and partnership among all the people of our planet. They committed themselves to build a humane, equitable and caring global society, cognizant of the need for human dignity for all (produce a practical and visible plan to bring about poverty eradication and human development). To the greater community of life and to our children, they assumed a collective responsibility to advance and strengthen the interdependent and mutually reinforcing pillars of sustainable development- economic development, social development and environmental protection-at the local, national, regional and global levels.

¹¹⁴ Ibid.

¹¹⁵ Ibid, p 117.

The global environment continues to suffer with loss of biodiversity which cause the adverse effects of climate change are already evident, natural disasters are more frequent and more devastating, and developing countries more vulnerable, and air, water and marine pollution continue to rob millions of a decent life. Globalization has added a new dimension to these challenges. The rapid integration of markets, mobility of capital and significant increases in investment flows around the world has opened new challenges and opportunities for the pursuit of sustainable development. But the benefits and costs of globalization are unevenly distributed, with developing countries facing special difficulties in meeting this challenge. Parties agreed that there is a need for private sector corporations to enforce corporate accountability, which should take place with a transparent and stable regulatory environment. They undertook to strengthen and improve governance at all levels for the effective implementation of Agenda 21, the Millennium development goals and the plan of implementation of the Summit.¹¹⁶

1.9 United Nations Climate Change Conference, 2007

The **2007 United Nations Climate Change Conference** took place at the Bali International Conference Centre, Nusa Dua, in Bali, Indonesia, between December 3 and December 15, 2007. Representatives from over 180 countries attended, together with observers from intergovernmental and nongovernmental organizations. The Conference encompassed meetings of several bodies, including the 13th Conference of the Parties to the United Nations Framework Convention on Climate Change (**COP 13**), the 3rd Meeting of the Parties to the Kyoto Protocol (**MOP 3** or **CMP 3**), together with other subsidiary bodies and a meeting of ministers.

¹¹⁶ www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/POI_PD.htm and also see note 7, pp409-413

Negotiations on a successor to the Kyoto Protocol dominated the conference. A meeting of environment ministers and experts held in June called on the conference to agree on a road-map, timetable and 'concrete steps for the negotiations' with a view to reaching an agreement by 2009. It has been debated whether this global meeting on climate change has achieved anything significant at all.

Initial EU proposals called for global emissions to peak in 10 to 15 years and decline "well below half" of the 2000 level by 2050 for developing countries and for developed countries to achieve emissions levels 20-40% below 1990 levels by 2020. The United States strongly opposed these numbers, at times backed by Initial EU proposals called for global emissions to peak in 10 to 15 years and decline well below Japan, Canada, Australia and Russia. The resulting compromise mandates "deep cuts in global emissions" with references to the IPCC's Fourth Assessment Report.¹¹⁷

The participating nations adopted the **Bali Road Map** as a two-year process to finalizing a binding agreement in 2009 in Copenhagen. The Bali Road Map includes the Bali Action Plan (BAP) that was adopted by the COP-13. It also includes the Ad Hoc Working Group on Further Commitments for Annex I Parties¹¹⁸ under the Kyoto Protocol (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, as well as decisions on technology transfer and on reducing emissions from deforestation.

The Conference of Parties decided to launch a comprehensive process to enable the implementation of the Convention through long-term cooperative action, now,

¹¹⁷ http://en.wikipedia.org/wiki/Bali_roadmap#cite_note-2

¹¹⁸ Note 108

up to and beyond 2012, by addressing (the called pillars or building blocks): a shared vision for long-term cooperative action, including a long-term global goal for emission reductions; enhanced national/international action on mitigation of climate change; enhanced action on adaptation; enhanced action on technology development and transfer to support action on mitigation and adaptation; enhanced action on the provision of financial resources and investment to support action on mitigation and adaptation and technology cooperation.

Further, the nations acknowledge that evidence for global warming is *unequivocal*, and that humans must reduce emissions to reduce the risks of "severe climate change impacts" and emphasized the urgency to address climate change. There was a strong consensus for updated changes for both developed and developing countries. Although there were not specific numbers agreed upon in order to cut emissions, the Decision recognized that there was a need for "deep cuts in global emissions" (plural countries proposed 100% reduction in 2050) and that "developed country emissions must fall 10-40% by 2020".

Enhanced action on mitigation under the Bali Road Map of climate change includes, inter alia: Nationally appropriate mitigation commitments or actions by all developed countries; Nationally appropriate mitigation actions (NAMAs) by developing countries; Cooperative sectorial approaches and sector-specific actions (CSAs); Ways to strengthen the catalytic role of the convention.

Further more, the nations pledge "policy approaches and positive incentives" on issues relating to reducing emissions from deforestation and forest

degradation (REDD)¹¹⁹ in developing countries; and enhancement of forest carbon stock in developing countries This paragraph is referred to as “REDD-plus”.¹²⁰

In addition to that the nations opt for enhanced co-operation to "support urgent implementation" of measures to protect poorer countries against climate change, including National Adaption Plans (NAPs)¹²¹. Regarding the national will consider how to facilitate the transfer of clean and renewable energy technologies from industrialized nations to the developing countries. This includes, inter alia: removal of obstacles to, and provision of financial and other incentives for, scaling up the development and transfer of technology to developing country Parties in order to promote access to affordable environmentally sound technologies (renewable energies, electric vehicles); ways to accelerate the deployment, diffusion and transfer of such technologies; cooperation on research and development of current, new and innovative technology, including win-win solutions; the effectiveness of mechanism and tools for technology cooperation in specific sectors.

Further, the provision of financial resources and investment includes: improved access to predictable and sustainable financial resources and the provision of new and additional resources, including official and concessional funding for developing country Parties (dcP); Positive incentives for dcP for national mitigation strategies and adaptation action; innovative means of funding for dcP that are particularly vulnerable to the adverse impacts of climate change in

¹¹⁹ The agenda item on “Reducing emissions from deforestation in developing countries and approaches to stimulate action” was first introduced into the COP agenda at its eleventh session in Montreal (December 2005) and is a set of steps designed to use market and financial incentives in order to reduce the emissions of greenhouse gases from deforestation and forest degradation. Its objective is to reduce greenhouse gases.

¹²⁰ REDD-plus or REDD+, or REDD plus extends REDD by sustainable forest management, conservation of forests and enhancement of carbon sink. And also REDD++ extends by low carbon but high biodiversity lands.

¹²¹

<http://www.undpcc.org/docs/Bali%20Road%20Map/English/FINANCING%20UNDER%20THE%20BRM.pdf>

meeting the costs of adaptation; incentivisation of adaptation actions on the basis of sustainable development policies; mobilization of funding and investment, including facilitation of climate-friendly investment choices; financial and technical support for capacity-building in the assessment of costs of adaptation in developing countries, to aid in determining their financial needs.¹²²

1.10 United Nations Climate Change Conference, 2009

This Conference commonly known as the **Copenhagen Summit** was held at the Bella Center in Copenhagen, Denmark, between 7 December and 18 December.¹²³ The document adopted in the Conference recognized that climate change is one of the greatest challenges of the present day and that actions should be taken to keep any temperature increases to below 2 °C. This document is not legally binding and does not contain any legally binding commitments for reducing CO₂ emissions. Many countries and non-governmental organisations were opposed to this agreement, but, throughout 2010, 138 countries had either formally signed on to agreement or signaled they would.¹²⁴

¹²² The Conference decided establish a subsidiary bodies under the Convention to conduct the process, the Ad Hoc Working Group on Long-term Cooperative Action (AWG-LCA) and the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP), that were to complete their work in 2009 and present the outcome to the COP15/MOP 5. The Group must develop its working programme in its first session in a coherent and integrated manner. The AWG-LCA and AWG-KP presented draft conclusions to COP15 and CMP5, which contained many unresolved issues. These working groups are now due to report to COP16 and CMP6 in Mexico. Four major UNFCCC meetings to implement the Bali Road Map were planned for 2008, with the first to be held in either March or April and the second in June, with the third in either August or September followed by a major meeting in Poznan, Poland in December 2008. The negotiations process was scheduled to conclude at the United Nations Climate Change Conference 2009 in Copenhagen, Denmark. See http://en.wikipedia.org/wiki/Bali_roadmap#cite_note-2.

¹²³ The conference included the 15th Conference of the Parties(COP 15) to the United Nations Framework Convention on Climate Change and the 5th Meeting of the Parties (MOP 5) to the Kyoto Protocol. According to the Bali Road Map, a framework for climate change mitigation beyond 2012 was to be agreed there.

¹²⁴ http://en.wikipedia.org/wiki/2009_United_Nations_Climate_Change_Conference

On 19th December, delegates approved a motion to "take note of the Copenhagen Accord of December 18, 2009". This was due to the opposition of such as Bolivia, Venezuela, Sudan and Tuvalu who registered their opposition to both the targets and process by which the Copenhagen Accord was reached. It should be note that the Copenhagen Accord recognizes the scientific case for keeping temperature rises below 2 °C, but does not contain a baseline for this target, or commitments for reduced emissions that would be necessary to achieve the target. One part of the agreement pledges US\$ 30 billion to the developing world over the next three years, rising to US\$100 billion per year by 2020, to help poor countries adapt to climate change. One notable feature is that earlier proposals that would have aimed to limit temperature rises to 1.5 °C and cut CO₂ emissions by 80% by 2050 were dropped. The Accord also favors developed countries' paying developing countries to reduce emissions from deforestation and degradation, known as "REDD". The agreement made was non-binding but US President Obama said that countries could show the world their achievements.¹²⁵

1.11 United Nations Climate Change Conference, 2010

The Conference was held in Cancun, Mexico, from 29 November to 10 December 2010.¹²⁶ The 2009 United Nations Climate Change Conference extended the mandates of the two temporary subsidiary bodies, the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP) and the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA).

¹²⁵ He said that if they had waited for a binding agreement, no progress would have been made, *ibid*

¹²⁶ The conference is officially referred to as the 16th session of the Conference of the Parties (COP 16) to the United Nations Framework Convention on Climate Change (UNFCCC) and the 6th session of the Conference of the Parties serving as the meeting of the Parties (CMP 6) to the Kyoto Protocol. In addition, the two permanent subsidiary bodies of the UNFCCC – the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI)– held their 33rd sessions.

The summit was an agreement adopted by the states' parties that called for a large "Green Climate Fund", and a "Climate Technology Centre" and network. It looked forward to a second commitment period for the Kyoto Protocol.

The agreement recognizes that climate change represents an urgent and potentially irreversible threat to human societies and the planet, which needs to be urgently addressed by all Parties. It affirms that climate change is one of the greatest challenges of our time and that all Parties must share a vision for long-term cooperative action in order to achieve the objective of the Convention, including through achievement of a global goal. It recognizes that warming of the climate system is scientifically based and that most of the observed increases in global average temperatures since the mid twentieth century are very likely due to the observed increase in anthropogenic greenhouse gas concentrations, as assessed by the IPCC in its Fourth Assessment Report.

The agreement further recognizes that deep cuts in global greenhouse gas emissions are required, with a view to reducing global greenhouse gas emissions so as to hold the increase in global average temperature below 2°C above pre-industrial levels, and that Parties should take urgent action to meet this long-term goal, consistent with science and on the basis of equity; and recognizes the need to consider, in the context of the first review, strengthening in relation to a global average temperature rise of 1.5°C. The agreement also notes that addressing climate change requires a paradigm shift towards building a low-carbon society.

The agreement calls on rich countries to reduce their greenhouse gas emissions as pledged in the Copenhagen Accord, and for developing countries to plan to reduce their emissions.¹²⁷

1.12 United Nations Climate Change Conference, 2011

The Conference was held in Durban, South Africa, from 28 November to 11 December 2011 to establish a new treaty to limit carbon emissions. The conference agreed to a legally binding deal comprising all countries, which will be prepared by 2015, and to take effect in 2020. There was also progress regarding the creation of a Green Climate Fund (GCF) for which a management frame work was adopted. The fund is to distribute US\$100 billion per year to help poor countries adapt to climate impacts.¹²⁸

A primary focus of the conference was to secure a global climate agreement as the Kyoto Protocol's first commitment period (2008–2012) was about to end. It was also expected to focus on "finalising at least some of the Cancun Agreements", reached at the 2010 Conference, such as "co-operation on clean technology", as well as "forest protection, adaptation to climate impacts, and finance – the promised transfer of funds from rich countries to poor in order to help them protect forests, adapt to climate impacts, and "green" their economies".¹²⁹

¹²⁷ http://en.wikipedia.org/wiki/2010_United_Nations_Climate_Change_Conference

¹²⁸ While the president of the conference, Maite Nkoana-Mashabane, declared it a success, scientists and environmental groups warned that the deal was not sufficient to avoid global warming beyond 2 °C as more urgent action is needed.

¹²⁹ http://en.wikipedia.org/wiki/2011_United_Nations_Climate_Change_Conference

1.13 Bonn Climate Change Conference, 2012¹³⁰

It appears that China and India, both rapidly growing economies with an increasing share of global emissions, have tried to delay talks on such a treaty. Instead of a work plan for the next three years to achieve the objective of a new pact, governments have only managed to draw up a partial agenda. Connie Hedegaard, the EU climate chief, said: "The world cannot afford that a few want to backtrack from what was agreed in Durban only five months ago. Durban was – and is a delicately balanced package where all elements must be delivered at the same pace. It is not a pick and choose menu. It is very worrisome that attempts to backtrack have been so obvious and time-consuming in the Bonn talks over the last two weeks." It is observed that there was also little progress on the key issue of the financing by rich countries of actions in the developing world. Meeting in Bonn, negotiators and officials from around the world haggled over the set-up of a 'Green Climate Fund' that would channel cash from the developed world to poorer countries, to help them cut greenhouse gas emissions and cope with the effects of climate change. However, parties agreed much of the detail that will be needed to extend the Kyoto protocol – currently the world's only legally binding treaty on emissions cuts beyond 2012 when its current provisions expire.

Christiana Figueres, the top climate change official at the United Nations, who presided over the two weeks of talks, stated that "I am pleased to say that the Bonn meeting produced more clarity on the protocols' technical and legal details and options to enable a smooth transition between the two commitment periods of the protocol." With all said and done the only major developed countries that have

¹³⁰ The 36th sessions of the Subsidiary Body for Implementation (SBI) and of the Subsidiary Body for Scientific and Technological Advice (SBSTA), the fifteenth session of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA), the seventeenth session of the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP) and the first session of the Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP) takes place concurrently from 14 to 25 May. All sessions are held at the Maritime Hotel in Bonn, Germany.

agreed to continue the Kyoto protocol are those of the European Union. Canada and Japan have dropped out, and the US never ratified the 1997 accord.¹³¹

1.14 The United Nations Conference on Sustainable Development 2012

It was held in Rio¹³² and addressed the following issues:

- a. Systematic scrutiny o patterns of production-particularly the production of toxic components, such as lead gasoline, or poisonous waste including radioactive chemicals.
- b. Alternative sources of energy to replace the use of fossil fuels which are linked to global climate change.
- c. New reliance on public transportation systems in order to reduce vehicle emissions, congestion in cities and the health problems caused by polluted air and smog the growing scarcity of water.
- d. Global warming

An important achievement of this conference was an agreement on the Climate Change Convention which in turn led to the Kyoto Protocol. Another Agreement was to “not carry out ay activities on the lands of indigenous peoples that would cause environmental degradation or that would be culturally inappropriate”.¹³³

¹³¹ The fortnight-long talks in Bonn followed an unexpected last-ditch agreement in December at a meeting in Durban, when countries resolved to spend the next three to four years thrashing out the terms of a new global treaty on climate change and emissions cuts, which would come into force from 2020. Such a treaty would follow on from the Kyoto protocol and from the Copenhagen pledges made at a 2009 summit, in which both developed and developing countries agreed for the first time jointly to curb emissions by 2020. Those pledges do not have the legal force of a full treaty, however, and have been shown in a variety of studies to be inadequate to stave off dangerous levels of climate change.

¹³² Commonly called as Rio +20 or Rio Earth Summit 2012 was held from June 20- to 22, 2012.

¹³³ http://en.wikipedia.org/wiki/Rio_Declaration_on_Environment_and_Development