

International Protocols

Without a healthy and clean environment, human beings will be deprived of their right to a healthy and productive life. We have learnt substantially how environmental pollution is taking away our rights to such life. So, to keep the biodiversity and environment in a healthy condition is the need of the hour.

Environment and more specifically environmental pollution has no political boundaries. The air polluted in one region can be transmitted to thousands of miles without the manmade barriers. Thus, environmental pollution, global warming, climate change and other related issues have been given more weight at international forums and symposia.

A number of efforts are being made at international and national levels to maintain the equilibrium and resilience characteristics of the ecosystems with the objective to make them sustainable and productive. These efforts are given the nomenclature of international conventions or conferences and protocols.

What are Conventions and Protocols?

A **convention** is a meeting or gathering to formulate or deliberate on a generally accepted principle, framework in which the parties decide the basic guidelines. For example, Rio Convention.

A **protocol**, on the other hand, contains specific aims or legal obligations agreed upon by the members who gather in a convention or conference. Usually, when a major provision is to be incorporated on regulations of the convention, a protocol is called among the countries, who are signatory of the original convention when it was signed and approved.

The United Nation's Framework Convention on Climate Change

The **United Nations Framework Convention on Climate Change** (UNFCCC or FCCC) is an international environmental treaty created at the United Nations Conference on Environment and Development (UNCED), informally known as the Earth Summit, held in Rio de Janeiro from June 3 to 14, 1992.

The United Nations Climate Change Conferences are annual events held in the framework of UNFCCC. The conferences are held to assess the progress made in efforts to deal with climate change.

These conferences serve as the formal meeting of the UNFCCC Parties and are popularly called Conference of Parties (COP). Palestine became the 197th party to UNFCCC in 2016.

The first UN Climate Change Conference or Conference of Parties (COP 1) was held in 1995 in Berlin.

Landmark Conferences of Parties (COP _s)		
Year	Name of the COP	Focal Point
2007	COP 13 – Bali Action Plan	To further commitments by parties to Kyoto Protocol
2009	COP 15 – Copenhagen Accord	To establish an ambitious global climate agreement for the period from 2012, when the first

		commitment period under the Kyoto Protocol expires
2010	COP – 16 – Cancun Agreement	Encompassed finance, technology, and capacitybuilding support to help such countries meet urgent needs to adapt to climate change; Set up Green Climate Fund to support climate change mitigation efforts
2011	COP – 17 – Durban Agreement	To adopt a universal legal agreement on climate change as soon as possible, and no later than 2015
2016	COP – 22 – Marrakesh Action Proclamation	Pledge to press ahead with implementation of Paris Agreement

Objectives of UNFCCC

- To stabilize Greenhouse Gas concentration to such a level that would prevent human induced interference with the climate system within a timeframe.
- To enable the 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.

Earth Summit

The Brundtland Report of 1987 sent an alert to the world about the urgency of making progress towards sustainable economic development without harming the already sick environment and without depleting the vanishing natural resources.

Five years later, the progress on enunciated sustainable development was sought by the UN and United Nations Conference on Environment & Development. Held in June 1992 at Rio de Janeiro in Brazil, the **Rio Earth Summit** as it became popularly known, was the largest environmental conference ever held, attracting over 30,000 people including more than 100 heads of state.

The Rio Conference was held primarily with an objective towards building upon the hopes and achievements of the Brundtland Report with a view to responding to mounting global environmental problems and to agree on major treaties on biodiversity, climate change, and forest management.

The major outcome of the Earth Summit was **Agenda 21**. Agenda 21 is a comprehensive plan of action to be taken globally, nationally, and locally by organizations of the United Nations System, Governments, and Major Groups in every area that humans impact on the environment.

Besides, the Rio Declaration on Environment and Development, and the Statement of Principles for the Sustainable Management of Forests were adopted.

The Earth Summit influenced all subsequent UN conferences, which have examined the relationship between human rights, population, social development, women and human settlements — and the need for environmentally sustainable development.

The Kyoto Protocol

In order to reduce the growing concentration of greenhouse gases (GHGs) in the Earth's atmosphere, the UNFCCC put in place the first ever agreement between nations to mandate country-by-country reduction in GHGs. This historic Protocol was adopted in Kyoto, Japan, on 11 December 1997 and hence, got the name of Kyoto Protocol.

The **Kyoto Protocol** officially came into force in 2005, after being formally ratified by the required number of nations. Participating nations or the signatories have agreed to meet certain greenhouse gas emission targets, as well as submit to external review and enforcement of these commitments by the UN-based bodies.

The parties or the signatory countries committed to reduce the GHGs emission, based on the premise that (a) global warming exists and (b) man-made CO₂ emissions have caused it.

Under Kyoto, industrialized nations pledged to cut their yearly emissions of carbon, as measured in six greenhouse gases, by varying amounts, averaging 5.2%, by 2012 as compared to 1990.

It excluded developing countries such as China and India, which have since become the world's largest and fourth largest polluters according to the International Energy Agency, as well as second-placed United States which refused to ratify the deal.

A second commitment period was agreed on in 2012, known as the Doha Amendment to the protocol, in which 37 countries have binding targets: Australia, the European Union (and its 28 member states), Belarus, Iceland, Kazakhstan, Liechtenstein, Norway, Switzerland, and Ukraine.

Initiatives like Kyoto Protocol has been necessitated as the UN has set a target of limiting global warming to 2.0 degrees Celsius (3.6 Fahrenheit) from pre-industrial levels — a level at which scientists say the planet may be spared the worst impacts of climate change.

Montreal Protocol

The **Montreal Protocol** is related to the substance that depletes the ozone layer of the atmosphere. This International Treaty, is designed to protect the ozone layer, by phasing out the production of numerous substances believed to be responsible for ozone depletion. The Treaty was opened for signature on 16 September, 1987 and came into force on 1 January, 1989.

Its first meeting was held at Helsinki in May, 1989. Since then, it has undergone several revisions in London (1990), Nairobi (1991), Copenhagen (1992), Bangkok (1993), Vienna (1995), Montreal (1997), Beijing (1999), and Kigali (2016).

It was agreed that if this international agreement is strictly adhered to, the ozone layer would recover by 2005. At first, the aim was to remove harmful chemicals such as CFCs by 50 percent by 1998. The target was further revised so as to curtail the production of these chemical at the earliest.

The Montreal Protocol has been ratified by 196 countries. It is the first international treaty to achieve complete ratification by member countries. In Kigali, Rwanda in 2016, the Parties (Members) agreed to an international phase down of 85 percent of Hydrofluorocarbons (HFCs).

Paris Agreement

The **Paris Agreement** or Paris Climate Agreement is a UN sponsored pact to bring the world countries together in the fight against climate change.

Countries that sign on to be a part of the pact agreed to limit the century's global average temperature increase to no more than 2 degrees Celsius (3.6 degrees Fahrenheit) above the levels from the years 1850-1900 (the pre-industrial era) and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.

Participating countries made the Paris Pact on 12 December, 2015 to adopt green energy sources, cut down on greenhouse gas emission, and limit the rise of global temperature.

Every country has an individual plan or 'Nationally Determined Contributions' to tackle greenhouse gas emission.

The agreement went into effect on Nov. 4, 2016; 30 days after at least 55 countries representing at least 55 percent of the world's global emissions ratified it on Oct. 5, 2016. As of May 2017, of the 196 negotiating countries that signed the agreement, 147 parties have ratified it

Policy and Legislation

In the previous chapters, we have learnt about the environment, ecosystem, natural resources, biodiversity and its importance for the living world, especially for mankind. We have also learnt how environmental problems such as pollution and climate change affect and threaten our survival. There is a need for knowing the legal and constitutional provisions for protecting and nurturing the nature. In this chapter, we will learn about such provisions and acts.

Need for Policy & Legislation

It has always been the desire of man to have clean air, clean water and environment free of toxins and pollutants. In the first half of the last century, there were few legal and constitutional mechanisms in place to protect the environment and the natural resources found in a country.



Increasing pollution and mounting pressure on air, water and land quality led to environmental legislations being designed to protect the environment from harmful actions. Due to the current state of the environment, policy makers in every country need to place a top priority on environmental policy.

Natural resources, both renewable and non-renewable and wildlife are continuously being under threat. It is estimated that considering the present rate of exploitation of such resources we are going to be devoid of many important resources in near future. Unless we take care of them and resort to a sustainable use, we will make our posterity live without resources. Hence, there is a need for environmental policies and legislations.

What is an Environmental Policy?

Policy refers to a set of principles or plans agreed upon by a government or an organization to be carried out in a particular situation. **Environmental policy** is defined as “any action deliberately taken to manage human activities with a view to prevent, reduce, or mitigate harmful effects on nature and natural resources, and to ensure that man-made changes to the environment do not have harmful effects on human or the environment”.

Environmental policy usually covers air and water pollution, waste management, ecosystem management, biodiversity protection, and the protection of natural resources, wildlife and endangered species. Proper policies and legislations at the national and the international levels can reduce the venomous pollution and help protect biodiversity and natural resources.

What is an Environmental Legislation?

Environmental legislation is a set of laws and regulations which aim at protecting the environment from harmful actions.

Legislation may take many forms, including regulation of emissions that may lead to environmental pollution, taxation of environment- and health-damaging activities, and establishing the legal framework for trading schemes, for example, carbon emissions. Other actions may rely on voluntary agreements. Among major current legislative frameworks are those relating to environmental permitting, and those mandating environment and health impact assessments.

Environmental Protection Act

Most of the countries in the world have enacted Environmental Protection Acts considering the need for the protection of our environment.

In the US, the National Environmental Policy Act (NEPA) of 1970 promotes the enhancement of the environment and established the President’s Council on Environmental Quality (CEQ). It is referred to as the ‘environmental Magna Carta’ in the USA because it was an early step towards the development of US’ environmental policy. Other environmental acts in the USA are as follows.

- Clean Air Act of 1970 and 1990
- Clean Water Act of 1972
- Endangered Species Act of 1973
- Resource Conservation and Recovery Act of 1976
- National Forest Management Act of 1976
- Surface Mining Control and Reclamation Act of 1977
- Comprehensive Environmental Response, Compensation and Liability Act of 1980

Environment constitutes air, water, land, or vegetation. To protect the environment means to take constructive measures to free these natural objects from pollutants. The measures are backed by the constitution and the chief law making forum in a country so as to ensure an expedited and assured implementation of the measures. An Act provides for the prevention, control and abatement of air pollution, water pollution, and forest degradation.

Environmental Impact Assessment

The effects of human activities related to the use of environmental resources on natural environment is called **Environmental Impact**. The assessment and evaluation of environmental effects of human activities are collectively called **Environmental Impact Assessment (EIA)**.

Environmental Impact Assessment is, therefore, a method of evaluating environmental consequences such as environmental changes which are likely to be caused by the proposed human activities related to land use changes, construction of dams, reservoirs, roads, rails, bridges, industrial locations, urban expansion, etc. and the possible adverse effects of these environmental changes.

Environmental changes mean environmental degradation and pollution resulting into ecological imbalance and ecosystem disequilibrium. The environmental impact assessment process began with the enactment of the National Environmental Policy Act (NEPA) in the US in 1969.

Objectives of Environmental Impact Assessment

In view of the colossal damage to the environment, there is a felt need for assessing the environmental impacts of developmental activities. EIA is a tool to anticipate the possible damage to the environment caused by developmental projects and schemes, and propose mitigation measures and strategies.

EIA exerts to declare a national policy to encourage productive and enjoyable harmony between man and environment. It promotes efforts to prevent or eliminate damage to the environment and the biosphere, and stimulate the health and welfare of man.

It seeks to increase the understanding of ecological system and nature resources important to the nation and to provide for appropriate institutional structure to carry out the objectives.

It provides a broad, integrated perspective of a region about to undergo or undergoing developments. EIA ascertains the cumulative impacts from the multiple development in the region. It establishes priorities for environmental protection. It also identifies the positive and negative aspects of any project as well as assesses the policy options and analyzes the impact on the environment therein.

Projects that Require Environmental Clearance

- Manufacturing Industries
- Mining
- Thermal Power Plants
- River Valley Projects
- Infrastructure and Coastal Regulation Zone
- Nuclear Power Projects

Steps in Environmental Impact Assessment

- Describe the present environment
- Describe the project, including purposes and needs
- Describe the effects of the project
- Describe the impact, both short term and long term
- Suggest and compare alternatives (projects)
- Suggest mitigating activities or remedial measures

Towards Sustainable Future

According to the United Nations, "**Sustainable development** is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Sustainable development requires meeting the basic needs of all and aims to provide all the opportunity to meet their aspirations to lead a better and healthy life.

Concept of Sustainable Development

Our living standards should be in tune with the limit of the world's ecological means. However, many of us live beyond it and have scant regard for long-term sustainability. Economic growth and development is required to be in commensurate with the limits of the ecology and environment. It is required largely by the sustainable development.



Sustainable development requires setting limits in terms of population or resource use beyond which lies ecological disaster. It warns every one of us against surpassing the ultimate limits of the natural system, or else face dire consequences. It also requires that long before mankind crosses these limits, the world must ensure equitable access to the constrained resource and use technology towards it.

Economic growth and development obviously involve changes in the physical ecosystem. However, it should not cross the limits of regeneration and natural growth. For instance, renewable resources such as forests and fish stocks need not be depleted provided the rate of use is within the limits of regeneration and natural growth.

Sustainable development requires that the rate of depletion of non-renewable resources should foreclose as few future options as possible. It requires flourishing biodiversity and, hence, it vouches for the conservation of plant and animal species. It also vouches for a type of development where the adverse impacts on the quality of air, water, and other natural elements are minimized so as to sustain the ecosystem's overall integrity.

Sustainable development is a wholesome process of change in which the use of resources, investment, the orientation of technological development and institutional changes are all in harmony with and enhance both the current and future potential to meet human needs and aspirations.

17 New UN Development Goals for 2030

- End poverty in all its forms everywhere
- End hunger, achieve food security and improved nutrition, and promote sustainable agriculture
- Ensure healthy lives and promote well-being for all at all ages
- Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- Achieve gender equality and empower all women and girls
- Ensure availability and sustainable management of water and sanitation for all
- Ensure access to affordable, reliable, sustainable and modern energy for all
- Promote inclusive and sustainable economic growth, full and productive employment, and decent work for all
- Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation
- Reduce inequality within and among countries
- Make cities and human settlements inclusive, safe, resilient, and sustainable
- Ensure sustainable consumption and production patterns
- Take urgent action to combat climate change and its impact
- Conserve and sustainably use the oceans, seas, and marine resources for sustainable development
- Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation, and halt biodiversity loss
- Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels
- Strengthen the means of implementation and revitalize the global partnership for sustainable development

The new goals replace the eight Millennium Development Goals adopted at a Summit in 2000, which expired at the end of 2015.

Environmental Education

Environmental education is a multi-disciplinary field integrating disciplines such as biology, chemistry, physics, ecology, earth science, atmospheric science, mathematics, and geography.

Environmental Education (EE) aims at increasing the consciousness and knowledge about the various aspects of environment and also about the major environmental problems facing the world today. It also spreads awareness among the masses with special emphasis on educators, voluntary works, youth and women with a view to promote conservation of nature and its resources.

It develops and makes room for implementation of innovative, region-specific educational programs and materials for conservation education and sensitizes children on environment. It includes all efforts to make general public aware of the knowledge of the environmental challenges through media and print materials.

UNESCO (United Nation Educational, Scientific, and Cultural Organization) emphasizes the role of EE in safeguarding future global developments of societal quality of life (QOL), through the protection of the environment, eradication of poverty, minimization of inequalities, and insurance of sustainable development.

Today, environmental education has become one of the most popular academic study world-over. There are special institutions coming up in the world to impart higher degrees on environmental education.

Life Cycle Assessment

Life Cycle Assessment (LCA) is a tool used to assess the potential environmental impact of product systems or services at all stages in their life cycles, i.e. from the extraction of raw materials, manufacturing or processing, storage, distribution, use and its disposal or recycling.

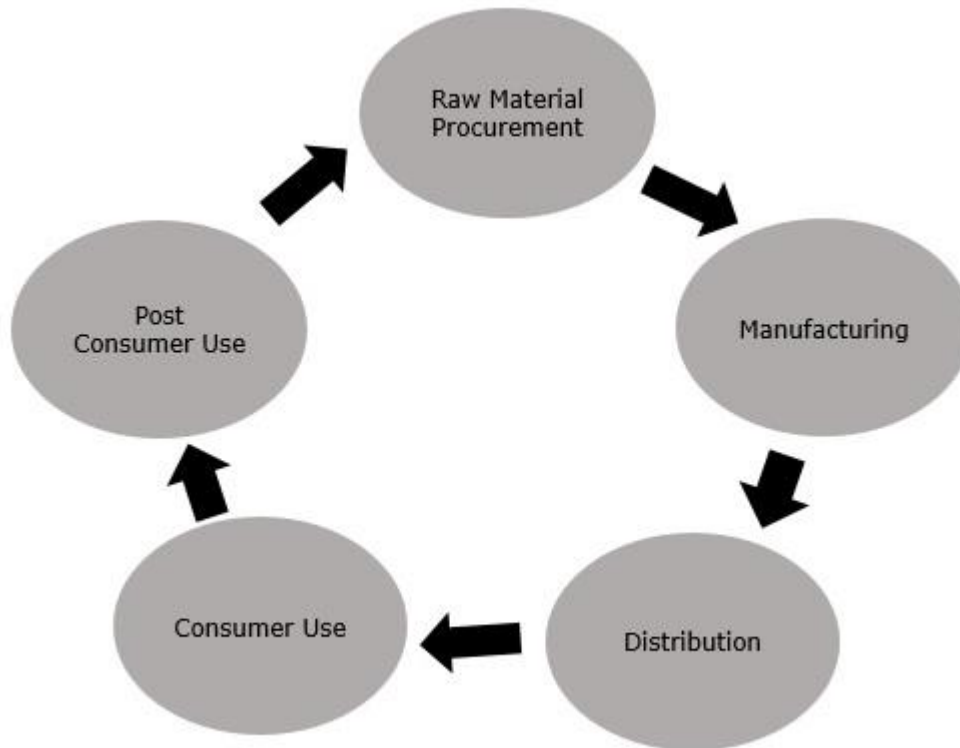
In other words, LCA is a technique for assessing the potential environmental and other aspects associated with a product or a service by various methods such as –

- Compilation of an inventory of inputs and outputs
- Evaluation of potential environmental impact relating to those inputs and outputs
- Interpretation of the results of the evaluation

LCA is, therefore, a cradle-to-grave assessment of production system and their likely environmental impacts. It has come up as a valuable decision-support tool for both policy makers and industry in assessing from origin-to-end impact of a product or process.

LCA methodology has been developed extensively during the last decade. Moreover, a number of LCA related standards (ISO 14040-14043) and technical reports have been published within the International Organization for Standardization (ISO) to streamline the methodology.

Following is the representation of the LCA process.



The overall objective of LCA is to identify changes, at every stage of the life cycle of a product or process that can be helpful to the environment and prove to be cost effective.

Low Carbon Lifestyle

Carbon dioxide (CO₂) is a vital constituent in the Earth's atmosphere. It is a major greenhouse gas and plays a vital role in regulating the Earth's surface temperature. Carbon dioxide is an integral part of the carbon cycle, which is a biogeochemical cycle in which carbon is exchanged between the earth's oceans, soil, rocks, and the biosphere.

Carbon content in dry air is around 0.01 percent. When such percentage is increased largely by anthropogenic or man-made activities, the air gets polluted. CO₂ is one the prominent greenhouse gases that has been adding to the severity of atmospheric pollution and global warming in recent times.

Human activities such as increasing automobile population, industries, and consumption of electricity, etc. emit great amount of carbon into the atmosphere. For mankind's extensive dependence on natural resources and its mindless exploitation, has been slowly but steadily withering the green cover from the earth.

Carbon footprint is the amount of carbon dioxide released into the atmosphere as a result of the activities of a particular individual, organization, or community. At an individual level, these greenhouse gases are generated through transport, production and consumption of food, fuels, manufactured goods and other services.



Steps to Maintain Low Carbon Lifestyle

- **De-carbon Life** – Switching to a lifestyle which has the least possible impact on the environment, generates the smallest carbon footprint. Everything an individual, organization, business or government does or uses embodies some form of carbon. These should be chosen based on the least amount of impact they will have on the climate and the environment.
- **Get Energy Efficient** – Improving the efficiency of your buildings, computers, cars, and products is the fastest and most lucrative way to save money, energy and carbon emissions. High performance, environmentally accountable, energy efficient and productive facilities are now economically possible. For instance, use of LED bulbs in place of incandescent bulbs is a case in point.
- **Switch to Low Carbon Energy** – We should make an effort to get energy from renewable sources such as solar or wind energy. Shifting from conventional sources to nonconventional energy sources to the best extent possible will have a visible impact on the environment. Today, more than 50 per cent of all US consumers, for example, have an option to purchase some type of green power product.
- **Switch to Low Carbon Products and Services** – The market for climate-friendly products and services is growing rapidly, from energy-efficient products to new renewable energy systems. Eco-Design is an important strategy for small and medium sized companies both in developed and developing countries to improve the environmental performance of their products, reduce waste, and improve their competitive position in the market.
- **Buy Green and Sell Green** – Today, there is a growing number of consumers willing to buy green products, if given the choice.

To realize or make incessant efforts to achieve a sustainable world lies in the hands of man. Mankind, if desires, can deactivate the destructive processes that have so crippled the natural environment through dedicated and well-planned actions and initiatives. Failure to do so endangers civilization and paves the way for mass suffering, conflicts, and multiple collapses all around us.