

Lecture 16. National and state level organizations - Environmental Laws and Acts – Environmental Education – CDM.

Environmental Organizations

There are a number of international and national organizations, agencies and programmes involved in different areas of environment, forestry, wildlife and other relevant aspects. Some of the important bodies of this type area as follows.

International Bodies

1. Earth scan: An agency, founded by UNEP in 1976, that commissions original articles on environmental matter and sells them as features to newspapers and magazines, especially in developing countries.

2. Convention on International Trade in Endangered Species (CITES). An international forum, whose membership for agreement is open to all countries. For India, the Ministry of Environment and Forests functions as nodal agency for participation in international agreements.

3. Environmental Protection Agency (EPA). This is an independent Federal Agency of the U.S. Government established in 1970. It deals with protection of air, water, solid wastes and management of radiation, pesticides, noise etc.

4. European Economic Community (EEC). It is community of 12 European nations with sound political, economic and legal base. The community has joint agricultural and scientific programmes. It has programmes of framing and implementation of coordinated policy for environmental improvement and conservation of natural resources. CPCB, India has taken up projects on air quality monitoring with assistance of EEC.

5. Human Exposure Assessment Location (HEAL). The project is a part of the Health Related Monitoring Programme by WHO in co-operation with UNEP. This project has three components, viz., (i) air monitoring (ii) water quality monitoring and (iii) food contamination monitoring on a global basis.

6. International Council of Scientific Unions (ICSU). A non-government organization based in Paris, that encourages the exchange of scientific information, initiates programmes requiring international scientific cooperation and studies and reports on matters related to social and political responsibilities in treatment of scientific community.

7. International Union for Conservation of Nature and Natural Resources (IUCN). An autonomous body, founded in 1948 with its Headquarters at Morges, Switzerland, that initiates and promotes scientifically based conservation measures. It also cooperates with United Nations and other intergovernmental agencies and sister bodies of World Wide Fund for Nature (WWF).

8. International Marine Consultative organization (IMCO). It regulates the operation of ship in high seas, from marine water pollution viewpoint.

9. South Asia co-operative Environment Programme (SACEP). This has been recently set up for exchange of professional knowledge and expertise on environmental issues among member countries – Afghanistan, Bangladesh, Bhutan, India, Iran, Pakistan and Sri Lanka.

10. United Nations Educational, Scientific and Cultural Organization (UNESCO). An United Nations agency, found in 1945 to support and implement the efforts of member states to promote education, scientific research and information, and the arts to develop the cultural aspects of world relations. It also holds conferences and seminars, promotes research and exchange of information and provides technical support. Its Headquarters are in Paris. Independently as well as in collaboration with other agencies like UNEP, it supports activities related to environmental quality, human settlements, training to environmental engineers and other socio-cultural programmes related to environment.

11. United Nations Environment programme (UNEP). A UN agency, responsible for co-operation of inter-governmental measures for environmental monitoring and protection. It was set up in 1972. There is a voluntary United Nations Environment Fund to finance environmental projects. There is an Environmental Coordination Board, to coordinate the UNEP programmes. Its Headquarters are in Nairobi, Kenya. UNEP was founded to study and formulate international guidelines for management of the environment. UNEP is assisting many such programmes in India.

12. World Commission on environment and Development (WCED). This is a 23 member commission, set up in 1984 in pursuance to a UN General Assembly resolution in 1983 to re-examine the critical environmental and development issues and to formulate proposals for them. This is a call for political action to manage better environmental resources to ensure human progress and survival. The commission makes an assessment of the level of understanding and commitment of individuals, voluntary organizations and governmental bodies on environmental issues.

13. Earthwatch Programme. A world wide programme, established in 1972 under the terms of the Declaration on the Human Environment. It monitors trends in the environment, based on a series of monitoring stations. Its activities are coordinated by UNEP.

14. Project Earth. Developed in collaboration with UNEP to inspire and educate young people worldwide on the crucial issues facing the Earth's Environment.

15. Man and Biosphere Programme (MAB). The programme is the outcome of International Biological Programme (IBP) that has already concluded its activities. MAB was formerly launched by UNESCO in 1971.

Man and the Biosphere Programme (MAB)

MAB is the outcome of the experience of those involved in the International Biological Programme (IBP). It was realized that several problems require collaboration of natural and social scientists, planners and managers and the local people. MAB was conceived at the International Biosphere Conference of UNESCO in 1968 and was officially given shape by General Conference at its 16th Session in 1970. The programme was formally launched by UNESCO in November 1971, when the

MAB International Coordinating Council held its first session and identified 13 project areas of cooperative research. One more project area was added in 1974.

National Organizations

There are a number of governmental as well as non-governmental organizations, agencies and programmes engaged in environmental studies. A number of non-governmental, voluntary organizations have been doing good job in this area.

Most of the governmental bodies involved in environmental studies are either put under the administrative control of, or assisted by the Department of Environment, Forests and Wildlife in the Ministry of Environment Forests, Government of India.

Department of Environment, Forests and Wildlife of India

Department of Environment was set up in 1980 to serve as the local point in the administrative structure of the Government for planning, promotion and coordination of environmental programmes.

The present integrated Department of Environment, Forests and Wildlife in the Ministry of Environment and Forests was created in September 1985. The Ministry serves as the local point in the administrative structure of the Central Government of the planning, promotion and coordination of environmental and forestry programmes. The Ministry's main activities are, the survey and conservation of flora, forests and wildlife, prevention and control of pollution, afforestation and regeneration of the degraded areas of the environment.

Other National Organization

There are other governmental and non-governmental organizations / agencies involved in environmental issues. Some of the important ones are as follows:

- (1) Advisory Board on Energy (ABE)
- (2) Bombay Natural History Society (BNHS)
- (3) Central Forestry Commission (CFC)
- (4) Department of Non-Conventional Energy Sources (DNES)
- (5) Industrial Toxicology Research Centre (ITRC)
- (6) National Environmental Engineering Research Institute (NEERI)
- (7) National Natural Development Board
- (8) National Natural Research Management System
- (9) National Wetland Management Committee

- (10) State Pollution Control Board (SPCB)
- (11) Tata Energy Research Institute (TERI)
- (12) Several Research Institutes under I.C.A.R. including
I.G.F.R.I., Jhansi, Central Soil Salinity Research Institute, Karnal.

Environmental Impact Assessment

Environmental impact assessment is a written analysis or process that describes and details the probable and possible effects of planned industrial or civil project activities on the ecosystem, resources, and environment. The National Environmental Policy Act (NEPA) first promulgated guidelines for environmental impact assessments with the intention that the environment receives proper emphasis among social, economic, and political priorities in governmental decision-making. This act explains the importance of environmental impact assessments for major federal actions affecting the environment. Many states now have similar requirements for state and private activities. Such written assessments are called Environmental Impact Statements or EISs.

Environmental Impact Statement (EIS) is a formal process used to predict how a development project or proposed legislation will affect such natural resources as water, air, land, and wildlife. The environmental impact statement was first introduced in 1969 in the United States as a requirement of the National Environmental Policy Act. Since then, an increasing number of countries have adopted the process, introducing legislation and establishing agencies with responsibility for its implementation.¹

EISs range from brief statements to extremely detailed multi-volume reports that require many years of data collection and analysis. In general, the environmental impact assessment process requires consideration and evaluation of the proposed project, its impacts, alternatives to the project, and mitigating strategies designed to reduce the severity of adverse effects. The assessments are completed by multidisciplinary teams in government agencies and consulting firms.

The content of the assessments generally follows guidelines in the National Environmental Policy Act. Assessments usually include the following sections:

- 1) Background information describing the affected population and the environmental setting, including archaeological and historical features, public utilities, cultural and social values, topography, hydrology, geology and soil, climatology, natural resources, and terrestrial and aquatic communities ;
- 2) Description of the proposed action detailing its purpose, location, time frame, and relationship to other projects;

- 3) The environmental impacts of proposed action on natural resources, ecological systems, population density, distribution and growth rate, land use, and human health. These impacts should be described in detail and include primary and secondary impacts, beneficial and adverse impacts, short and long term effects, the rate of recovery, and importantly, measures to reduce or eliminate adverse effects;
- 4) Adverse impacts that cannot be avoided are described in detail, including a description of their magnitude and implications;
- 5) Alternatives to the project are described and evaluated. These must include the "no action" alternative. A comparative analysis of alternative permits the assessment of environmental benefits, risks, financial benefits and costs, and overall effectiveness;
- 6) The reason for selecting the proposed action is justified as a balance between risks, impacts, costs, and other factors relevant to the project;
- 7) The relationship between short and long term uses and maintenance is described, with the intent of detailing short and long term gains and losses;
- 8) Reversible and irreversible impacts;
- 9) Public participation in the process is described;
- 10) Finally, the EIS includes a discussion of problems and issues raised by interested parties, such as specific federal, state, or local agencies, citizens, and activists.

The environmental impact assessment process provides a wealth of detailed technical information. It has been effective in stopping, altering, or improving some projects. However, serious questions have been raised about the adequacy and fairness of the process. For example, assessments may be too narrow or may not have sufficient depth. The alternatives considered may reflect the judgment of decision makers who specify objectives, the study design, and the alternatives considered. Difficult and important questions exist regarding the balance of environmental, economic, and other interests. Finally these issues often take place in a politicized and highly charged atmosphere that may not be amenable to negotiation. Despite these and other limitations, environmental impact assessments help to provide a systematic approach to sharing information that can improve public decision-making.

Environmental Laws And Regulation

Man has drawn so much from nature for the satisfaction of his needs, desires and ambitions resulting in the immediate need for proper environmental management. The proper environmental management requires that society and man's demands should be so regulated that natural environment is able to sustain the need for development. The question of environmental protection would essentially be a question of re-allocation of priorities among various needs and choosing among diverse means for meeting them. The environmental protection is the concern of everyone. The fundamental question

before the world today is whether we can allow the destruction of the environment leading to the destruction of all life on the earth. Hence protection of environment is of paramount importance.

Environmental laws

Major legislations directly dealing with the protection of environment in India are

1. The wild life protection Act, 1972.
2. The forest conservation Act, 1980.
3. The water (Prevention and control of pollution) Act, 1974.
4. The air (Prevention and control of pollution) Act, 1981.
5. The Environment (Protection) Act, 1986.
6. The Public Liability Insurance Act, 1991.
7. The National Environment Tribunal Act, 1995.

The wild life protection Act, 1972 provides for rational and modern wildlife management, while the forest protection Act, 1980 has been enacted to check indiscriminate deforestation and diversion of forest land for non-forest purposes. The water and air Acts are the major instruments for the control of water and air pollution and these have provided for the establishment of the Central and State Pollution Control Boards.

Environmental protection under Indian constitution

The 42nd Amendment to the constitution brought about in the year 1974 inserted two new Articles namely.

(I) Art. 48-A under Directive principles of State Policy, making it the responsibility of the State Government to protect and improve the environment and to safeguard the forests and wildlife of the country.

(II) Art. 51-A (g) under Fundamental duties of citizens; making it the fundamental duty of every citizen to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures.

The Environment (Protection) act, (EPA) 1986 is a landmark legislation which provides for a single focus in the country for the protection of environment and aims at plugging the loopholes in the existing legislation. It is a comprehensive legislation to deal with water, air and land pollution and hazardous wastes and handling, storage and transportation of hazardous chemicals and wastes.

Important sections of EPA, 1986

Section and its contents

Section 2 – define the terms, environment, environmental pollutant, environmental pollution and hazardous substance.

Section 3 : Power of Central Government to take measures to protect and improve environment.

Section 4 : Appointment of officers and their powers and functions for the purpose of this Act.

Section 5 : Power to give directions to the closure, prohibition or regulation of industry, operation or process; or stoppage or regulation of the supply of electricity or water or any other service.

Section 6 : Rules to regulate environmental pollution. Rules in respect of

- (a) Standards of quality of air, water or soil for various areas and purposes;
- (b) Maximum allowable limits of concentrations of environmental pollutants (including noise) for different areas;
- (c) Procedures and safeguards for handling hazardous substances.
- (d) Prohibition and restriction on the handling of hazardous substances in different areas.
- (e) Prohibition and restriction on the location of industries and carrying on of processes and operations in different areas;
- (f) Procedures and safeguards for the prevention of accidents which may cause environmental pollution and for providing remedial measures for such accidents.

The Public liability Insurance Act, 1991, provides mandatory insurance for the purpose of providing immediate relief to the persons affected by accidents occurring while handling any hazardous substance.

The National Environmental Tribunal Act, 1995, seeks to constitute a tribunal with Benches to award compensation for damage to persons, property and the environment arising out of any activity involving hazardous substances. All these Acts are amended from time to time to rationalize and expand their scope, coverage and penal provisions.

Environmental Education

Environmental education ("EE") refers to organized efforts to teach about how natural environments function and, particularly, how human beings can manage their behavior and ecosystems in order to live sustainably. The term is often used to imply education within the school system, from primary to post-secondary. However, it is sometimes used more broadly to include all efforts to educate

the public and other audiences, including print materials, websites, media campaigns, etc. Related disciplines include outdoor education and experiential education. The United Nations Educational Scientific and Cultural Organization (UNESCO) and United Nations Environment Program (UNEP) created three major declarations that have guided the course of environmental education.

Stockholm Declaration

June 5-16, 1972 - The Declaration of the United Nations Conference on Human Environment. The document was made up of 7 proclamations and 26 principles "to inspire and guide the peoples of the world in the preservation and enhancement of the human environment.

The Belgrade Charter

October 13-22, 1975 - The Belgrade Charter was the outcome of the International Workshop on Environmental Education held in Belgrade, Yugoslavia. The Belgrade Charter was built upon the Stockholm Declaration and adds goals, objectives, and guiding principles of environmental education programs. It defines an audience for environmental education, which includes the general public.

The Tbilisi Declaration

October 14-26, 1977 - The Tbilisi Declaration noted the unanimous accord in the important role of environmental education in the preservation and improvement of the world's environment, as well as in the sound and balanced development of the world's communities. The Tbilisi Declaration updated and clarified The Stockholm Declaration and The Belgrade Charter by including new goals, objectives, characteristics, and guiding principles of environmental education.

Antecedents

In the United States some of the antecedents of Environmental Education were Nature Studies, Conservation Education and School Camping. Nature studies integrated academic approach with outdoor exploration. Conservation Education brought awareness to the misuse of natural resources. The governmental agencies like the Forestry Service and the EPA were also pushing a conservation agenda. Conservation ideals still guide environmental education today. School Camping was exposure to the

environment and use of resources outside of the classroom for educational purposes. The legacies of these antecedents are still present in the evolving arena of environmental education.

Environmental education has been considered an additional or elective subject in much of traditional K-12 curriculum. At the elementary school level, environmental education can take the form of science enrichment curriculum, natural history field trips, community service projects, and participation in outdoor science schools. In secondary school, environmental curriculum can be a focused subject within the sciences or is a part of student interest groups or clubs. At the undergraduate and graduate level, it can be considered its own field within education, environmental studies, environmental science and policy, ecology, or human/cultural ecology programs.

The North American Association for Environmental Education has established the following "Guidelines for Excellence" for environmental education:

1. Fairness and accuracy: EE materials should be fair and accurate in describing environmental problems, issues, and conditions, and in reflecting the diversity of perspectives on them.

- Factual accuracy.
- Balanced presentation of differing viewpoints and theories.
- Openness to inquiry.
- Reflection of diversity.

2. Depth: EE materials should foster an awareness of the natural and built environment, an understanding of environmental concepts, conditions, and issues, and an awareness of the feelings, values, attitudes, and perceptions at the heart of environmental issues, as appropriate for different developmental levels.

- Awareness
- Focus on concepts
- Concepts in context
- Attention to different scales.

3. Emphasis on skills building: EE materials should build lifelong skills that enable learners to address environmental issues.

- Critical and creative thinking
- Applying skills to issues

- Action skills.

4. Action orientation: EE materials should promote civic responsibility, encouraging learners to use their knowledge, personal skills, and assessments of environmental issues as a basis for environmental problem solving and action.

- Sense of personal stake and responsibility
- Self-efficacy.

5. Instructional soundness: EE materials should rely on instructional techniques that create an effective learning environment.

- Learner-centered instruction
- Different ways of learning
- Connection to learners' everyday lives
- Expanded learning environment
- Interdisciplinary
- Goals and objectives
- Appropriateness for specific learning settings
- Assessment.

6. Usability: EE materials should be well designed and easy to use.

- Clarity and logic.
- Easy to use.
- Long lived.
- Adaptable.
- Accompanied by instruction and support.
- Make substantiated claims.
- Fit with national, state, or local requirements.

Related disciplines

Environmental education has crossover with the disciplines of outdoor education and experiential education. Both disciplines complement environmental education yet have unique philosophies.

- Outdoor education means learning "in" and "for" the outdoors. It is a means of curriculum extension and enrichment through outdoor experiences. Environmental education is often taught or enhanced through outdoor experiences. The out of doors experience while not strictly environmental in nature often contain elements of teaching about the environment.

- Experiential education is a process through which a learner constructs knowledge, skill, and value from direct experiences. Experiential education can be viewed as both a process and method to deliver the ideas and skills associated with environmental education.

While each of these disciplines have their own objectives, there are points where both disciplines overlap with the intentions and philosophy of environmental education.

Trends

One of the current trends within environmental education seeks to move from an approach of ideology and activism to one that allows students to make informed decisions and take action based on experience as well as data. Within this process, environmental curricula have progressively been integrated into governmental education standards. Some environmental educators find this movement distressing and a move away from the original political and activist approach to environmental education while others find this approach more valid and accessible.

Movement

There is a movement that has progressed since the relatively recent founding (1960s) of the idea of environmental education in industrial societies, which has transported the participant from nature appreciation and awareness to education for an ecologically sustainable future. This trend may be viewed as a microcosm of how many environmental education programs seek to first engage with participants through developing a sense of nature appreciation which is then translated into actions that affect conservation and sustainability.

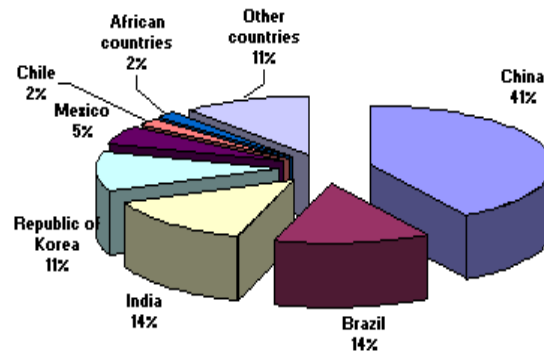
Clean Development Mechanism

The **Clean Development Mechanism (CDM)** is an arrangement under the Kyoto Protocol allowing industrialized countries with a greenhouse gas reduction commitment (called Annex 1 countries) to invest in projects that reduce emissions in developing countries as an alternative to more expensive emission reductions in their own countries. A crucial feature of an approved CDM carbon project is that it has established that the planned reductions would not occur without the additional incentive provided by emission reductions credits, a concept known as "additionality".

The CDM allows net global greenhouse gas emissions to be reduced at a much lower global cost by financing emissions reduction projects in developing countries where costs are lower than in

industrialized countries. However, in recent years, criticism against the mechanism has increased. Critics claim many approved projects are not actually additional.

The CDM is supervised by the CDM Executive Board (CDM EB) and is under the guidance of the Conference of the Parties (COP/MOP) of the United Nations Framework Convention on Climate Change (UNFCCC).



CDM projects to date

As of 21 July 2008, 1128 projects have been registered by the CDM Executive Board as CDM projects. These projects reduce green house gas emissions by an estimated 220 million ton CO₂ equivalent per year. There are about 4,000 projects yet to be certified. These projects would reduce CO₂ emissions by over 2.5 billion tons until the end of 2012. However, the previous adoption rate suggests that only a fraction of these projects will be certified.

Lecture 16. National and state level organizations - Environmental Laws and Acts – Environmental Education – CDM.

1.	An agency, that commissions original articles on environmental matter and sells them as features to newspapers and magazines is ----- (EarthScan)
2.	For India -----, a member of CITES functions as nodal agency for participation in international agreement (MoEF)
3.	----- is a written analysis that describes the probable and possible effects of planned industrial or civil project activities on the ecosystem, resources, and environment (Environmental Impact Assessment).
4.	-----, 1980 has been enacted to check indiscriminate deforestation and diversion of forest land for non-forest purposes (Forest protection Act, 1980).
5.	----- provides mandatory insurance for the persons affected by accidents while handling any hazardous substance (The Public liability Insurance Act, 1991).
6.	The ----- Declaration of the United Nations Conference on Human Environment, 1972 "to inspire and guide the peoples of the world in the preservation and enhancement of the human environment (Stockholm)
7.	The ----- updated and clarified The Stockholm Declaration and The Belgrade Charter by including new goals, characteristics, and guiding principles of environmental education (Tbilisi Declaration)
8.	The ----- is an arrangement under the Kyoto Protocol allowing industrialized countries with a greenhouse gas reduction to invest in projects that reduce emissions in developing countries as an alternative to more expensive emission reductions in their own countries (Clean Development Mechanism (CDM))
9.	The Indian organization responsible for fixing environmental quality standard is ----- (MoEF)
10.	In 2008, 1128 projects have been registered as CDM projects reduce greenhouse gas emissions by an estimated ----- tonnes CO ₂ equivalent per year (220 million)