ENVIS
Newsletter
on State of Environment
Supported by Ministry of Environment and Forests, Government of India

Vol.4 No.3 September 2007 | A quarterly issue | ISSN 0974 133x

Environmental Education
for Sustainable Development

Save Ozone Layer

Reduce
Reuse
Recycle

ENVIS Centre, Department of Environment, Government of Tamil Nadu
Panagal Building, No.1, Jeenis Road, Saidapet, Chennai-600 015. Tel: 044 2433 1243
Fax: 044 2433 6594 Email: tn@envis.nic.in Website: www.tnenvis.nic.in

Environmental Education for Sustainable Development

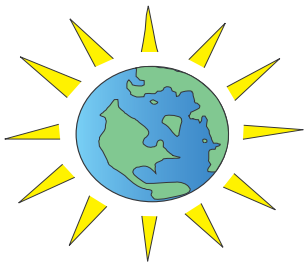
Education for sustainable development (ESD) is a vision of an education that seeks to balance human and economic well-being with cultural traditions and respect for the earth's natural resources. ESD applies trans disciplinary educational methods and approaches to develop an ethic for lifelong learning fosters respect for human needs that are compatible with sustainable use of natural resources and the needs of the planet and nurtures a sense of global solidarity. ESD is a "dynamic concept that encompasses a new vision of education that seeks to empower people of all ages to assume responsibility for creating and enjoying a sustainable future." The overall aim of ESD is to empower citizens to act for positive environmental and social change, implying a participatory and action-oriented approach. ESD integrates concepts and analytical tools from a variety of disciplines to help people understand the world in which they live in. Pursuing sustainable development through education requires educators and learners to reflect critically on their own communities; identify non-viable elements in their lives; and explore tensions among conflicting values and goals. ESD brings a new motivation to learning as pupils become empowered to develop and evaluate alternative visions for sustainable future and work to collectively to fulfill these visions (*www.unesco.org/education/desd*).

Education for Sustainable Development: An Evolving Concept

From the time sustainable development was first endorsed at the United Nations (UN) General Assembly in 1987, the concept of education for sustainable development has also been explored. The 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro brought together representatives of Governments, International and Non-Governmental Organisations (NGOs), and civil society to discuss the challenges of the next century and to adopt a global plan of action to meet these challenges. The action plan, known as Agenda 21, provided a comprehensive set of principles to assist Governments and other institutions in implementing sustainable development policies and programmes. Chapter 36 of the Agenda 21 affirmed education as essential for making progress toward sustainable development *(www.unesco.org/education/desd*).

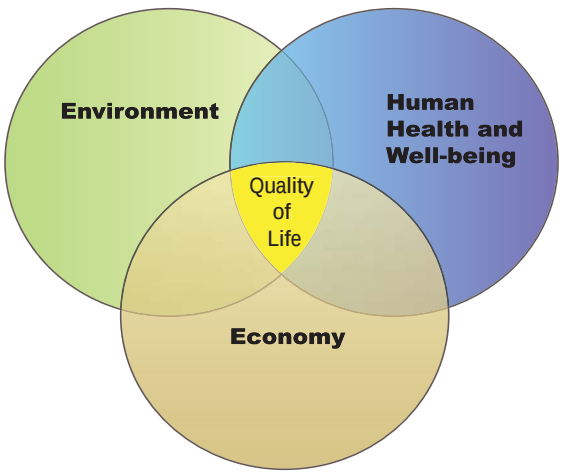
Sustainability and Sustainable Development

The aim of sustainability is to make equitable decisions and to conduct activities so that human health and well-being, the environment, and the economy can be improved and maintained for future generations. Sustainability is a complex idea which requires understanding, not just of social, environmental, and economic issues, but of their ongoing interrelationship and interdependence. The process of sustainable decision making involves a critical examination of our priorities, habits, beliefs, and values. The challenge of sustainability is that it must be a collaborative process in which the citizens need to agree upon a vision as well as an action plan for the future. This requires collective and conscious decision making, and is the heart of Education for a Sustainable Future.



Sustainability refers to the conservation, Protection, and regeneration of resources over an indefinite period of time. Central to sustainability is the idea that today's decisions affect the future of human health and well-being, the environment, and the economy.

The purpose of sustainable development is to integrate and balance our needs, so that an equitable quality of life for all can be achieved and sustained in the future, for generations to come.



Sustainable human health and well-being is characterized by people coexisting harmoniously within local, national, global communities, and with nature. A sustainable society is one that is physically, psychologically, spiritually, and socially healthy. The well-being of individuals, families and communities is of prime importance. A sustainable environment is one in which the life-sustaining processes and natural resources of the Earth are conserved and regenerated.

A sustainable economy is one that provides equitable access to resources and opportunities. It is characterized by development decisions, policies, practices that respect cultural realities and differences, and not exhausting the Earth's resources. A sustainable economy is evident when decisions, policies and practices are carried out so as to minimize their impact on the Earth's resources and to maximize the regeneration of the natural environment.

A Broad Road Map for Environmental Education in Schools and Colleges

Dr. Geetha Iyer,
Science and Environmental Education

This paper briefly outlines an approach that can be adopted to make environmental education meaningful in schools and colleges for ushering a much needed change in education. The goal of environment education should be to attempt a change in attitudes, especially with regard to our current unsustainable lifestyles. A change in attitude is not possible if the mode of transaction of the topics is pedantic. It is important and imperative that environmental education be taught in an explorative experiential mode. Is this possible? It is, if the teaching methodology is altered. Opportunity to learn from our surroundings need to be initiated. Textbooks that are an impediment to learning from our environment should be used minimally. It can be noted that all topics taught at the school level hold tremendous possibilities for learning from the environment and our surroundings. Such a process would lay a solid foundation for meaningful undergraduate education. How can environment education be made experiential?. To begin with, the syllabus must outline merely concepts for each class, these concepts could move from simple to complex as a student grows in years. In learning these concepts, the students will automatically gather facts and also develop the ability to analyse facts in order to understand concepts. Facts are not concepts merely tools for understanding concepts. The understanding is important to the development of right attitude.

How do we translate this approach into action? Carefully designed activities at the primary and upper primary levels, projects at the high school level, and case studies at the higher secondary and undergraduate levels should be adopted as the preferred methodology. Activities and projects where there is scope for exploration, discovery, fact-gathering, analysis, and drawing of inferences can be adopted. To give an example, if the concept that a Class III child is learning about the importance of food (not food chain,just food), then the child must be given the opportunity to analyse what he/she is eating, and to be able to see where the food he/she consumes is grown, the hard work that the farmer puts in and how the food reaches us. In other words, learning a concept would require the input of more than one activity. Each activity would be of a different nature, giving the child different experiences. Facts would be gathered by observation and experiment and what is learnt would finally find written articulation in the child's own words. One concept through many activities; not one activity and many facts. Furthermore, evaluation of what is learnt should not be limited to answering a few questions, as is the current practice. It will have to be more thorough. For example, an event or a description that would require a child to be involved in the problem-solving, i.e., identifying facts for analysis, inferring and taking decisions, would be the prescription for assessment. Thus, environment education would become a tool for change which is what the Supreme Court envisaged when it took that landmark decision. It is important therefore for all institutions to review whether the road map they have adopted facilitates understanding of issues to bring about change.

Environmental Education and Awareness in India

Environmental Education is a process of recognising values and clarifying concepts in order to develop skills and added tools necessary to understand and appreciate the inter-relationship among man, his culture and his bio-physical surrounding. It creates an overall perspective, which acknowledges the fact that natural environment and man-made environment are interdependent. It should consider the environment in its totality and should be a continuous lifelong process beginning at the pre-school level and continuing through all stages. It should be inter-disciplinary and examine major environmental issues from local, national and international points of view. It is through this process of education that people can be sensitized about the environmental issues. To achieve the above objectives, the MoEF, GoI has been implementing several schemes and programmes. Some of the major schemes are as follows:

I. National Green Corps (NGC)

NGC is a programme of the MoEF which aims to provide opportunities for children to understand

the environment and environmental problems, through school eco-clubs. In order to facilitate NGC, a Nodal Agency as well as a Resource Agency have been designated for every State/UT.

II. National Environment Awareness Campaign (NEAC)

The NEAC was launched with the objective of creating environmental awareness at the national level. It is a multi-media campaign which utilises the conventional and non-conventional methods of communication for disseminating environmental messages to a wide range of target groups. Under this campaign seminars, workshops, training programmes, camps, padyatras, rallies, public meetings, exhibitions, essay, debate,painting, poster competitions, folk dances and songs, street theatre, puppet shows, preparation and distribution of environmental education resource materials etc., are undertaken followed by action like plantation of trees, management of household waste, cleaning of water bodies etc. Diverse target groups encompassing students, youth, teachers, tribals, farmers, other rural population, professionals and the general public are covered under NEAC.

III. Environmental Education in School System (EESS)

EESS was a subcomponent of the India Environment Management Capacity Building Project undertaken by MoEF supported by the World Bank. Centre for Environment Education was the consultant to the MoEF for the implementation of this project. The objective of the project was to strengthen Environmental Education (EE) in the school system through training teachers in active EE teaching-learning methods and through co-curricular activities and projects.

IV. National Environmental Education Programme

NEEPS in schools is implemented by the Centre for Environment Education. NEEPS aims to ensure the implementation of a systematic year-long calendar of EE activities in each school, through sharing educational material, teacher training, facilitating development of locale-specific programmes and materials, monitoring and feedback analysis for enhancing quality. Using mainly a 'cluster approach' for delivery of innovative Environmental Education programmes and materials to schools.

Environmental Education and Awareness in Tamil Nadu

I. Eco Clubs

In Tamil Nadu, Eco-clubs have been established for imparting environmental education to students. At present there are 1200 school eco-clubs functioning in all the districts at the rate of 40 schools per district. This project is funded by the State Government to educate the children about their immediate environment and causes for its deterioration and to impart knowledge on the concepts of eco-systems through field visits and demonstrations. Through Eco club activities, students are mobilized towards scientific enquiry into environmental problems and involve them in the efforts to preserve environment.

II. National Green Corps

Ministry of Environment and Forests, Government of India has launched the National Green Corps Progamme (NGC) in all Districts of our country. In Tamil Nadu National Green Corps has been launched in 7500 schools located in 30 districts at

250 schools per district. The main objectives of this programme is to educate children about their immediate environment and impart knowledge about the eco-systems, their inter-dependence and their need for survival, through visits and demonstrations and to mobilise youngsters by instilling in them the spirit of scientific inquiry into environmental problems and involving them in the efforts of environmental preservation.

Green Initiatives in Tamil Nadu under NGC

To promote the Green Initiatives in Tamil Nadu, Department of Environment has designed a Student Member's Work Diary for all the eco club students to use for the Eco-club activities. Under the eco club programmes students undertake various activities like campus cleaning, green belt development, vermi composting, rain water harvesting and also celebrate important Environment days like World Environment Day, Ozone Day, World Water Day, World Wet Land Day. Students are also encouraged to participate

in various environmental competitions like Enviro Expo, online Quiz, Drawing, Painting, Elocution and Cultural Programmes.

1. Vermi composting

Vermi-composting is promoted in some eco club schools to manage the organic waste disposed from the schools.

What is vermicomposting?

In this method, earth worms are added to the compost. These help to break the waste and the added excreta of the earth worms makes the compost very rich in nutrients. To make a compost pit, a cool, shaded corner of the garden or the school compound is selected and a pit, which ideally should be 3 feet deep is dug. This depth is convenient for aerobic composting, as the compost has to be turned at regular intervals in this process. Preferably the pit should be lined with granite or brick to prevent nitrite pollution of the subsoil water. Each time organic matter is added to the pit it should be covered with a layer of dried leaves or a thin layer of soil which allows air to enter the pit thereby preventing bad odour. At the end of 45 days, the rich pure organic manure is ready to be used.



2. Green Belt Development

Trees are the largest plants that inhabit the earth. Tree obsorbs carbon dioxide and produces oxygen, making it possible for us to breathe and live.

Did you know about tree?

A full-grown tree is able to absorb the pollution generated by a car running continuously for 25,000 km. Trees and plants are able to reduce the temperature of an area by as much as 10°C. Over 25% of our medicines are derived from plants. One hectare of land under green cover helps prevent removal of 24 kg of fertile topsoil by wind and water every year. Trees help to mitigate global warming, by means of capturing and storing carbon and acts as a carbon sink.

Government Higher Secondary School, Mela Ulur, Thanjavur

3. Environmental Awareness

Environmental awareness is one of the main objectives of the NGC eco-club project in Tamil Nadu. Department of Environment is encouraging all the eco clubs to observe important Environment days. Vivekananda Kendra Vidhyalaya of Kanyakumari district celebrated the Natural Resources Day on 5th October 2007. Government Boys Higher Secondary School of Hosur, celebrated the International Ozone Day on 16th September. The Government High School, Dindigul, has taken up many awareness programmes through planting trees, cycle rally and street plays. Government Boys Higher Secondary School, Thandarampet has taken extensive efforts to spread awareness among the school students and public by celebrating World Wetland Day, World Water Day, World Forestry Day, World Environment Day etc. This school has also conducted activities such as tree planting, vermi composting, elocution and essay writing competitions for school students to spread environmental awareness.

Adyar Poonga Project

The Government of Tamil Nadu has initiated an ambitious project to restore the ecological balance in the Creek and the Estuary area of the Adyar river. This project was conceived to restore the fragile Eco-system of the precious endangered wetland habitat of the Adyar Estuary and Creek and raise the awareness of the general public to environmental issues. One of the main objectives of the eco park is to encourage and promote Environmental education to children on the ecological system and diverse environmental issues, currently available species in water and land, plants and trees by means of interactive gardens. The Adyar Poonga plans to sensitize visitors to the environment through a working model of an environmentally sustainable house demonstrating water collection, conservation and treatment, energy efficient alternatives such as solar, bio-gas and wind, waste management techniques as well as options for eco-friendly building materials. These will all be woven together to form a tapestry of environmental awareness *(http://adyarpoonga.com/engli/index1.html)*.

Events

1. Enviro Wiz –2007 : ENVIS Centre, Department of Environment in collaboration with Eureka Forbes conducted an "ENVIRO WIZ –2007" for the online quiz winners from 7th to 11th May to educate the students on various environmental

concern. The Chief Guest, Thiru M.B. Nirmal, Founder of EXNORA International encouraged students to participate in environmental activities. Thiru K.S. Neelakantan I.F.S., Director, DoE, asked students to get exposed to environment related problems and find solutions to these problems. During the ENVIRO WIZ-2007 a trekking was organized in the Guindy National Park and a wildlife film was screened. Students were also taken to Rain center, Eco-house and a Solid Waste Management site at Pammal. On the final day each student was asked to make a powerpoint presentation. Thiru K.S.S.V.P. Reddy I.F.S., Additional Director, DoE gave away the prizes to the winners.

2. Madurai Symposium

A seminar on pollution abatement in the water bodies and State Coastal Zone Management was organised by the Department of Environment and DHAN Foundation, Madurai from 24-29 Sep 2007. Thiru K.S. Neelakantan, I.F.S., Director, DoE, Govt. of Tamil Nadu delivered the welcome address. Mr. S. Deivasigamani, Dy. Director, chaired the seminar on environmental awareness and highlighted the type of work undertaken by the DoE. This included raising awareness among students with the help of the ENVIS Centre. Mr. Neelavan, Project Manager, Environment

Management Agency of TN, spoke about the pollution in water bodies and on the latest technologies which are used for improving the water quality in water bodies. Dr. K.P. Raghuram, Programme Officer, ENVIS, made presentation on Coastal Zone Management. He explained about the importance of coastal areas, in particular corals, seaweed, salt pan, mangroves, sand dunes and fish. Mr. J.D.Marcus Knight, Information Officer, ENVIS, highlighted the ENVIS activities and conducted a quiz programme for the school students. More than 200 students participated in this event.

3. Flipper Fest' 07 : The Tree Foundation along with the Indian Coast Guard, NIOT, SACEP, Loyola College and the Department of Environment organized the Flipper Fest '07 on 1st and 2nd Sep 2007. Various competitions like quiz, junk art, street play, photography, painting and poetry were organized to create awareness about Marine biodiversity and its conservation. Nearly

487 students from different schools and colleges participated and 5,420 responsible citizens who had an urge to act in favour of nature visited the event. This event was organised by Dr. Supraja Dharini, Chairperson, Tree Foundation.

Scope of Environmental Science

Environmental science encompasses issues such as climate change, conservation, biodiversity, groundwater and soil contamination, use of natural resources, waste management, sustainable development, air pollution and noise pollution.

The postgraduate programme of Environmental Science is a multidisciplinary degree based on physical sciences and focuses on environmental issues relating to air, water, land and energy, including air and water pollution, land salinisation, climate change and the greenhouse effect. Graduates are in demand and work in a variety of areas, including government agencies and environmental consulting companies.

Environmental Education Web Resources

1. **TUNZA** - **www.unep.org/tunza/children/**

TUNZA means to "treat with care". The programme is based on a strategy that aims to provide young people with information and tools on how to "treat Mother Earth with care" and how to act for a better world. To commemorate the World Environment Day celebration, TUNZA, UNEP is organizing various competitions for school students. Students can participate online in the painting contest and Volva Adventure Award contest for the best Environmental Project.

2. **Green School Programme, CSE India** - **www.cseindia.org/**

The green school programme is a way of teaching the lessons on environmental conservation in school. CSE has designed a Manual - A self learning and assessment tool so that teachers can work with students to audit their use of natural resources and to experiment with environment friendly practices. The Green School Programme aims to encourage educational institutions to improve their environmental performance. It will facilitate about teaching environment in a virtual class room.

3. **CEE India** – **www.ceeindia.org/cee/index.html**

Centre for Environment Education (CEE) is a national institution engaged in developing programmes and material to increase awareness about the environment and sustainable development. CEE has an ENVIS Centre on Environmental Education, which caters to the information needs of environmental educators and other interested groups. This is done through Green Teacher- a website for Environmental Education (EE), Query Response Service - which respond to EE information requests, EE Bank - a computerized database of concepts, activities, case studies and CEE-Information Service Centre - a collection of books, periodicals and a variety of non-print materials.

4. **TERI** - **www.edugreen.teri.res.in/index.asp.**

TERI has designed a website exclusively for children called Edugreen. This site has stories, poems, multimedia, environmental quotes, green quiz, environmental laws, games and hordes of environmental information for the benefit of children. TERI has also launched the GREEN Olympiad, which culminates into a multi-episode environment quiz programme on television.

5. **Environmental Awareness in Tamil Nadu** – **www.environment.tn.nic.in/ngc/**

ENVIS Centre of the Department of Environment has launched an interactive website to create environmental awareness among school children. The website consist information on NGC and Eco club projects and their activities, eco technologies and environmental experts. Various links have also been provided to Environmental Education related web resources. The website is having interesting components like online quiz and a creative corner where the students can upload their paintings or slogans or any project related to environment.

6. **GLOBE** - **www.globe.gov/r/**

It is the outcome of worldwide community of students, teachers, scientists, and citizens working together to better understand, sustain, and improve Earth's environment at local, regional, and global scales. The Mission of GLOBE is to promote the teaching and learning of science, enhance environmental literacy, stewardship, and promote scientific discovery.

Editorial Board: Editor-in-chief: Thiru Bhagwan Singh, IFS., Director, Editor: Thiru K.S.S.V.P. Reddy, IFS., Associate Editor: Dr. C. Thomson Jacob, Layout : K. P. Raghuram, Printed at Nagaraj & Co., Chennai-41 Tel: 044 6614 9291